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Empires of the Turning Tide: A History of Lewis and Clark National Historical Park and the Columbia-Pacific Region

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From the wave-pounded rocky headlands of Ecola Point to the still, shallow waters of Willapa Bay, from the wild and roiling mouth of the Columbia River to the high timbered peaks of the Coast Range – the Columbia-Pacific region is a place of rare environmental diversity and potential. Here, a succession of peoples – Native American communities, fur traders, Scandinavian immigrants, and modern urban tourists to name but a few – have understood and used the natural landscape in wildly different ways, each leaving very different imprints upon the land. Many cornerstone moments in this history played out on lands that are now set aside as part of the Lewis and Clark National and State Historical Parks. *Empires of the Turning Tide* illuminates the history of the many people who together have called this region home, and their relationships with the park landscapes, waters, and natural resources that continue to set the Columbia-Pacific region apart.

Dr. Douglas Deur is a cultural geographer, known widely for his studies of Native American land and resource traditions, as well as the environmental and cultural histories of National Parks in the American West. A multigenerational resident of the Columbia-Pacific region, he serves as research professor in the Department of Anthropology at Portland State University and an adjunct professor in the University of Victoria (BC) School of Environmental Studies.

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A History of Lewis and Clark National and State Historical Parks and the Columbia-Pacific Region

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With Contributions by
Stephen R. Mark, Deborah Confer, and Rachel E. Lahoff

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With Contributions by

Stephen R. Mark, Crater Lake National Park

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Members of the Wilkes Expedition, encountering the forests of the Astoria area in 1841. From Wilkes' *Narrative* (Wilkes 1845).

Cover:
"Lumbering," one of two murals depicting Oregon industries by artist Carl Morris; funded by the Work Projects Administration Federal Arts Project for the Eugene, Oregon Post Office, the mural was painted in 1942 and installed the following year.

Back cover:
Top: A ship rounds Cape Disappointment, in a watercolor by British spy Henry Warre in 1845. Image courtesy Oregon Historical Society.

Middle: The view from Ecola State Park, looking south. Courtesy *M.N. Pierce Photography.*

Bottom: A Joseph Hume Brand Salmon can label, showing a likeness of Joseph Hume, founder of the first Columbia-Pacific cannery in Knappton, Washington Territory. Image courtesy of Oregon State Archives, Historical Oregon Trademark #113.

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Fonts used in this book are old map fonts: Cabin, Merriweather and Cardo.

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Foreword: Land and Life in the Columbia-Pacific Region

Since the beginning of human time on the lower Columbia, this great Western river has been a nexus of regional significance, a place where natural bounty and Northwest inhabitants meet and mingle. Spilling from the Northwestern interior, the Columbia meets the coast with a scale and force that define the Columbia-Pacific region, as it is often called today. From the estuaries teeming with life to the wave-pummeled outer beaches, and on verdant and rain-soaked slopes, water defines the place. Here, the West's largest river meets the Earth's greatest sea.

The human history of the Columbia-Pacific region matches the scale of its geography. A trade and transportation corridor for unknown generations before Lewis and Clark's tenure, the mouth of the Columbia has long served as a crossroads between cultures, a geographical locus for the interaction of peoples from around the region and across the globe. From ancient times into the present, this place has also served as an economic locus, where the resource wealth of the Northwestern interior, from Willamette Valley beaver furs to Palouse grain, have crossed paths with the incoming resources of the coast and Pacific basin. Long before Lewis and Clark, people converged here to trade, to work together, and to share their ideas, languages and songs.

Captains Meriwether Lewis and William Clark, whose visit in the winter of 1805–06 shapes the mandates and message of today's Lewis and Clark National and State Historical Park (LEWI), were keystone characters in many respects. They were symbolically central and catalytic figures, representing the vanguard of Anglo-American exploration and ultimately, the reoccupation and transformation of the larger Northwest region. Their influence in this story cannot be lightly dismissed. Yet the captains and their Corps of Discovery were visitors, stepping into and back out of a world they could only perceive through the lens of one rain-soaked winter spent huddled on its shores. As the Corps' ranks seemed to understand, they did arrived in a region with its own rich and ancient history. The history that would follow the Corps of Discovery's visit would prove to have its own richness, bringing a succession of new peoples and new ways of living that would change the land in

profound and enduring ways. The arrival of Lewis and Clark was in this respect a historical pivot-point, marking the end of thousands of years of autonomous Native American occupation and the beginning of something quite different, a story still being written today. The document that follows is in many respects an attempt to place the Corps of Discovery's journey in larger historical context, so these connections can be better understood.

If there are linkages that connect the successive phases of history in the region, they tend to be rooted in the nature of the Columbia-Pacific landscape. The relationship of humans with the distinctive lands and natural resources has always defined the region's character. More often than not, economies have centered on the accumulation and exchange of naturally occurring things—wild fish, trees from coastal forests, otter and beaver furs taken from the shore—and the freedom of movement along ocean beaches and navigable waters. Even the modern tourist industry, which does not harvest from the land per se, still depends on these natural landscapes for momentum and appeal. Beach, ocean, and mountainscape present natural resources in their own right.

Another theme that links these phases of history is a tendency toward economic busts and booms. Distant markets rise and fall and natural resources have at times been harvested beyond the limits of sustainability—especially in the 20th century era of *laissez faire* economies prior to the advent of regulatory controls. The sea otters that first brought explorers and non-Native traders to this coastline were all but extirpated from the Columbia-Pacific region a century later, the species of the area nearly extinct as otter furs adorned the hats, coats and capes of Asian and European gentry. Beaver fared a little better, rebounding slowly from depressed numbers in the 19th century. Salmon canning magnates arrived from depleted New England and California fishing grounds, building a nationally significant salmon industry on the banks of the Columbia estuary and feeding people throughout the nation, only to see the fish numbers plummet and the industry depart for Alaskan waters a few decades later. The Columbia-Pacific's timber industry and the forests that spawned it are still here today. Yet both are much changed. With modern tree farms bearing little resemblance to the ancient forests that preceded them, timber products and economies have transformed accordingly. As an industry that does not rely on resource extraction, tourism's potential for overexploitation may be relatively small. Still there are thresholds that may yet limit or change its character as people arrive in growing numbers and the Columbia-Pacific becomes an increasingly urbanized region.

While the economies of the Columbia-Pacific region have risen and fallen like the tides, new peoples have washed up on its shores with each cycle. The region's history is characterized by remarkable ethnic diversity that continues to shape the culture and character of the region. Long before Lewis and Clark's journeys, resident Native American communities—the Chinook, Clatsop and others—hosted traders, travelers, and even slaves hailing from tribes throughout the Northwestern region, gathering here to participate in a bustling trade at the river's mouth. The European fur trade in turn brought people of French-Canadian, Native Hawaiian, Cree, Iroquois, Metis, and other ethnicities to the river's mouth who worked under the oversight of a British (often ethnically Scottish) managerial class.

As the fur trade waned, new industries developed through the initiative of venture capitalists, largely of northwestern European extraction and mostly from the American East, who recruited immigrant labor to build their empires. Some recruited immigrants from southern China, mostly male, who served as laborers in the region's canneries and early farms. Indeed, for a time the Chinese population rivalled that of the native-born American population in the Columbia-Pacific region. Some also recruited Scandinavian immigrants—Norwegians, Swedes, and Finns, in particular—who moved to the region as families. They helped build the early logging industry, worked in canneries and fishing boats, and eventually founded their own businesses and small farms. In time, new waves of immigrant labor arrived. For example, Japanese workers came in the early 20th century only to be removed under nationwide internment policies during World War II. Since their departure, other newcomers have come, especially laborers from Mexico and parts of Central and South America. Their presence in local industries has been widespread. Especially since the late 20th century, their impact is felt in every part of the burgeoning tourist industry. Native American labor has remained a small but persistent part of the local economy. Successive generations of immigrants have left lasting, multigenerational imprints on the region's demographic landscape, sharing traditions and values with one another, often intermarrying, producing a cultural mélange in the Columbia-Pacific region that has persisted in spite of homogenizing influences within American culture.

Each of these economies and communities has a bearing on the story of Lewis and Clark National and State Historical Parks. The various sub-units of the parks—no less than ten of them—include Cape Disappointment and Fort Columbia State Parks, Station Camp, and Dismal Nitch in Washington, as well as Fort Clatsop, the Fort-to-Sea Trail, Fort Stevens, Sunset Beach, the Lewis and Clark Salt Cairn in Seaside, and Ecola State Park. (The Yeon property, newly-acquired at the time of this writing, is

addressed here too, albeit parenthetically.) These park sub-units are widely dispersed along the region's shoreline and intersect with the historical geographies outlined above in myriad ways.

The scale and scope of this document reflects this broad impact. The National Park Service initiated the study with an ambitious vision, hoping it would provide a context for discussing the human history of the Columbia-Pacific region, including the whole of Clatsop County in Oregon, and Pacific and Wahkiakum counties in Washington. This was done in part to aid the public's understanding of historical themes, but also to aid anyone seeking to nominate properties in these parks to the National Register of Historical Places. At the time this research began, there were ongoing discussions within the communities of the Columbia-Pacific region and the offices of the National Park Service of a potential National Heritage Area that might be centered on the mouth of the Columbia, thus contributing to this document's broad geographical scope. As the research progressed and the National Heritage Area proposal was tabled, this study's objective narrowed somewhat, focusing on the historical context of lands now within Lewis and Clark National and State Historical Parks.

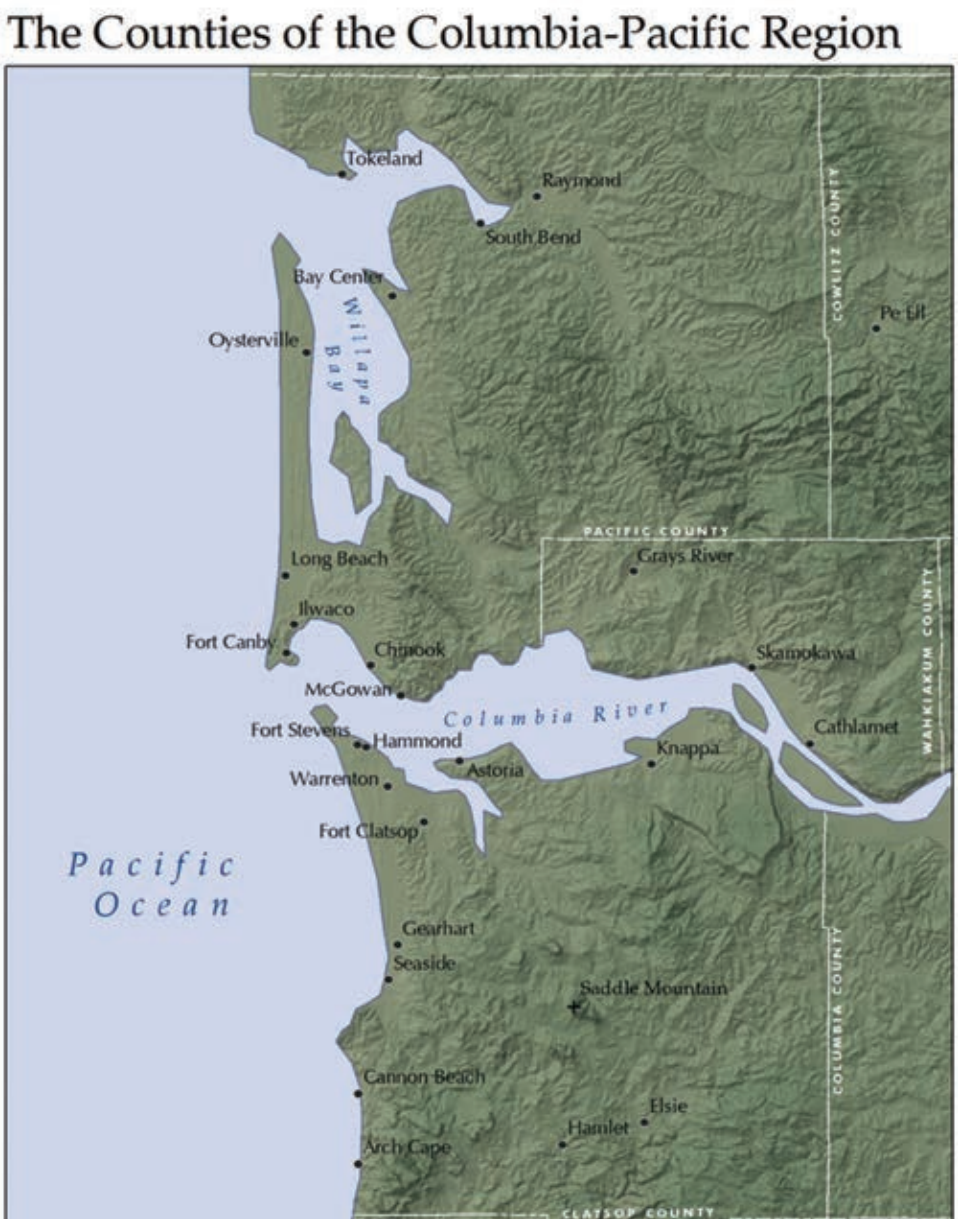
During this early planning for the study, the park superintendent at the time, David Szymanski, and the regional managers for Washington and Oregon state parks, expressed a desire to see the document written in a certain way. They wanted to provide the public with accurate and compelling interpretations of the parks, outlining broad storylines that would help interpreters situate past events on park lands within a broad and integrated historical context. Though their seasoned interpreters would know many of the stories included in the study, the document might be used to help train new interpreters, as well as to share the study's findings with a public curious about regional history. These managers also expressed interest in illuminating familiar themes—the fur trade or salmon canning—through the lenses of environmental and ethnic history, providing perspectives that have sometimes been overlooked in conventional historical treatments. Furthermore, they expressed a wish that we steer clear of fine-grained discussions of the Lewis and Clark Expedition, already a mainstay of park interpretation, to focus instead on events before and after their arrival that would situate the events of the winter of 1805–06 in their broader historical context. There was little interest in producing a manuscript defined primarily by the logic and lingo of the National Register of Historic Places, and they urged that we not turn the final report into a planning document that would bore the masses and sit dusty and unused on office shelves. The document in your hands has been produced in response to this larger vision.

A map of the LEWI Parks. Courtesy Chris Clatterbuck, National Park Service.

With such an ambitious scope, the breadth of the study is understandably vast, addressing key themes in human history over a period spanning hundreds of years. In light of this, the content had to be bounded by certain parameters. Foremost among these is a focus on historical developments that have imprinted the landscape, within parks or within sight of them. The research began with an attempt to define our key themes, reviewing which National Register properties existed in the area and conducting a windshield survey of historic properties in and immediately adjacent to the parks. From this effort, we defined what themes might require the greatest attention, while also illuminating the parks' future nomination needs for the National Register. The research team, principally Steve Mark, has produced National Register Nominations "context statments" for Cape Disappointment and Fort Columbia State Parks as part of this effort, while author Douglas Deur produced similar documentation for Fort Stevens (Deur 2014). Other spin-off documents from these early investigations were compiled separately, such as a windshield survey summary report (Deur 2009) and an overview of the historical configurations of Fort George (Watters and Deur et al. 2009). They are available from the National Park Service in the LEWI collections for anyone who wishes to see them.

While this exercise narrowed the list of topics, making park relevance a litmus test, the scope of the document remains broad. Writing summarily about any of the topics included—from the fur trade to salmon canning to the history of military occupation at the Columbia's mouth—is at best a challenge. Volumes could be (and, in many cases, have been) written about each of the themes discussed here with great brevity. Although this can prove awkward, we have sought to provide basic statements of historical context. Those seeking more depth are encouraged to mine our bibliography, which lists the sources we have reviewed, and to reach out to the staffs of our regional and state museums, many of whom have a vast knowledge of the topics at hand. A portion of the larger archive amassed for this project will be stored along with the preexisting collection at the Lewis and Clark National Historical and State Parks Archive, where it will be available to researchers and members of the public who seek greater detail.

Other factors have also made this research effort unique. The author, a longtime principal researcher on cultural and historical matters for the national parks and tribes of the West, has lived in the study area much of his life. His younger years were spent listening to the stories of community elders, exploring the history and derelict industrial landscapes of the forests and tidelands, navigating the cold,



The Columbia-Pacific region. Courtesy Patrick Hammons, Cartographer.

cavernous interiors of the old military forts, and watching Columbia-Pacific's archaeological sites slowly erode into the sea. His family's history is connected, at least tangentially, with many of the themes outlined herein. This local knowledge has helped to inform the content of the document in various ways.

From start to finish, this was very much a group effort. At each stage, the work was supported by fellow researchers Steve Mark (National Park Service), Deborah Confer (University of Washington), and Rachel Lahoff (Portland State University), all of whom contributed to the writing of sections of this document. Portland State University graduate students, especially Roy Watters, assisted in literature-review tasks. Lewis and Clark National and StateHistorical Parks (LEWI) staff, including David Szymanski, Deb Wood, and Chris Clatterbuck, made intellectual contributions of their own, as did National Park Service cultural resource specialist Gretchen Luxenberg. Finally, the document was reviewed by a number of topical specialists including Jim Sayce (Washington State Historical Society), Betsy Millard and Barbara Minard (Columbia Pacific Heritage Museum), Chrissy Curran (Oregon State Historic Preservation Office), Tricia Gates Brown (professional editor and former director of the Cannon Beach History Center), environmental advocate and poet Cameron LaFollette, Alex McMurry (Washington State Parks) and NPS historian Steve Mark.

Indeed, the staff at almost every museum in the Columbia-Pacific region has made a contribution to this project: the Clatsop County Historical Museum (Astoria), Columbia Pacific Heritage Museum (Ilwaco), and Columbia River Maritime Museum (Astoria) most of all, but also the Pacific County Historical Museum (South Bend) and various local museums in Warrenton, Seaside, Cannon Beach, and beyond. The Columbia Pacific Heritage Museum provided many photographs, as well as volunteer assistance that went above and beyond the call of duty. The archives and staff of the Washington and Oregon State Historical Societies in Tacoma and Portland aided considerably in identifying sources for this work while providing photographs of their own. So too, the official state archives in both states were of assistance, as were the archives of particular agencies, especially Washington State Parks and the Oregon Parks and Recreation Department. Certain local park staff members, such as recent Washington State Parks retiree Donella Lucero, have made invaluable contributions to this effort. Staff members from certain federal archives, including the National Archives and Records Administration (NARA) archives in both Seattle and Washington, D.C., assisted in certain tasks, as did the archivists from the National Park Service in both the Pacific-West and Washington, D.C., Support Offices. In addition, representatives from tribes with varying degrees of local interest

have provided brief but useful comments to the author in the course of this work, including members of the Chinook, Clatsop-Nehalem, Grand Ronde, Quinault, and Siletz tribes.

Finally, considerable non-Native oral tradition has aided in the effort, the observations and personal collections of loggers, fishermen, farmers, hoteliers and avocational local historians. The contributions of each of these sources were compiled, focusing attention on those that place park history in the context of regional history. In the pages that follow, the results and contributions of aforementioned sources are summarized thematically. This document is presented with the hope that, taken together, they might provide a foundation for future investigations and for good conversation regarding the history of the Columbia-Pacific region.

Cannery worker, Walt Hansen, processing Chinook salmon on the Columbia estuary waterfront. Photo courtesy Columbia-Pacific Heritage Museum.

1 The Environments of the Columbia-Pacific Region

A Brief Introduction

Draining a vast inland basin encompassing 260,000 square miles of the Pacific Northwest interior—from the Canadian Rocky Mountains to the drylands of Nevada and Wyoming, and from Idaho to vast portions of Montana, Oregon, and Washington—the Columbia River tumbles toward the ocean. The Columbia is a mighty river, but it must give way to the sea. On its lower reaches, the Columbia is effectively an estuary, shaped by tides and growing increasingly salty as it progresses from the Columbia River Gorge to the Pacific. Indeed, harbor seals (*Phoca vitulina*) and twice-daily tides encountered near modern Bonneville, energized members of the Corps of Discovery in late October 1805, signaling that the ocean was within reach. Here in the Columbia-Pacific region, where the Columbia River makes its final westward run, the river is swift but calm, rising and falling with the tides until it meets the heaving Pacific beyond the Columbia River bar.

The Columbia-Pacific region has been fundamentally shaped by the meeting of the river's drainage and the sea. The recoverable geological history of the region suggests that for millions of years some sort of estuary was situated on this part of the coastline, where the waters of northwestern North America meet the Pacific. By geologists' reckoning, complex arcs of volcanic islands and submarine lava flows erupting from deep below the Earth's crust, once dotted this shallow estuary of what would become the Columbia outfall during the Eocene period roughly 49 million years ago. Portions of these islands became the Crescent Formation foundations of important local landmarks, such as the Willapa Hills and Cape Disappointment (Lasimanis 1991; Snavely 1987; Walsh et al. 1987). The turbulent geologic history of this region, where oceanic and continental tectonic plates collide, continued to reshape the coast in dramatic ways. It produced volcanoes, uplifting mountains and submerging coastlines, and caused earthquakes and tsunamis.

In the Miocene epoch, roughly 11 million years ago, the collision between oceanic and continental plates seems to have accelerated (Orr and Orr 2006). The pressure

and mass of underground magma spiked, just as the continental plate lurched westward, creating vast fissures in the bedrock of eastern Oregon and Washington that oozed liquid lava, flowing downstream along the ancestral Columbia River's course. Meeting the Columbia estuary and the sea, sometimes with explosive force, these flows cooled in and around the river's course to become today's Columbia River Basalts.

The arc of mountains, including Saddle Mountain and Tillamook Head, created by these flows mark one ancestral course of the Columbia cast in heavy black rock. The results are impressive, including the wonderfully rugged scenery of Ecola State Park's headlands and offshore rocks, as well as peaks up to 3288 feet in the case of Saddle Mountain. So high are these peaks, in fact, that they contain islands of rare vegetation isolated since the last ice age amid mountaintop forests of Pacific silver fir (*Abies amabilis*). The prominent backbone of Clatsop County, this volcanic mountain chain—Saddle Mountain in particular—is a key landmark in all local history and features prominently in oral traditions and spiritual practices of Native peoples to the present day.

Figure 1.1 – A portion of the Cape Disappointment headland in the 19th century, prior to its development. The rugged headlands of this coast, as well as its loftiest peaks, bear the hallmarks of ancient volcanic events. Photo courtesy Washington State Historical Society.

In the eons that followed the formation of the Columbia River Basalts and as tectonic forces lifted the coast upward, the region's rainfall ensured the downcutting of streams through fractured lava rock, leaving behind mountainous terrain visible today. Sediments from the adjacent estuary and shorelines, trapped amid the

volcanic landforms and folded by the continued collision of tectonic plates, created vast lenses of sandstones, siltstones and mudstones. These sedimentary formations often contain fossils of fish, shellfish, and other estuary-dwellers, some long extinct on this coast. Whether volcanic or sedimentary, bedrock is heavily weathered throughout the region. And as a result of mild climate, dense vegetation, and no history of glaciation, soils are deep. Tree roots and flowing water work their way down into mazes of bedrock fissures making it difficult at times to discern where soils end and bedrock begins.

Sediment passing down the Columbia contributes much to the look of the outer coast. Mud, silt, and sand build shifting shoals in the river's mouth, hazards to early navigators that are regularly dredged today. On the ocean beaches, sand-sized particles settle out to form the brilliant, light beige beaches of the outer coast, home to unique shellfish such as razor clams (*Siliqua patula*) and a diversity of durable, drought-tolerant plants, isopods, birds and other beach dwellers. Especially in the last 3000 years, the sands have accumulated, causing beaches and dunes of the outer coast to creep incrementally westward. Geologists have found, for example, that the age of each dune ridge in Clatsop Plains is younger as one progresses from the east (such as Cullaby Lake) to the west (such as Sunset Beach). Dune lakes and marshes are found in abundance in these places, where streams and rivers were partially trapped behind the advancing sand. Likewise, former Native American villages on the dune ridges are successively younger as one moves from east to west, since the residents were compelled to move as sand accumulated and left them isolated from the shore (Connolly 1992; Rankin 1983). The accretion of sands even appears prominently in the oral traditions of the Clatsop, who clearly spent considerable time observing the phenomenon and its effects, and who attributed some portion of the change to Coyote, who shaped many facets of the natural world:

"Coyote was coming. He came to Gôt'a't [near Seaside, Oregon]. There he met a heavy surf. He was afraid that he might be drifted away and went up to the spruce trees. He stayed there a long time. Then he took some sand and threw it upon that surf: "This shall be a prairie and no surf. The future generations shall walk on this prairie." Thus Clatsop became a prairie. The surf became a prairie" (in Boas 1894: 101).

The fundamental cycles of the Columbia-Pacific region are defined by the seasons. In the winter, low-pressure systems centered on the North Pacific send spiraling cyclonic storms, rotating counterclockwise, pounding one after the other into the

Columbia-Pacific region's coast. Strong south winds dominate the coastline from fall into spring, occasionally gusting to hurricane force and tossing surf high along its shoreline, with waves rising to 30 feet or more. Ocean currents pull strongly from south to north in this season, carrying logs and debris from distant places to the south. So potent are these forces that some Native American traditions describe South Wind as one of the world's most potent spiritual beings. The tribes of the Columbia-Pacific region had protocols for making claims to giant redwood logs that were carried from the coasts of northern California and used in fashioning large canoes (Deur and Thomson 2008; Harrington n.d.).

Beaches erode, but Columbia River sediments moving northward each year help to replenish the 28-mile Long Beach Peninsula, one of the longest continuous sand beaches on Earth. Most of the region's heavy precipitation arrives in this season, from around 65 inches per year in the lowlands to 150 inches or more in places where high peaks wring moisture orographically from the storms sweeping onshore. Frosts are relatively uncommon. Snow typically falls only in the higher peaks, though there is historical evidence to suggest that winters were colder and snowfall more abundant in past centuries (Schulz 1990).

In the summer, the scene changes dramatically: high pressure systems settle on the North Pacific, bringing relatively calm weather, gentle surf, and light, north winds. In this season, ocean currents turn southward, with the Columbia sediments helping to build up beaches along the Clatsop County shore. Yet the currents also pull slightly offshore in this season. This creates a hydrological vacuum in waters immediately along the shoreline, a phenomenon that pulls cold, nutrient-rich water from deep in the ocean to its surface in the nearshore zone, a process called upwelling. The nutrients in these waters feed a seasonal burst in plankton and other small organisms that, in turn, support a rich oceanic food chain, attracting large schools of fish, whales, nesting seabirds, and other marine life to feed and breed. When making contact with warm air above, these cold ocean waters can produce impressive fogs—sometimes termed upwelling fogs—that creep onshore many summer days. In addition to increasing humidity and causing modest precipitation, these frequent fogs moderate temperatures so that coastal lowland temperatures can range from the 50s to 60s Fahrenheit in the summer, reflecting the ocean's chill, when temperatures are 10, 20, or even 30 degrees higher a few miles inland.

The dominant vegetation of the region is shaped in many ways by these forces of geology and climate. Standing tall along the outer coast, Sitka spruce (*Picea*

Figure 1.2 – Mature Sitka spruce trees in the Oregon coastal forest. Photo courtesy Oregon State University Archives, Special Collections.

sitchensis) is the dominant forest tree. Members of the Corps of Discovery marveled at the prevalence, and sheer scale, of this tree:

"The hunters who were over the Netull the other day informed us that they measured a pine tree [Sitka spruce] which at the hight of a man's breast was 42 feet in the girth about three feet higher, or as high as a tall man could reach, it was 40 feet in the girth which was about the circumpherence for at least 200 feet without a limb, and that it was very lofty above the commencement of the limbs. from the appearance of other trees of this species of fir and their account of this tree, I think it may be safely estimated at 300 feet. it had every appearance of being perfectly sound" (Meriwether Lewis, March 10, 1806).

Found close to the ocean from northern California to southern Alaska, this tree has found a winning strategy for coastal living. Its stalwart but lightweight wood has allowed stands of Sitka spruce to survive countless winters of violent storms while remaining upright. As discussed in the pages that follow, this would lend the tree national importance in the construction of early airplanes. Broad but shallow roots allow spruces to stay upright (usually) while avoiding the perennial water table not far below the ground's surface. Piercing-sharp needles with porous exteriors capture fog droplets, so that on foggy summer days spruce roots are supplied with constant moisture while other trees go without for weeks or months at a time.

Standing among the spruces, and benefitting from spruces' ability to withstand storms and capture fog, are the western hemlocks (*Tsuga heterophylla*)—not as durable, but uniquely adapted to germinate and grow within the dark, protective cover of the spruce-hemlock forest. In certain well-watered but protected places, stands of western red cedar (*Thuja plicata*) can be found, with reddish wood, often tight-grained and soft compared to other woods, rich in tannins and uniquely resistant to rot. The red cedar is the cornerstone of the Native toolkit—used in everything from houses to canoes to clothing—and shingles made from old cedars are in high demand today for their matchless durability. Wildfires are remarkably rare in the fog belt, making it possible to find cedars (or cedar stumps) in excess of 1000 years in age (e.g., Long and Whitlock 2002). Only in the interior hills and mountains of the region, where summer fogs are rare and fires more common, does one find the iconic Douglas fir (*Pseudotsuga menziesii)*, which has been such a mainstay of the modern timber industry. Immediately along the shoreline one often finds a tree more widespread in the arid interior Northwest, shore or lodgepole pine (*Pinus contorta* var. *contorta*), a salt-tolerant tree that can survive long, dry summers in the draughty, sandy soils of the beachfront in a way that hints at its arid-country kinship.

The forests of this region are among the most productive in the temperate zones of the world, if measured in total biomass. The region also boasts a diversity of lichens, insects, and fungi so vast that it is still being catalogued today. Within forests well watered and dense, understory plants tend to be tolerant of shade, saturation, and highly acidic soils. Because windborne seed dispersal is difficult in this environment, many species grow berries, with their seeds dispersed through the forest in the digestive tracts of myriad animals—humans sometimes among them, enriching the diets of everyone concerned.

Native people of the region traditionally employed fire at the margins of these imposing forests. Fire produced needed clearings for settlements and camps, opened vistas, fostered the growth of culturally preferred plants such as camas or bracken that colonized such clearings, and produced predictably rich hunting grounds (Deur 1999). Early Euro-American settlers also struggled to find clearings in the forest, often occupying areas formerly cleared by Native Americans before embarking on their own efforts to push back the forest margins and build new settlements. Decomposition in this mild, moist climate is rapid, and historical structures disappear from the landscape with astonishing speed. Moreover, under a constant barrage of rainfall and conifer litter, the soils are generally quite acidic, making agriculture a more challenging prospect than the region's rich vegetation might suggest.

Heavy precipitation runoff feeds a number of smaller rivers and streams in addition to the formidable Columbia. A few produce estuaries, where fresh water meets the sea. Some of these estuaries are river dominated, admitting large rivers and little seawater, and as a result, especially in the rainy winters, have low salinity by the standards of tidal environments. The Columbia and Necanicum estuaries are excellent examples. Others estuaries are ocean-dominated and relatively saline, admitting only small rivers and exchanging vast quantities of seawater with each tide. Within the Pacific Northwest, Willapa Bay is widely known as an estuary of this type, providing a home to unique sea life such as the native Olympia oyster (*Ostrea conchaphila*) and a number of flatfish.

These rivers and streams are home to a great diversity of fish. All five species of Pacific salmon return from the sea each year to spawn in the Columbia and in other waterways of the region, while sturgeon (*Acipinser* spp.), eulachon (*Thaleichthys pacificus* and possibly the origin of the name Oregon), and other riverine and anadromous fish abound (Byram and Lewis 2001). Most famously, the Columbia and other rivers of the region are home to the Chinook or king salmon (*Oncorhynchus tshawytscha*), which defined Native traditional fishery and commercial fisheries

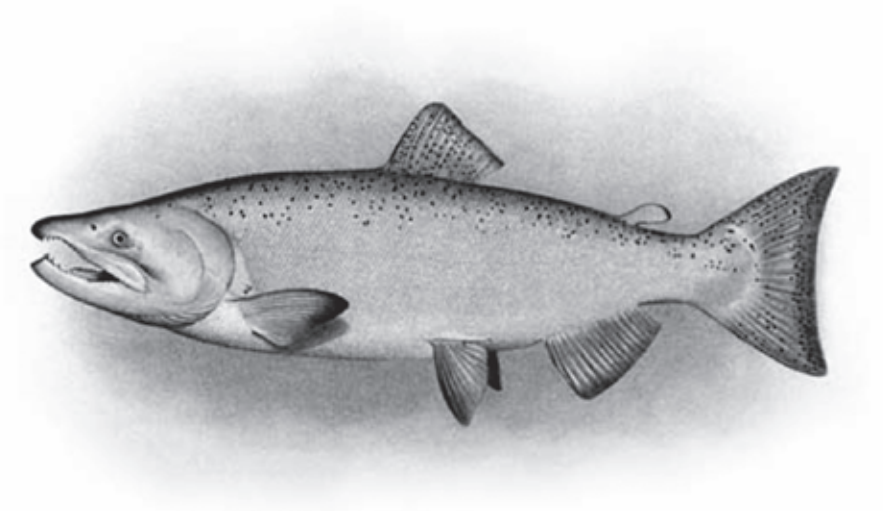


Figure 1.3 – The Chinook salmon (*Oncorhynchus tshawytscha*) – the iconic fish of the Columbia River, and the cornerstone of the 19th century fishing industry, named for the Chinook people of the Lower Columbia River. From National Oceanic and Atmospheric Administration, Alaska Fisheries Science Center.

alike, especially prior to 20th-century construction of Columbia River dams. In the smaller waterways, coastal Coho salmon, cutthroat trout and steelhead thrive, living their freshwater life phases in shallow, marshy streams, often in and around ponds and backwaters that form behind beaver dams. As they swim to and from the sea, these fish have historically fed in extensive kelp forests, undulating, submerged stands of the giant bull-whip kelp (*Nereocystis luetkeana*) that are home to several species of rockfish, with scavengers such as Dungeness crab (*Cancer magister*) lurking below. Sea otters, now extirpated, once frolicked in these kelp beds and sustained them by eating the sea urchins that graze on juvenile kelp. Their thick fur, much prized by Native Americans and early European traders ("*the riches[t] and I think the most delicious fur in the world*," according to Meriwether Lewis), which allowed the animals to survive in cold waters without the aid of thick blubber, played no small role in prompting Euro-American exploration and occupation of this coast (Lewis, February 23, 1806, in Moulton 1990: 339).

Much of the landscape has changed since the arrival of the Corps of Discovery, as will be discussed in the pages that follow. Still, the environmental fundamentals of the Columbia-Pacific region have helped to define the limits and opportunities of life on this coast from the beginnings of human time to today.

Figure 1.4 - A sea otter (*Enhydra lutris*) mother with small pup. The sea otter was widespread in the region, being hunted by Native American communities and prompting the earliest European exploration and settlement in the region. Photo by Michael L. Baird, bairdphotos.com, made available courtesy Wikimedia Commons.

Figure 2.1 – A map of the tribes of the lower Columbia River, from the Cascade Range to the sea, from the first published edition of the Lewis and Clark journals. From P. Allen, N. Biddle, W. Clark and M. Lewis 1815, *Map of Lewis and Clark's Track across the Western Portion of North America*. London: Longman, Hurst, Rees, Orne & Brown. Image courtesy Wikimedia Commons.

2 The People of the Columbia-Pacific Region at the Time of European Contact

Descending into the tidal lower reaches of the Columbia River, members of the Corps of Discovery recognized they were entering a distinctive cultural landscape. Along the estuary of the mighty river, they found themselves traveling through a densely settled land, home to peoples, cultures and polities that were unlike anything they did seen on their journey across North America. The Columbia estuary and the adjacent coastline were exceptional, as they must have sensed, with one of the largest and densest indigenous populations in North America north of the urban civilizations of Mexico (Kroeber 1953; Hodge 1907). Traveling along the shores of the Columbia estuary on the eve of European contact, it would have appeared to a visitor that this was a place of rare resource abundance and wealth, and surprisingly urban by Native North American standards. Almost every habitable portion of the shoreline was used by Native communities, for such purposes as villages, resource camps, fishing stations, hunting grounds, plant gathering areas, burial sites, spiritual or healing sites, and the like. Likewise, on the ocean coast, major settlements sat wherever freshwater rivers and streams entered the sea. The Corps of Discovery did not encounter a wilderness on the lower Columbia, then, but a homeland to thousands of people and one of the most economically and culturally vibrant places in the Northwest.

The tribes of the Columbia-Pacific region were of vital importance to the Native and non-Native history of the Pacific Northwest (and some maintain critical, if more symbolically important, roles today). The Chinook proper, or Lower Chinook, traditionally occupied the entire northern shoreline of the Columbia River, from Grays Bay to the sea. Their claims also extended over the greater proportion of Willapa Bay, the Willapa Hills, and the entirety of the Long Beach Peninsula. At almost every place within this homeland where river meets sea, the Chinook had sprawling waterfront villages of cedar plank longhouses. On Willapa Bay, villages sat at the mouths of the Palix, Nemah, Bear, and Naselle Rivers. These were ideal fishing sites and convenient for accessing the diverse resources of the bay. There

were also villages on the Long Beach Peninsula, in grassy clearings near Nahcotta and Oysterville, prime sites for shellfish harvesting and other tasks tied to western Willapa Bay and the ocean beaches beyond. In their northern territories, beyond Bay Center and including the northern shores of Willapa Bay, Chinook territory and society was interconnected with that of Salish-speaking peoples, Lower Chehalis bands including those called the Willapa, for whom the bay is named. Chinooks sometimes co-occupied villages and shared resource sites with these people, whose language was quite different but whose culture and values were much the same. It was, however, along the Columbia River, especially along the sweeping shore of Baker Bay from Megler to Cape Disappointment, that the vast and powerful Chinook community was concentrated. Here they were most typically encountered by visitors, especially in the spring and summer when people moved back to the riverfront from Willapa Bay and other interior winter communities. Here there were several independent settlements, on almost every habitable waterfront patch of ground, large villages situated at places later called Fort Canby, Ilwaco, Chinook, McGowan, and other names. Between them, and in the uplands adjacent, sat an almost continuous constellation of traditional fishing stations, plant gathering areas, burial sites, and other places of cultural importance. Together, these Baker Bay villages formed a single cultural and social unit—in some respects, the Chinook core—and represented one of the great cultural, social, and economic powerhouses of the contact-period Northwest (Ellis in press; Silverstein 1990; Ray 1938; Curtis 1911; Boas 1894).

To the south of the Columbia, from the vicinity of Tongue Point to the sea, were the Clatsop. Closely related in language and culture to their Chinook kin to the north, the Clatsop occupied much of the coastline in the Oregon county now bearing their name. While apparently somewhat smaller in number than the Chinook across the river, they also occupied a long east–west string of larger villages lining the Columbia estuary's south shore, from the vicinity of Fort Clatsop to Point Adams (today's Fort Stevens). At the time of European contact, Clatsop villages sat on the mouth of the Lewis and Clark River, Youngs River, and Skipanon Creek, as well as in modern Hammond, Fort Stevens, and places in between. As on the northern side of the river, the spaces between and adjacent to these villages abounded in resource camps, fishing stations, hunting grounds, burial sites, and ceremonial spaces, all the things needed to sustain such large and settled communities. A smaller, secondary hub of settlement centered on the Necanicum estuary in modern-day Seaside and Gearhart. As on the northern side of the river, the Clatsops from the Columbia River villages often retired to the Seaside villages and other smaller settlements for the winter months. And, as the Chinooks were connected to their Salish-speaking

neighbors to their north, so the southern Clatsops shared villages and resource sites with the Salish-speaking northern Tillamook. Finally, as with the Chinook villages across the river, the Columbia estuary villages of the Clatsop—occupied most densely in the spring and summer—functioned as a social, cultural, and economic unit in many respects and were a powerful center of trade and ceremony in the contact-period Northwest (Ellis 2013; Silverstein 1990; Taylor 1953; Ray 1938; Curtis 1911, 1913; Boas 1894).

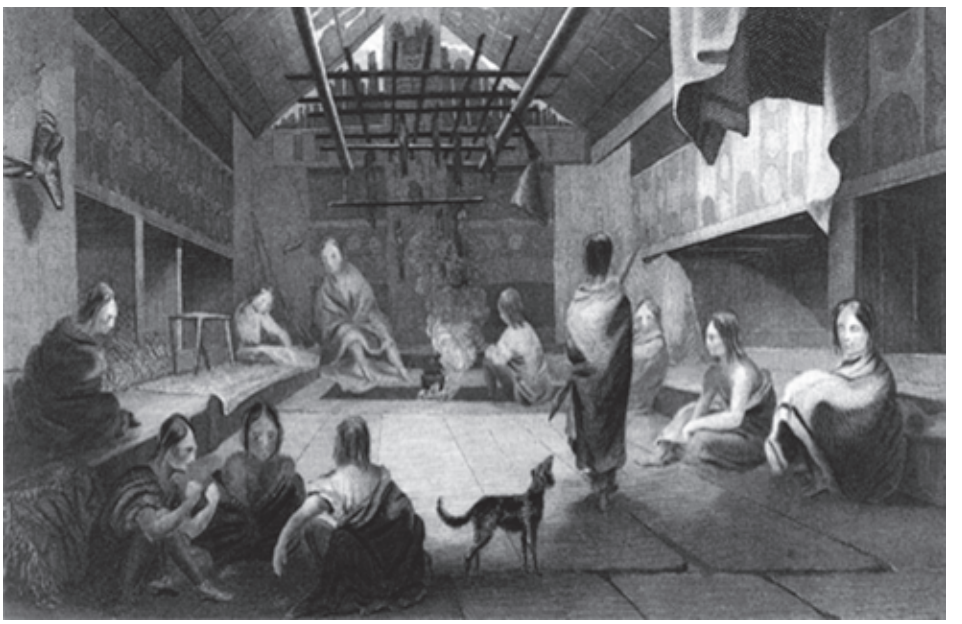


Figure 2.2 - The interior of a Chinookan longhouse, as seen by the U.S. Exploring Expedition, led by Charles Wilkes, in the 1840s and drawn by A.T. Agate. From Wilkes (1845). Image courtesy Wikimedia Commons.

Southward were the Nehalem (or northern) Tillamook, Salish-speaking peoples who differed in language, if not necessarily in culture, from the Chinook and Clatsop to the north. While the exact delineation of territories is problematic, the Nehalem Tillamook are typically associated with the area from Tillamook Head south, with major population centers concentrated on Nehalem and Tillamook Bays. Yet Nehalems also lived alongside Clatsops in what were multi-tribal communities at Seaside and apparently Cannon Beach, and the contact-period residents of Ecola State Park also appear to have been northern or "Nehalem" Tillamook (Boas 1894; Jacobs n.d.; Harrington n.d.).

Other ethnolinguistic communities occupied interior places. To the east of the Chinook were the Wahkiakum Cathlamet, whose territories extended upstream from Grays Bay to near Cathlamet, Washington, with large villages situated on the mouths of each tributary river along this reach. Meanwhile, Cathlamet proper occupied the upper Columbia estuary along its south bank from roughly Tongue Point to the vicinity of modern Rainier, Oregon. All of these groups spoke Chinookan languages, closely related to Chinook and Clatsop. Meanwhile, in the interior mountains of Pacific and Clatsop Counties lived two relatively small and culturally distinct Athabaskan groups, the Kwalhioqua and Clatskanie, respectively. Linguistically related to the Athabaskans of interior Alaska and the Navajo, these populations were small, relatively distinctive culturally (to the extent that this can be inferred from limited evidence), and ceased to exist as independent groups by the early 20th century (Ellis 2013; Silverstein 1990; Suphan 1974; Spier 1936).

The tribes of the Columbia–Pacific region shared rich traditions of artistic, technological, and ceremonial practice that were common to each of these communities. Villages consisted of a number of longhouses, usually constructed of hewed cedar planks, each housing one or more families. While house sizes varied, large houses could comfortably accommodate tens of residents; some of the larger villages had 10, 20, or (in the case of Middle Village and perhaps the Point Adams villages prior to contact) more than 30 of these houses at certain times. Cedar canoes, often huge and custom designed for travel in rough waters, were carved from individual trees, and canoe travel linked these villages along the rivers, bays, and sea.

Both at these villages and from a constellation of seasonal camps, these peoples harvested every imaginable fish, mammal, and plant for subsistence and cultural purposes. Chinook salmon, coho salmon, steelhead, sturgeon, eulachon, and many other fish were caught in season; mussels, oysters, crabs, razor clams, and myriad other shellfish were sought in suitable settings as well. A diverse range of plant foods was also key to the diet: berries such as salal, various huckleberries, and salmonberry; roots such as silverweed, wild onion, wapato, and camas; fresh edible shoots of salmonberry, thimbleberry, and cow parsnip. Whatever was desired but not locally abundant could often be traded from nearby villages. Moreover, though ethnographic evidence of the practice is scarce, Native peoples sometimes burned meadows in such places as Clatsop Plains to facilitate the growth of culturally important plants like camas and bracken fern, and to produce predictable hunting grounds. (Where modern disturbances have been few, the vegetation in certain units

of Lewis and Clark National Historical Park bears hints of this history of traditional vegetation management; further investigation would be needed to confirm the origins of such patterns.) Resources and land were claimed by particular villages and village leaders and were in some sense owned. Each generation bore a certain responsibility to maintain balanced relationships with prey species through proscriptions on overharvest and respectful ceremonial interventions, such as the first salmon ceremony (Deur 1999; Boyd and Hajda 1987).

Figure 2.3 - "Lower Columbia" – a 1910 photo by Edward Curtis, of Chinookan canoeists on Columbia River tidewater. Digital image CP08031, Northwestern University Library, *Edward S. Curtis's "The North American Indian*.

The Chinook and Clatsop, in particular, sat at the hub of a vast trading empire. This involved the exchange of goods up and down the coast, as well as along the Columbia River from the Northwestern interior. Prized dentalia, the long, tooth-like shell money of the Pacific Northwest, was carried by canoe to the major Chinook and Clatsop villages by Nuu-chah-nulth (or Nootka) traders who gathered the shell in the inlets of their homelands on the west coast of today's Vancouver Island. Slaves, raided from communities as far away as northern California by middlemen such as the Klamath, were sold by the Chinook and Clatsop to tribes visiting from elsewhere along the coast. A type of dried, pounded salmon— a local specialty product—that was lightweight and easy to transport was such a popular trade item for the Clatsop that they were named for it. Tlatcep means "those with pounded salmon." Furs,

canoes, tools, foods, and any number of other goods passed through these villages as they were exchanged between tribes.

A casual perusal of ethnographic and early historical accounts reveals an impressive list of tribes converging at Chinook and Clatsop villages—Middle Village and the Fort Stevens villages, in particular. They met there to trade, but also to socialize, gamble, meet potential spouses, participate in ceremonial events, race, and sing: the Kwakwaka'wakw (Kwakiutl) from the central British Columbia Coast; the Makah, Quilleute, and Quinault of the northern Washington coast; the Yaquina, Alsea, and Tillamook from the Oregon coast; and many, many others visited for these reasons. They also came to fish. There are many accounts of visiting tribes being allowed to fish alongside the Chinook, especially the Chinook of Baker Bay, at once sharing some of the Chinook's prodigious wealth, but also building and reinforcing relationships with anetwork of tribes that insured the Chinook's primacy in regional economic and social life. Especially among the high-ranking individuals of Columbia-Pacific tribes, a good marriage was a marriage with someone from another tribe, building intertribal social relationships that supported, and were supported by, economic relationships, and that insured deep ties with many of these visitors and possible roots in the villages of the lower Columbia. Multi-lingual "polyglot" communities were the norm, contributing to the development of a trade language, *Chinuk wawa* or Chinook Jargon, which the people of the lower river honed with time to bridge linguistic divides (Lang 2008; Hajda 1984).

While settlement was especially focused on the shorelines, the interior portions of northwestern Oregon and southwestern Washington are also of traditional importance to Native peoples. The highest mountainous areas, occupied by meadows and plant communities rare in the deep forests below, were often visited for specialized hunting and plant gathering. Places such as Saddle Mountain and Onion Peak in Oregon and the Bald Ridge and Gray's River Divide complexes in Washington served as places to hunt elk and gather onions (especially *Allium cernuum*), bear grass (*Xerophyllum tenax*), and other plants uncommon in the lowlands. Hunting was popular in these upland areas, along established elk trails or in meadows, and hunters sometimes took advantage of the rough terrain to chase elk, buffalo-jump style, off of precipices to be dispatched below.[1] These high-elevation places, far from the bustle of human settlements, were often of elevated spiritual significance as well. Most Columbia-Pacific tribes' oral traditions traced their origins to events on Saddle Mountain, where ancestral beings emerge from the eggs of Thunderbird, each descending to a particular watershed to found the region's tribes. Spirit questing often involved travel to places of such elevated importance:

Saddle Mountain, critically, but also places such as the higher elevations of Tillamook Head in today's Ecola State Park.[2]

As the whole of the Columbia-Pacific region was occupied by Native American people in some manner and the densest centers of settlement hugged the shoreline, it is clear that every sub-unit of the Lewis and Clark National and State Historical Parks has some history of Native American use and occupation. A portion of this history can be reconstructed from the available written record, though much of it is still elusive. Contemporary Native American knowledge may yet help to fill gaps in this record, which is summarized in cursory form here.

The options for settlement were limited at Cape Disappointment, in part because of a limited number of fresh water sources.[3] At what later became Fort Canby on the protected eastern slopes of Cape Disappointment, sat the village of Walmlm (or Walumlum, meaning "rotting wood"), which was described as a village of approximately 10 multi-family longhouses during the time of European contact. In addition to being a residential village, this was a fishing station of importance for salmon and other species that occupied the boundaries between ocean and river. As Ray's interviewees noted, "fishing was excellent here at extreme low tide" (Ray 1938: 39). There is evidence to suggest extensive hunting as well, both of marine and terrestrial mammals, such as seals and deer. The village was occupied by Chinooks but was often visited by people from other tribes, who were sometimes granted fishing access by their resource-rich Chinook hosts. The village served as the westernmost extension of the large settlement complex occupying the shoreline of Baker Bay. Adjacent portions of Cape Disappointment appear to have had diverse functions, being used for hunting, plant gathering, lookouts, and spiritual purposes linked to life in the villages below (Ray 1938; Boas 1894).

At today's Station Camp sat the sprawling Chinook Middle Village (Qiqaiaqilxam, meaning "middle town," apparently referencing its central location among the settlements of the north bank), perhaps the single most powerful center of social, political and economic influence in the Chinook lands and indeed along the entire lower Columbia. Some sources suggest well over 30 longhouses lining the waterfront at this place, sometimes called Chinook Point on early navigator's maps until that term was reapplied to the Fort Columbia area in the 19th century.[4] With a commanding view up, down, and across the river, this village served as a center of trading activity and social and ceremonial life to the Chinook. It was also visited by tribes from throughout the region. A fishing site of great importance, salmon could be netted here as they began their ascent up the Columbia. During the times of

European exploration andfur trade, discussed in more detail in later sections, Middle Village played a distinctly prominent role. Adjacent landmarks, such as the modern site of Fort Columbia, were reportedly clearings, used extensively by residents of the adjacent villages as a lookout and trail corridor, but also for ceremonial and utilitarian purposes related to life in the village complex situated below. It has been reported that the Chinook "*called the point [Fort Columbia, today's Chinook Point] 'No's-to-ils' and the hill [now called Scarborough Hill] behind the point 'No'si-misp'*" (Weathers 1989: 24, 31; Wilson et al. 2009).[5]

At Point Adams, on the banks of the Columbia near the site of the oldest military fortifications, was the largest Clatsop village, Niak'ilaki (meaning "pounded salmon place"). The location was also called Tlatcep (or Clatsop) village. This village was of singular importance to the Clatsop. As Ray (1938: 39) noted, "it was one, perhaps the largest, of a number of [Clatsop] villages in the vicinity. The early writers speak of it, however, almost to the exclusion of all others." Due in no small part to this village's prominence, the entire Clatsop people were known by this village-specific moniker to arriving Europeans. Various accounts suggest the village had between eight and ten large longhouses at the time of European contact, and a population in the hundreds. These sources also suggest that Niak'ilaki served as a center of fishing and other forms of resource procurement. Salmon fishing was especially important, as was the production of dried pulverized salmon that was among this village's principal exports, and the basis for its name. As at Middle Village on the opposite bank of the river, this cornerstone Clatsop village was also a major trading center, hosting people from throughout the region who stayed in camps on the village's margin for days or weeks as they participated in economic,social, and ceremonial activities. A short distance upstream were the large Konapee (named for a chief by that name) and Naiaaqsta (meaning "at the head") villages situated between Niak'ilaki and the center of modern Hammond, close to the northeastern boundary of the modern park. Konapee village was said to have been massive at one time, with 40 or more longhouses, but was in rapid decline by the time of direct European contact (Ellis 2013; Deur 2008; Ray 1938; Boas 1894; Jacobs n.d.).

Close to Fort Clatsop, at the mouth of the Lewis and Clark River, was Ni'tl, or Netul, once a "very large village" that collapsed early in the history of European exploration (Curtis 1911: 183). The Fort Clatsop site itself is widely agreed to have been used by Clatsops—a use suggested by the large clearing occupied by the Corps of Discovery—though its use is debated and was arguably in flux at the time of contact. This site is variously reported as the location of a small settlement. A burial site, linked to Netul or the local village, was reported a very short distance of the fort

site, denoted by some sources as "Memaloose Point." By the time of Lewis and Clark's arrival, some part of the site was used seasonally as a resource processing area for fish, game, and other products. The Fort Clatsop site, or lands along the shoreline very close by, are said to be occupied by "two houses of Clatsops" on December 14, 1813, when traders from the North West Company came ashore there:

"At noon we entered the river and proceeded up to Fort Clatsop. There we found two houses of Clatsops, busily employed making mats and straw hats; they had an extraordinary Lewis and Clark in 1805–06, which are in total ruins, the wood having been cut down and

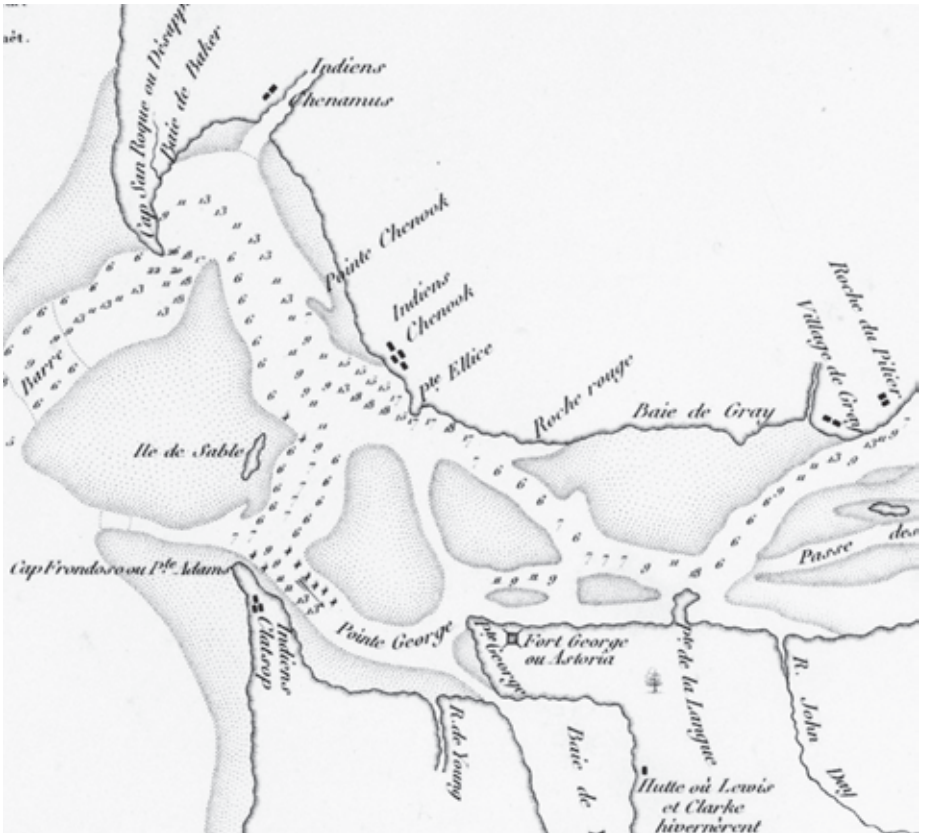


Figure 2.4 – A detail of one of the earliest maps of the mouth of the Columbia, dating from the 1840–42 explorations of French explorer, Eugene Duflot de Mofras. Clearly visible are the two large villages at today's Station Camp ("*Indiens Chenook*") and Fort Stevens ("*Indiens Clatsop*"). In addition to other Chinook villages, de Mofras included the site of Fort George and a somewhat misplaced reference to Fort Clatsop. From Duflot de Mofras, 1844. *Carte du Rio Colombia Depuis don Embouchure Jusqu' au Fort Vancouver....* Paris: Arthus Bertrand.

number of children…We walked up to see the old American winter quarters of Captains destroyed by the Indians…Having examined this spot, we returned to our horses, which are left in the care of the Indians; there being no grass near the fort, we allow them to graze on the salt marsh along the bay and river" (Henry 1897:771–72).

Writing in 1853, Preston Gillette appeared to be referencing this site, or one very close to it, when he noted, *"The small cleared spot at the landing was done principally by Indians. It seems to have been a village or camping place occupied by them from time immemorial"* (Gillette n.d.).

To the south, in what is today Ecola State Park, there were at least two settlements including the Ecola Point and Indian Beach villages. (A third settlement, situated between these two, is suggested by archaeological materials at Bald Point, now largely eroded away, though there are few ethnographic or historical references to a village at this place.) Oral history shared by Nehalem Tillamook elders in the 1930s suggests that the Ecola Point village (apparently called Dehontatch, perhaps referencing "baskets") was a small community perched on the Ecola Point headland. They specialized in hunting seals, sea lions, and other marine mammals in the offshore rocks below, "the sea lion rocks . . . where the olden Indians long ago used to go to spear the sea lions" (Harrington n.d.: 381). Elk hunting and shellfish gathering were also common pursuits. The village apparently consisted of many small houses, though the exact number cannot be ascertained due to landslides and erosion that have almost entirely washed away the site. Hand-holds were carved into the cliff face leading down to the beach below, though these too are no longer visible due to erosion.

In a narrow gap at the southern base of Tillamook Head (Neaseu'su), eroded remnants of the Indian Beach village sit largely below the modern park's parking lot, its integrity much compromised by repeated impacts by road and, later, parking lot development. Little ethnographic information was reported for this site, which was largely abandoned by the time of Lewis and Clark's arrival. It is clear, however, that elk and marine mammal hunting and shellfish gathering were important to its inhabitants. At least one petroglyph, no longer visible, was reported on the adjacent beach (Deur 2008; Minor 1991; Harrington n.d.; Jacobs n.d.; Ross 1976). Near this village, on the slopes of Tillamook Head, were places used to gather white clay for purposes both ceremonial and ornamental. As Clark noted on January 7, 1806, while crossing from Seaside to Indian Beach, *"In the face this tremendeous precipice immediately below us, there is a Strater of white earth (which my guide informed me) the neighbouring indians use to paint themselves"* (in Moulton 1990).

The other sub-units of Lewis and Clark National Historical Park (LEWI), while not necessarily occupying major village sites, sat very close to such villages and were part of those areas visited and used frequently by villagers living nearby. A short distance north of Sunset Beach was a large Clatsop village, Niak'iwanqi (meaning "where there is killing"), which sat where the former Neawanna Creek estuary pierced the dunes on its way to the sea. This site is now buried below the sands in what is today the Camp Rilea National Guard base, the Neawanna having turned its course southward in the 19th century. A short distance from the Salt Cairn site in Seaside, Oregon, was Nakut'at village, a sizeable community especially supported by salmon fishing, berry picking, and the hunting of land and marine mammals, whose Clatsop and Nehalem Tillamook residents befriended the Corps of Discovery (Lyman 1900). Other villages sat a short distance north and south. On the north shore of the Columbia, not far west of the Dismal Nitch wayside, was Qailciak, apparently a small fishing community on the far eastern end of the Baker Bay village complex.

Figure 2.5 – Clatsop Chief Tostom, a nephew of Chief Coboway, who hosted Lewis and Clark in the winter of 1805-06. A signatory of the unratified 1851 Tansy Point treaty, which promised the Clatsop a reservation encompassing Point Adams, Tostom was the last leader to oversee life at the prominent village at that Point until being asked to vacate by Army Engineers beginning construction of Fort Stevens in the 1860s. His descendants and those of his immediate family, still reside on both sides of the Columbia. Photo courtesy National Park Service, Lewis and Clark National and State Historical Parks.

Linking these villages were trails. True, waterways were the principal sources of food and water, as well as the highways of the region's Native people, allowing for efficient transportation by canoe. Yet trails linked most major villages, allowing for travel by foot, especially when inclement weather brought wind and waves to the coast. A trail is reported to have linked the Netul village near Fort Clatsop with Niak'iwanqi, roughly approximating (but slightly north of) today's Fort-to-Sea trail route. In turn, this trail linked those villages to the villages of Seaside and points south. Trails linking the Seaside villages, the villages of Ecola State Park, and the village at the mouth of Ecola Creek (perhaps Necost) in Cannon Beach passed over the top of Tillamook Head, roughly approximating the present trail route managed today by Oregon State Parks (Harrington n.d.). Members of the Corps of Discovery would make use of both trails in the course of their stay in the winter of 1805–06, as they traveled to and from the salt cairn as well as the Necost village at the mouth of Ecola Creek, seeking to barter for whale meat and blubber in January 1806.

Other trails lined the shores of the Columbia. These linked the settlements on the northern and southern sides of the river, respectively, while the Chinook forded between the Columbia at Baker Bay and the southernmost navigable reaches of Willapa Bay on a trail linking the two. A major Chinook trail also skirted the eastern edge of Cape Disappointment from the ocean beach to the waterfront at Ilwaco – a riverfront terminus reported to be called *"no skwalikul,"* or "where the trail comes out" in Chinook (Kytr n.d.b). In many places, and especially along the ocean, the beach served as a trail of importance. Networks of trails also linked sites in the interior—the upper Naselle to Deep River, the upper Youngs River to the Nehalem, and so on—ensuring that most major communities of the region could be reached by land, if not by water (Ray 1938; Dicken 1978).

Various lines of evidence make clear that the population encountered by Lewis and Clark, though large and still culturally robust, was only a portion of what may have existed a few generations before. Diseases such as smallpox seem to have already found their way to the Columbia-Pacific well before their arrival, and members of the Corps of Discovery remarked on the number of Native people with pock-scarred faces. These epidemics apparently arrived through direct contact with ships on the coast, but also through tribal trade networks linking the Northwest to the American interior, from the Spanish-controlled Southwest, the northern Great Plains, and beyond. Such diseases brought a two-stage shock to Native societies, killing many

people during initial exposure, but also causing infertility among a number of survivors, so that the demographic effects of single epidemics echoed across generations (Boyd 1999). Moreover, the monumental subduction zone earthquake and tsunami that struck during the night in January 1700 is likely to have caused high mortality in some villages, a point suggested by tribal oral traditions up and down the coast (Losey 2007). The populations encountered by Lewis and Clark were therefore survivors of repeated disasters, who had maintained the integrity of their communities, economies, and culture in spite of repeated devastating shocks.

This had several specific consequences prior to the Corps of Discovery's visit, and certainly for decades thereafter (as will be discussed later in this document, in reference to the fur trade era). As the people of the region experienced episodic contractions in their population, survivors often regrouped with one another in certain villages. People from multiple villages came together in one place, perhaps contributing to such phenomena as Chinookan and Salishan people living in shared villages. Meanwhile, peripheral or minor villages were often largely abandoned, becoming temporary resource encampments. Some of these villages had been year-round villages in generations past. In cases where there were no survivors remaining in a village, these places were often given over to the dead, the grounds or even the houses being filled with the remains of former inhabitants (Jacobs n.d.). This appears to have been the fate of the village at Indian Beach, within today's Ecola State Park. By the time of Lewis and Clark's arrival, this village was abandoned and filled with burial canoes. As William Clark noted on January 8, 1806:

"I observed large Canoes of the neetest kind on the ground Some of which appeared nearly decayed others quit sound, I examoned those Canoes and found they were the repository of the dead" (in Moulton 1990).

Though this phenomenon is reported in ethnographic materials relating to the Columbia-Pacific region, the Indian Beach village was unique in being the focus of such a detailed written account, and was a harbinger of horrific events yet to come.[6]

3 The Unknown Coast

European Exploration and the Maritime Fur Trade in the Columbia-Pacific Region

Though the Columbia-Pacific region was a hub of Native American history and culture in the Pacific Northwest, this place was decidedly peripheral to peoples from more distant corners of the globe. Spain, England, France and other European nations had launched their exploration and occupation of the Americas on the far side of the continent some three centuries prior to Lewis and Clark, but made slow progress to these far shores. Even by the beginning of the 18th century when much of the world had been mapped, the Northwest coast of North America remained *terra incognita,* an unknown land, to the peoples of Europe. Prior to the explorations of such figures as Bruno de Heceta and Captain James Cook, its geography was wrapped in mystery and speculation. The Northwest remained one of the few blank spaces on world maps. Yet national ambitions and growing markets for the luxuriant fur of the sea otter would bring a wave of foreign explorers and traders to the region—English, Americans, Spanish, Russians and others—transforming the region profoundly and irrevocably (Hayes 1999; Vaughan 1982; Pethick 1976; Wagner 1937).

A few outsiders did visit the Columbia-Pacific region prior to the period of exploration outlined here. Tantalizing accounts speculate on the travels of Sir Francis Drake and Juan de Fuca, who may have plied the coast in the late 1500s. Tribal oral traditions also hint of visitation by Asian explorers, and various lines of evidence suggest wrecks by Manila galleons and other ships on the coast long before Lewis and Clark's arrival (Ray Gardiner pers. comm. 2012; Deur and Thompson n.d.). Asian porcelains are sometimes encountered archaeologically, some attributed to the Spanish, but others attributed to Asian ships that drifted crewless in currents from far across the Pacific (Lally 2008). Still, it was the European exploration of the 18th and early 19th centuries that triggered the colonial reoccupation of the Northwest and the dramatic transformation of its landscape. Such developments as the Lewis and Clark Expedition, the founding of Astoria, and all that followed are rooted somewhat in this early maritime history.

Though the Columbia-Pacific shoreline was unknown and arguably unimagined to the peoples of Europe—a conspicuous blank spot on maps of the known world in the mid-18th century, as stated previously, the potentials offered by the North Pacific were of keen interest to that continent's expanding empires. Two vast empires had slowly advanced on the North Pacific from opposite directions: the Russian Empire, which had been creeping eastward across Eurasia, and the Spanish Empire, with its sprawling holdings in the Americas from Mexico to the distant southern fringes of South America.

Figure 3.1 - Europe's knowledge of the world's geography, as it existed circa 1689. The Northwest coast of North American remained a conspicuous gap in the known world. From Gerard Schagen, *Nova totius terrarum orbis tabula Amstelodami*, an Amsterdam world mapping project of the late 1600s. Image courtesy Wikimedia Commons.

While different in many respects, both empires were astonishingly vast and expansionist, ploddingly autocratic, and increasingly overextended, especially on their most remote Pacific Ocean frontiers. In the early 18th century, both began to

converge on the North Pacific, claiming this region as their own. Sitting roughly 2000 miles from the outer reaches of both European domains, the Native peoples of the Columbia-Pacific region sat roughly equidistant between two global empires. And both were advancing toward the region, from the northwest and the southeast.

Though Spanish colonial forces had found their way to the Pacific coast of Mexico by the 1500s, they made relatively little progress northward in the years that followed. Their early encounters with the Pacific Northwest coast were brief, fleeting, and poorly documented. They seem almost mythical in the retelling. Spanish colonial claims to the Northwest coast relied heavily on accounts of a Greek sailor, Ioánnis Fokás, or Juan de Fuca, who sailed under the Spanish flag in 1592. Details were thin, but his journals suggested de Fuca had entered a waterway somewhere on today's Pacific Northwest coast. This waterway, sometimes called the "Straits of Anian," was described as a possible Northwest Passage to the Atlantic coast or other interior waters. While some suggest this was the Strait of Juan de Fuca between Washington State and Vancouver Island, others doubt there was any real geographical basis for de Fuca's Northwest Passage. But the allure of a short, fast passage between the Atlantic and the markets of Asia tantalized generations of explorers. The accounts of de Fuca were known to the Spanish explorer Sebastián Vizcaíno, who led an expedition up the southern California coast in 1602. One of the expedition's ships, the *Tres Reyes* under the command of Martin d'Aguilar, separated from the rest and apparently ventured as far north as present-day Oregon – though probably not as far north as the Columbia River – though probably not as far north as he Columbia River. Returning from this detour, d'Aguilar reported a major river near the 42nd parallel. On the basis of this account, European maps began to depict a "River of the West," sometimes alongside and sometimes as a portal to the mythical "Straits of Anian" and the Northwest Passage beyond (Pethick 1976).

In spite of these tantalizing glimpses of the coast, there were few major Spanish expeditions northward in the century and a half that followed. Those few sea voyages that extended north of southern California commonly produced only scurvy, supply shortages and few detailed findings. The Spanish Empire was still eager to claim the entire west coast of North America as Spanish territory, based in part on the *Inter caetera,* a decree made by Pope Alexander VI that gave the New World to Spain, signed in 1493 only two months after Christopher Columbus' return from his first voyage. Yet for roughly two centuries, the Spanish had been largely content to establish missions on its northern frontier in southern and central California and to leave the stormy, forbidding coast beyond Alta California as an unexplored Spanish possession. There were no reports of gold there, nor were there ample cultivable

lands by the standards of Mediterranean agriculturalists. Little incentive to extend the colonial reach existed. For more than two centuries, Spanish maps showed de Fuca and d'Aguilar's two reported waterways as the only known geography of the region (Cook 1973).

Over the course of the 18th century, however, European interests in the North Pacific changed. Within a few decades, the outlook transitioned from a protracted period of distant, ambiguous speculation to a mad scramble undertaken to assert national interests and build commercial empires. Improvements in navigation and seamanship, especially involving sailing over huge distances, revolutionized sea travel and effectively placed the North Pacific within sailing range of several national entities, the British in particular. And especially among the British, French, Spanish and Russians, the goals of exploration were intertwined with those of the European Enlightenment. Casting aside the lingering medieval torpor of European scholarship and the weight of religious orthodoxy, the Enlightenment movement prized evidence and data collection as the foundation of knowledge. Furthermore, the Enlightenment married the spirit of scientific discovery sweeping 18th-century Europe with national dreams of empire-building, eventually inspiring Thomas Jefferson and shaping his decision to launch the Corps of Discovery to western North America. Data collection was key to geographical understanding, and no empire could expand or be sustained without it. From almost every major European empire, then, explorers were sent to the far corners of the Earth—especially those without strong competing European claims—to map the landscape, but also to document flora, fauna, mineral resources and Native cultures. This was done not only as a contribution to Western science but as a prelude to possible Western occupation. The objectives of Enlightenment-era explorers were unswervingly nationalist, territorial, and commercial, even as they gathered information that would be of lasting importance to Western scientific thought (Haycox et al. 1997).

In many respects it was the Russians who first brought Enlightenment-era exploration to the North Pacific. As Spanish explorers found their way to southwestern North America, so Russian explorers found their way across Siberia, edging toward the Northwest coast from the northeast. Following furs, the Russian Empire had founded remote outposts in the Siberian Far East by the 1600s. Before the end of the century, Russians and those who followed their advance into the North Pacific had come to recognize the unique potentials of sea otter fur. A sea otter pelt might contain 250,000 to a million hairs per square inch, allowing the otter to spend most of its life submerged in the cold waters of the North Pacific in the absence of blubber or other special protection. Their coats were found to be

unimaginably dense, silky and warm, lending them unparalleled status among fur bearers sought by the expanding trade empires of Europe (Vaughan 1982).

By the early 1700s, under the leadership of the brilliant and expansionist Peter the Great, Russia was beginning to more thoroughly explore and occupy the Russian Pacific coast, lured in no small part by the prospect of cornering the fur markets of Europe and Asia. Sea otters abounded in the cold waters of eastern Russia, along Sakhalin and the Kuril Islands, as well as the Kamchatka Peninsula. Their dense, dark coats fetched astonishing prices when they could, with some difficulty, be delivered to Asian and European markets. The sea otter fur was a tremendous sensation in China. It became particularly emblematic of high status and increasingly integrated into the dress of Chinese elites as hats, capes, and as the furry fringe of silk robes and other clothing. By the late 1720s, sea otter

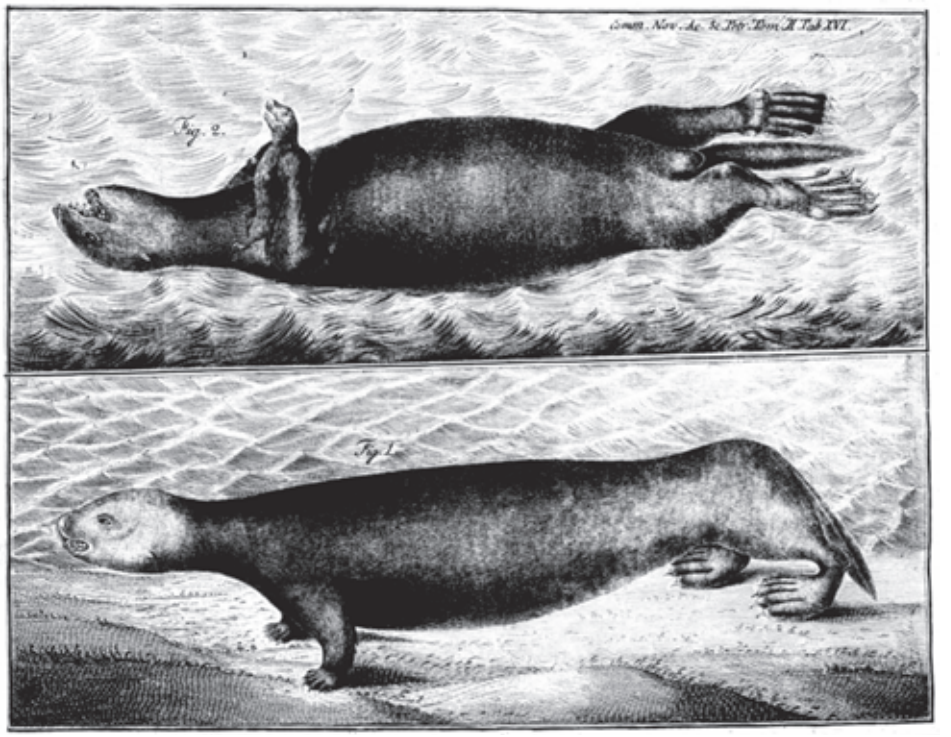


Figure 3.2 – One of the earliest (and least flattering) images of the sea otter *(Enhydra lutris)* within Western scientific writings–by Georg Steller, based on observations during the voyages of Vitus Bering in the 1730s. From Georg Wilhelm Stellero *1751. De bestiis marinis.[The Beasts of the Sea] Novi Commentarii Academiae Scientiarum Imperialis Petropolitanae. 2: 289-398. Image courtesy Wikimedia Commons.*

hunting posts were well established in the Kuril Islands, and the Russians were eager to establish an expanded claim on the North Pacific. Under the command of Danish explorer andRussian Navy officer Vitus Bering, Russian expeditions explored the coast of Kamchatka, and what is today the coast of Alaska, in the course of two voyages (1725–30 and 1738–41). Though Bering did not venture as far south as the Columbia-Pacific region, his explorations set the stage for Russian occupation of Alaska and helped them bolster claims to the entire region. The expedition maps and the place names assigned to Alaskan topographic features gave the Russians a foundation for territorial advancement. The naturalist from their expedition was Georg Steller. He described some of the plant and animal species for the benefit of Western science, lending his name to such common Columbia-Pacific denizens as Steller's jay and Steller's sea lion, among others. The sea otter pelts brought back from these expeditions helped launch interest in the development of what, in time, would become a robust Russian-American fur trade (Tikhmenev 1978; Fisher 1977).

News of the Russians' movement into North American was particularly alarming to the Spanish Empire. Spain's growing awareness of their strategic vulnerabilities on the North Pacific prompted the construction of a large and centralized naval station at San Blas, a short distance from Puerto Vallarta, Mexico, in 1768. Though situated more than 2000 miles from the mouth of the Columbia, this naval station had tremendous implications for the Native residents and the larger history of the region. From the San Blas station, the Spanish launched a series of expeditions along the Northwest coast. They thus asserted their national claims and interests in unprecedented ways. In 1774, explorer Juan Perez sailed northward on the *Santiago*, making the first of what would be many Spanish expeditions to the area, passing the Columbia-Pacific region but making little mention of it. Traveling to what is today's northern British Columbia coast, however, the Perez expedition met with the Haida, trading for pelts and other goods in the first well documented encounter between European peoples and Northwest coast tribes. Perez returned to San Blas, where his commanders and viceroy celebrated the expedition's success in extending the Spanish reach to the lands and peoples of the distant northern coast, while also celebrating the apparent absence of Russians on those shores.

A year after Perez's voyage, the San Blas station outfitted the *Santiago* for a second Northwest coast expedition, under the command of Spanish Basque explorer Bruno de Heceta. Accompanying Heceta was the *Santiago*, under the command of Juan Francisco de Bodega y Quadra. Sailing northward, Heceta traveled along the Oregon coast, which still bears place names like Heceta Head marking his journey, and in August 1775, anchored off the mouth of the Columbia. The geography of the

Columbia-Pacific region, with its rugged mountains and sediment-clogged river mouth, defied the geographical conventions known to Heceta. Similarly, they would defy the imaginations of other explorers who followed, being seemingly incompatible with the mighty "River of the West" described by d'Aguilar more than 170 years earlier. Questioning whether he could be at the mouth of a substantial river, Heceta examined the sandspits, shoals and impenetrable river bar. Deciding this could not possibly be a vast river, the expedition mapped the Columbia River estuary as an inconsequential bay. They called it "La Asunción," marking the feast day of the Assumption, which coincided with the dates of their visit. To Cape Disappointment on the northern side of this imagined bay he applied the name "Cabo San Roque," and to Point Adams on its southern side, now within Fort Stevens State Park, he gave the name "Cabo Frondoso."

The crew then turned their attention to the rugged high mountains along the coast, from roughly Neahkanie Mountain to Tillamook Head—the mountains that define the dramatic views at Ecola State Park. On August 18, the feast day of Santa Clara de Montefalco, they designated this small range as "Sierra de Montefalcon," a name that persists today in the appellation Cape Falcon (McArthur 1992: 40). (Like Cape Disappointment, the mountains of this range, especially Tillamook Head proper, proved to be important navigational landmarks to explorers who followed, though very few set foot on the rugged promontories until the Corps of Discovery.) For a brief time, Spain had bolstered its international claims to the Northwest, based on the thinnest of ties and an assortment of inexact maps and place names.

Yet in 1776, as the Americans were declaring independence from Britain and Heceta was returning home with his vague accounts of the Columbia-Pacific shoreline, the Russians were mounting their occupation of northwestern North America. In that year, Kamchatka's fur trading posts bustled with traffic in sea otter pelts, and enterprising Russian fur traders lobbied for new posts in Alaska. By 1783, with the backing of wealthy Russian merchants, Grigory Shelikov established a fur trading post on Kodiak Island. Naming the bay after his ship, he established the first permanent Russian settlement in Alaska's Three Saints Bay, constructing a permanent European settlement on the Northwest coast some 28 years before the founding of Astoria. As he returned to Kamchatka with his first shipment of sea otter pelts from Kodiak, Shelikov petitioned the Russian crown for a corporation that could develop and monopolize the sea otter trade of the Northwest coast. His petition was approved, allowing Shelikov to establish a company that would in 1799 become the Russian-American Company, the corporation that developed Alaska's fur trade and defined the economic and social landscape of Alaska's Russian period.

Although Kodiak Island was situated far from Russian or even Asian markets, Shelikov's move was extraordinarily well-timed. Almost everywhere the sea otter was hunted, its populations were, in time, almost obliterated, and the Russian waters were no exception. As the Russians began to extirpate commercially viable sea otter population from the Kuril Islands and Kamchatka Peninsula through the 1780s and 1790s, the entire Russian Pacific fur trade began a move into Alaskan waters. They built small forts that would support Shelikov's operations. They transferred materials and men already well-seasoned in Russia's sea otter trade, gradually moving eastward and southward into the waters of the Northwest coast. Native labor, especially the Aleuts of the Aleutian Islands and the Koniags of Kodiak Island were conscripted, often with brute force or the threat of it, to become the principal hunters supporting these new operations.

All of the activity in the North Pacific by the Russians and Spanish drew the attention of the powerful seafaring nations of Europe, France and England, in particular. Even as they lacked seaside colonial footholds on the Pacific comparable to those of Russia and Spain, both were growing and relatively nimble empires, eager to establish their own presence upon the vast and largely uncharted Pacific region. Ambitiously expansionist, England found itself more ready than ever to enter the scramble for territorial claims and fur trade wealth on the North Pacific. With the significant involvement of Captain James Cook, the British Navy made huge technological strides. This allowed them to sail vast distances, learning how to avoid scurvy, for example, and developing such instruments as the chronometer, a precise clock that allowed mariners to establish longitude with pinpoint accuracy. With these and other tools, a cartographic revolution took hold in British exploration, allowing mapping with unprecedented precision and supporting British claims of discovery and future navigation efforts. This revolution was advanced in many respects by Cook. It was significantly honed by his former midshipman, Captain George Vancouver, who later commanded some of the most historically significant early mapping expeditions in the Pacific Northwest.

As British attention turned to the Pacific, the crown eagerly recruited and outfitted Cook, already a celebrated veteran of two prior global journeys of exploration. The Northwest coast of North America was one of several places around the Pacific to be visited in the course of this journey, which would also serve to support British claims to Australia and New Zealand. Arriving on the western coast of North America in 1778, Cook operated under formal instructions. He was directed to utilize the maps of Drake, the Spanish, and others to determine whether a fabled Northwest Passage might exist, thus providing a sea route between the European nations of the Atlantic

and the Asian nations of the Pacific. This aspect of the mission was, however, secondary. It is clear that, through Cook's third voyage, the British hoped to usurp thin Spanish (and perhaps Russian) claims to the Northwest coast and, through the process of discovery, stake claims for a British foothold in this newly contested land.

Though a skilled navigator, Cook and his crew missed the Columbia River entirely as they traveled the coast of today's Oregon and Washington. Instead, Cook made landfall on Nootka Sound, on the west coast of what is today Vancouver Island. There, Cook and his crew found the Mowachat Nuu-chah-nulth (or Nootka) living at the village of Yuquot to be eager traders in furs, especially those of the sea otter. Indeed, the Nuu-chah-nulth were accomplished traders. They had honed their skills in part during exchanges with longstanding trade partners the Chinook and the Clatsop at the mouth of the Columbia River. As Cook observed upon their arrival at Nootka,

A great many canoes filled with the Natives were about the ships all day, and a trade commenced betwixt us and them, which was carried on with the Strictest honisty on boath sides. Their articles were the Skins of various animals, such as Bears, Wolfs, Foxes, Dear, Rackoons, Polecats, Martins and in particular the Sea Beaver, the same as is found on the coast of Kamtchatka (Cook, in Cook and King 1784: 27).

Satisfied with his experiences with Yuquot's inhabitants, Cook referred to the village as "Friendly Cove" in his journals. He designated Nootka Sound "King George's Sound." His writings would so fix this place in the minds of Europeans that Nootka Sound would become the geographical locus of European maritime exploration and fur trade. While directly linked to the lower Columbia during the period (both Native and non-Native traders passed between Nootka and the lower Columbia almost constantly), Nootka Sound would eclipse the Columbia-Pacific region's early importance in most respects. Beyond Nootka, Cook and his crew entered the Bering Strait and encountered solid sea ice off of Alaska's west coast. Seeing no evidence of a Northwest Passage, Cook and his crew turned south, landing in Hawaii. Here, in a conflict with Native Hawaiians on the western shores of the big island, Cook was killed. Resolving to return home through the Indian Ocean, his crew sailed on to China, where they found that the sea otter pelts from Nootka Sound commanded unimaginably high prices.

When the ships returned to England, the journals from Cook's third and final voyage were promptly published. Their dissemination spread news of Cook's demise and of

Figure 3.3 – Nootka Cove, as observed by George Vancouver in 1792, on the west coast of what is today Vancouver Island. By this time, both Spanish and British explorers had established outposts on this cove alongside the resident Nuu-chah-nulth, and American ships were a growing presence. The cove served as a cornerstone of the early maritime fur trade and most of the ships involved in the early exploration and trade at the mouth of the Columbia had been anchored at Nootka for part of their journeys. From Vancouver (1801).

peoples and lands around the Pacific, but also of the tremendous commercial opportunities of trade in sea otter furs. In the published edition of Cook's journals, his second-in-command, James King, provided prospective traders with fine-grained details about Asian markets for sea otter pelts. So too, Dr. James Douglas wrote a preface to Cook's journals, calling for the British and other empires to use exploration, mapping, and other tools of the age to build European commercial dominance on the North Pacific, based in no small part on the trade in furs: *"Every nation that sends a ship to sea will partake of the benefit; but Great Britain herself, whose commerce is boundless, must take the lead in reaping the full advantage of her own discoveries"* (in Cook and King 1784: xliv).

By no later than 1785, a steady procession of English ships was en route to the Northwest coast, most using Nootka Sound as a base of operations. There, the British maintained a lively trade with Native hunters encountered along the outer coast, providing these peoples with metal, tools, and other goods that would revolutionize those societies and rearrange traditional social relationships in myriad ways. At Nootka, Chief Maquinna served as a highly influential gatekeeper to area

tribes in a manner that would be recapitulated on the lower Columbia by Concomly one or two generations later, making him one of the wealthiest chiefs on the coast. For a time, even Maquinna sought to build his own ship to travel to China, to cut out the European middlemen, but lacking support from the British and Spanish, he did not succeed.

It was in this context that British explorer John Meares brazenly sought to capitalize on the sea otter wealth of the region. Inspired by the Cook journals, Meares successfully lobbied London investors to help him supply and launch two British ships christened the *Nootka* and the *Sea-otter*, in order to seek furs in Alaska. After a successful visit to the Northwest coast, Meares sailed to Asia to sell his cargo. While there, he secured a lucrative commission with investors of the British East Indian Company to return to the Northwest in partnership with that company. And in 1787, he departed in the command of a ship called the *Felice Adventurer*. In May 1788, Meares sailed to Nootka Sound and arranged with Chief Maquinna to build a fort in support of British trade. During Meares' voyage, he made landfall both north and south of the Columbia River, but did not detect the great river itself. Meares, like others before him, entirely missed the mouth of the Columbia, passing in July 1788 and, with remarkable confidence, interpreting the estuary as a small and isolated bay. In his disappointment at not finding the river, he recorded the name of the bay as "Cape Disappointment" and the Columbia estuary, which he only perceived at a distance, as "Deception Bay." As Meares reported in his journals,

After we had rounded the promontory, a large bay, as we had imagined, opened to our view, that bore a very promising appearance, and into which we steered with every encouraging expectation. The high land that formed the boundaries of the bay was at a great distance, and a flat level country occupied the intervening space. . . . As we steered in, the water shoaled to nine, eight, and seven fathoms, when breakers were seen from the deck, right ahead, and from the masthead, they were observed to extend across the bay; we therefore hauled out, and directed our course to the opposite shore, to see if there was any channel, or if we could discover any port. The name of Cape Disappointment was given to the promontory and the bay obtained the title of Deception Bay. . . . We can now with safety assert that there is no such river as that of St. Roc exists, as laid down in the Spanish charts. . . . We now reached the opposite side of the bay, where disappointment continued to accompany us; and being almost certain that we should obtain no place of shelter for the ship, we bore up for a distant headland [probably Tillamook Head] keeping our course within two miles of the shore (Meares 1791: 154–55).

Though Meares did explore nearby Willapa and Tillamook Bays and traded for a few furs with Native residents clearly familiar with such a routine, he left little in his wake but enduring place names. The names reveal his misunderstanding of the Columbia's unique geography.[7]

The British were not alone in their response to Cook's journals. The French, too, reviewing accounts of Cook's voyages, were eager to participate in exploration and the assertion of territorial claims along the Northwest coast. King Louis XVI hastily commissioned a vast, if somewhat secretive, expedition to the North Pacific in 1785, under the command of Jean-François de Galaup, the Count of Lapérouse. Lapérouse traveled to Alaska where he and his crew gathered extensive information on the coast from his base on Lituya Bay. Upon crossing the mouth of that bay to return home and report their findings, the expedition lost two longboats and 21 members of their crew, with the survivors promptly retreating to Spanish territories in California. Though Lapérouse gave the French king some basis for territorial claims on the North Pacific, the French Revolution brought an effective end to these explorations, turning national attention inward and scuttling the grand vision of the French royalty for a fur trade empire on the Pacific (Inglis 1997).

Agitated by both British and French exploration, the Spanish sent a series of expeditions to further document and assert claims to the North Pacific coast. They marshalled some of the most skilled commanders in the Spanish Navy: Ignacio de Arteaga and Bodega y Quadra (1779, 1785), Esteban Jose Martinez and Gonzalo Lopez de Haro (1788), Salvador Fidalgo and Manuel Quimper (1790), Francisco de Eliza and Alejandro Malaspina (1791), and Dionisio Galiano and Cayetano Valde y Flores (1792), among others. Most left behind place names still used on the coast today, including features named for themselves. Boldly, during several of these voyages, the Spanish repeatedly ventured into Russian-occupied Alaska, seeking to reassert claims to the region and undermine Russian fur trade monopolies by instigating their own trade with Native peoples. In 1790, the Spanish also attempted to build a permanent base on Nootka Sound as a base of operations on the Northwest coast. The base was supplied and supported as a distant outpost of the San Blas naval station in Mexico. There, they sought to portray themselves to the rising tide of visiting ships—British, Russian, and even Swedish and Portuguese—as the rightful colonial authorities in the Northwest. Moreover, the Spanish brought their own naturalists to begin documenting flora, fauna, and Native peoples (Moziño 1991; Pethick 1980). Direct conflicts with the British over claims to the coast erupted at Nootka. The Spanish attempted to arrest British traders there, including John Meares' business partner, James Cornett, and the two nations almost went to war over the diplomatic standoff

that ensued. George Vancouver and Bodega y Quadra were dispatched to negotiate a settlement, resulting in the Nootka Sound Convention of 1790, the first of three conventions signed at Nootka agreeing to shared areas of interests along the coast by Spain and England and to the ultimate abandonment of both nations' Nootka Sound holdings. While these conventions kept the peace, the British, in particular, continued to survey the coast and work to reinforce British claims. Perhaps ironically, it was George Vancouver who was enlisted to oversee the most detailed survey efforts of the coast while in command of the *Discovery* and *Chatham* (Tovell 2008). As those who had passed before him, Vancouver applied myriad place names to the landscape, while his on-board naturalists, most notably Archibald Menzies, his name memorialized in the scientific name for Douglas fir (*Pseudotsuga menziesii*), chronicled the flora and fauna encountered during this expedition.

Figure 3.4 – A painting by crew member George Davidson of "Fort Defiance," erected by Captain Robert Gray and the crew of the *Columbia Rediviva* on Clayoquot Sound (Vancouver Island) in the winter of 1791-1792, shortly before their first arrival on the Columbia River. The *Columbia Rediviva* sits offshore, while the crew constructs a new ship, the *Adventure*, on the beach. Photo courtesy Wikimedia Commons.

Soon enough, Americans were embarking on their own journeys of trade and exploration along the Northwest coast. The signing of the Treaty of Paris in 1783 brought the Revolutionary War to an end. An independent class of American merchants emerged on the scene, eager to build their own small empires independent of the British Crown and its chartered corporations. In this effort, they were aided by an abundance of skilled but underemployed mariners, many just retired from naval service at the conclusion of the war or let go from British commercial enterprises involved with the triangular trade in slaves, sugar, cotton, tobacco, liquor, textiles, and other goods between Africa, Europe, and the Americas. The fledgling United States, too, was eager to promote exploration in discovery, as the nation sought to establish itself on the international stage. With the prospect of fur wealth, American merchants arrived on the coast with an entrepreneurial tenacity that rivaled the British and prepared them well for the coast's complex *laissez faire* trade, involving multiple Native and European nations vying for the same increasingly limited resources. With ample industrial and shipping capacity, it was the merchants of Boston who were best positioned to enter the Pacific fur trade. Among those merchants was Charles Bulfinch, who began reading Cook's journals, released only a year after the end of the Revolutionary War. By 1787, Bulfinch and other investors arranged for the launching of two ships that would embark on one of the earliest successful American fur trading journeys to the Pacific coast. One of these ships was the sloop *Washington* (or *Lady Washington*) commanded by Captain Robert Gray of Boston, a veteran of the triangular trade and the Revolutionary War (Howay 1941).

Gray oversaw a number of successful trade voyages along the Pacific coast in the years ahead, but found the traffic in some well-known parts of the coast to be problematic. Certain areas, Nootka foremost among them, were crowded with European ships following in the path of Cook. In these places, Native traders could sometimes monopolize the supply while European buyers bid prices ever higher; moreover, on such parts of the coast, local sea otter populations were beginning to dwindle, shifting attention to beaver and other less lucrative furs. With the support of Boston investors, Gray was able to add ships to his fleet, including the *Columbia Rediviva* ("America reborn," but sometimes translated as "Columbus reborn"), reputed to be the first American ship to have circumnavigated the globe, which was sailed by Robert Haswell, his second in command. Sailing in command of the *Lady Washington* and *Columbia Rediviva* into the early 1790s, Gray was eager to find lesser known and exploited parts of the coast. Establishing their own fort on Clayoquot Sound (on Vancouver Island many miles south of Nootka) late in 1791, Gray and his

crew resolved to carve out new trading areas on the North Pacific coast, embarking on a more detailed investigation of hitherto untapped trading places and partners.

The following spring, Gray traveled south. In May 1792, sighting the shoals that had frustrated mariners from d'Aguilar to Meares, but also open channels leading into the mouth of the Columbia River, Gray successfully crossed into the Columbia estuary aboard the *Columbia Rediviva*, becoming the first non-Native person confirmed to have entered the Columbia estuary. It had taken exactly 300 years from Columbus' first voyage for a Euro-American, his ship bearing Columbus' name, to cross into the mouth of the Columbia. As reported in Gray's journal, the land along the river was inhabited by "vast numbers of natives," who were eager to trade:

Figure 3.5 – "Discovery of the Columbia River by Robert Gray," a painting by Fred Cozzens. As was true of most ships of the late 18th and early 19th century, when confronting the complex and dangerous bar of the Columbia River, Gray found it easiest to enter the river along its north shore, finding shelter in the lee of Cape Disappointment (in the background) and then proceeding to Chinook Point, where ship-borne encounters with the Chinook people of Middle Village (today's Station Camp) would become commonplace. Image courtesy Washington State Historical Society.

May 11th – At eight, a.m., being a little to wind-ward of the entrance of the Harbor, bore away, and run in east-north-east between the breakers, having from five to seven fathoms of water. When we were over the bar, we found this to be a large river of fresh water, up which we steered. Many canoes came along-side... a village on the north side of the river west by north, distant three quarters of a mile. Vast numbers of natives came along-side; people employed in pumping the salt water out of our water-casks, in order to fill with fresh, while the ship floated in (Gray 1941: 435).

Gray anchored near the vast Chinook village, so as to trade and find shelter from the waves. While his anchorage is conventionally designated as "Chinook Point" it is clear that this anchorage may have sat somewhat upstream from the place now bearing this name, by Middle Village. (The location of "Chinook Point" has changed; until the late 19th century, the term was applied to the general point of land on which Middle Village sat, but was later applied to the promontory on which Fort Columbia now sits.) By May 13, finding that the ship was still exposed to the current, wind, and waves, the crew sailed upriver to the waterway now called Gray's Bay. On May 16, the *Columbia Rediviva* returned downstream, anchoring very close to Megler, in or very near the cove where the National Park Service (NPS) Dismal Nitch unit is located today. Each day of this journey, Gray noted "many natives alongside," always curious and willing to trade furs; on some days he reported "many natives from different tribes" as well as a fair amount of "rainy, dirty weather."

On May 18, the crew attempted to depart the river but found the bar menacing and anchored once again, very near Fort Columbia and Middle Village. The following day, "Captain Gray gave this river the name of *Columbia's River*, and the north side of the entrance *Cape Hancock*, the south, *Adam's Point"* (Gray 1941: 437). On the 20th, the *Columbia Rediviva* returned to sea, having made no lasting marks on the landscape during roughly a week in the lower Columbia River region, but changing its history forever. The Native people of the river also have written record of the visit, which was understood to be "an omen of the coming of a new epoch" (in Miller 1958: 28; Boas 1894).

Encountering the Spanish at Nootka later that summer, Gray related his discoveries, providing both an account of the lower Columbia and his own rough charts of its mouth. In turn, Bodega y Quadra shared Gray's findings with Vancouver. Vancouver, who had traveled the coastline offshore from the Columbia earlier that year, was reluctant to take Gray's account at face value or to allow an American merchant to make uncontested claims to such a prominent landmark. In late October 1792,

Vancouver returned to the river's mouth. Finding the bar too perilous for the *Discovery*, he sent across the smaller *Chatham*, under the command of Lieutenant William Robert Broughton, to explore the river. The *Chatham* came across the bar with difficulty. Like Gray before, and many mariners who would follow, Broughton followed the north shore, the most readily navigated part of the estuary at the time, visiting all of the prominent northern shore landmarks now within Lewis and Clark National and State Historical Parks. Initially taking refuge on the protected eastern side of Cape Disappointment, the *Chatham* finally anchored off what was termed "Village Point" (apparently Chinook Point, now known as Middle Village), which was largely unoccupied in that season, as many residents were at villages on Willapa Bay and beyond. Yet the river's mouth was not vacant. Indeed, the crew of the *Chatham* was astonished to find themselves in the presence of large numbers of skilled traders, who seemed to already understand the value of sea otter pelts to visiting mariners:

One very large Canoe with about five & twenty Indians in her (the second we saw since we entered the River) came along side and brought some Salmon which we eagerly bought of them on reasonable terms; they also brought two or 3 Otter Skins for sale and seem'd to know the value of them very well (Bell 1932: 39).

After some initial trading, Broughton determined to survey the mouth of the river, recording some of the first detailed written accounts of places now within LEWI.[8] Returning to the *Chatham*, Broughton then anchored the ship somewhere in the vicinity of the waters offshore from the NPS Dismal Nitch wayside and ventured upstream in the ship's small cutter, mapping the shoreline and trading with Chinookan people who greeted and aided Broughton's party as they traveled almost 100 miles upstream. The expedition proceeded east of modern Portland and within sight of the Columbia Gorge. Returning to the *Chatham* on November 4, the crew departed a few days later, rejoining Vancouver in San Francisco Bay with a full account of their observations (Mockford 2005). By 1794, Vancouver's accounts of the mouth of the Columbia were gaining the attention of British traders. In that year, Vancouver would also officially declare the existence of the Northwest Passage disproven, ending roughly 200 years of speculation by European explorers. In the years that followed, both Gray's and Vancouver's accounts would be used by the Americans and the British, respectively, to assert national claims to the lower Columbia and to the entire Northwestern region.

Once Gray's and Vancouver's observations were reported to the Anglophone world through journal and press accounts, the Columbia River estuary soon became a popular stopover for merchant ships plying the coast in search of furs. Much less crowded or contested than Nootka, and far less overhunted as yet, the river became a thriving center of trade, primarily for American and British ships. Most did not treat the Columbia as their final or sole destination, but as one of several places within a circuit of tribal entrepots visited along the coast before departing across the Pacific to Asia or back to the Atlantic with holds full of furs.

Figure 3.6 – Broughton's sketch map of the entry of the Columbia, showing the large Chinook settlement at Middle Village as well as the Clatsop settlement at Point Adams. From Vancouver 1801.

So began the era of the maritime-based fur trade in the Columbia-Pacific region, a period lasting a mere 20 years, from 1792 until roughly 1812, by which time Astoria was beginning to hold a centralized role in the Columbia-Pacific fur trade. Though the exact number of ships that visited the Columbia remains conjectural, it's clear that the number escalated with time into the early decades of the 1800s. By 1795, Charles Bishop reported that the Chinooks at the mouth of the Columbia apparently had a system of alerting one-another to the arrival of traders: *"at Sunset a Gun was fired by desire of some of the Natives to inform their bretheren up the River of the Arrival of*

the Ship" (Bishop 1967: 56). (British ships were numerous, while no fewer than fifty separate American trade expeditions embarked for the coast between Gray's and Vancouver's voyages of 1792 and the Corps of Discovery's stay in the winter of 1805–06, and that estimate certainly falls short of the actual figure). Almost all of the American ships in the trade were from Boston, so that in *Chinuk wawa*, the term for American became "Boston," to distinguish these traders from the "King George" men. Lewis and Clark found that the Chinook and Clatsop could recount the names of many of these ships and describe their cargoes and crews: *"they possess good memories and have repeeted to us the names capasities of the Vessels &c of maney traders and others who have visited the mouth of this river"* (Clark, in Moulton 1990: 190). Indeed, the Lewis and Clark journals mention no less than thirteen ship captains who were reported to be not just one-time visitors but regular traders on the lower Columbia by that time (Lang 2008; Moulton 1990; Swan 1857).

Very little hunting was attempted by these visiting fur traders, so far as can be discerned from the written record. Instead, they obtained most of their furs through trade with the Chinook along the readily navigable northern bank of the river, in particular, but also with the Clatsop on the southern bank. These peoples obtained sea otters by hunting the rocky shorelines in places like Cape Disappointment and Tillamook Head, but also in the open ocean where otters could be found in nearshore kelp beds. Furthermore, these tribes hunted beaver, fox, and other species that became increasingly important in trade over time. By going directly to these large and powerful nations—so eager to trade and so wealthy in furs and other material goods—European and American traders were able to tap into large and well-established tribal trade networks that sustained the Native and non-Native fur trades alike. For the Native peoples of the Columbia-Pacific region, the increased attention from the peoples of Europe brought growing access to imported goods such as metal, tools, fabrics, and porcelain, especially within the two major village complexes on either bank. As William Clark noted in January 1806, *"there is a trade Continually Carried on by the nativs of the river each tradeing Some articles of other with their neighbors above and below them, and those articles which are Vended by the whites at their enterance of this river find their way to the most distant nations inhabiting its waters"* (in Moulton 1990: 199).

Augmenting their prodigious significance in Northwestern trade networks, these people had access to goods that were largely unknown along the adjacent coast and through much of the interior Northwest and could be traded with other tribes for a considerable price. The Chinook, in particular, occupying the most readily accessible part of the estuary, achieved a kind of economic and social ascendance that would be

unmatched on the Columbia-Pacific's expanding fur trading frontier. Yet the growing number of ships also carried diseases to which the Columbia-Pacific's Native people had limited immunity. They thus brought a series of epidemics that would reach epic proportions in the decades ahead, as fur traders built permanent establishments on the Columbia's shores.

In the end, the Russians would control little more of North America than those portions already in their possession at around the time of Lewis and Clark, and the Mexican empire would control somewhat less, with the whole of the middle being taken by the English or their American progeny. The abdication of the Spanish throne in 1808 plunged that nation slowly into chaos. This contributed in part to the launching of the Mexican War of Independence in 1810. Overtaxed by the war and events at home, the Spanish ceased all claims to the shoreline north of modern California by 1819 in the Adams-Onís Treaty between the United States and Spain, even as the Mexican revolution was still underway. By the time Mexico achieved independence some 11 years later, the nation had lost much of Spain's colonial ambitions. Moreover, by this time the Columbia-Pacific region was home to permanent trading posts and was firmly in the control of British and American interests.

The Russians retracted their claims to the Northwest coast for reasons similar to those of Spain. The Russians long claimed the coast as far south as California, though they were in no position to defend their claims from British and American interests from their remote Alaskan outposts, some 1400 miles away from the Columbia-Pacific region. Russian outposts on the Northwest coast literally sat on the opposite side of the globe from St. Petersburg, roughly 7000 miles away, over vast and largely undeveloped terrain that lay frozen a good portion of the year. Russian supply lines were severely overstretched. The shipping of furs and supplies from these outposts to the markets of Europe was ominously slow and expensive. As a land rather than a sea power, Russians often found themselves having to construct their own ships in Alaska, while also occupying a precarious security environment. While sometimes serving as trading partners, the Tlingit—distant cultural relatives of the Chinook and Clatsop—were so numerous, technologically advanced, and organized that they could (and sometimes did) combat or embargo the Russians, leaving the fur traders feeling an isolated and vulnerable minority indeed. The prospect of having to occupy and somehow control the sprawling Northwest coast region from Sitka to the mouth of the Columbia and beyond was simply more than the Russians could contemplate. Occasional hunting expeditions plied the coast, and a fur trading outpost was established near prime sea otter hunting grounds north of modern San Francisco at Fort Ross, California, in 1812.

So in spite of occasional diplomatic efforts to claim the larger coast and attempted alliances with the Spanish to repel the British and Americans, the Russian presence on the Columbia-Pacific coast was at most fleeting and ephemeral (Gibson 1993).[9] The Russians passed the mouth of the Columbia many times. Though they did land occasionally, most ships only witnessed this coastline from the sea (Mackie 1997).

Pressures to discover and claim the Northwest coast would soon precipitate expeditions by land. The first to succeed was the Alexander Mackenzie Expedition that traveled across land with the support of the North West Company. A year after Gray's and Vancouver's visits to the Columbia, the Mackenzie Expedition completed the first transcontinental journey of exploration, reaching saltwater inlets near what is today Bella Coola, British Columbia, in July 1793. Though Mackenzie encountered hostility from local tribes and did not proceed to the open ocean, the success of that expedition bolstered British claims for what became the British Columbia coast. The expedition built on the work of Vancouver, who had passed Bella Coola only 48 days earlier. Some 12 years after Mackenzie, Lewis and Clark would find their way to the Pacific, too, guided by similar objectives in the Columbia-Pacific region.[10]

4 Lewis and Clark and the Corps of Discovery

Explorations on the Pacific Shore

So much has been said about the Corps of Discovery expedition and outcomes that it's presumptuous to say much more. Local historians and nationally known scholars have sifted through the written record of the journey, expounding on its implications until, it seems, little more can be gleaned from the topic. Moreover, the recent bicentennial of the Lewis and Clark expedition prompted the development of an entirely new literature on the epic journey and a reissuing of classics addressing the same (e.g., Josephy 2006; Ziak 2005; Ronda 2002; Duncan and Burns 1999; Ambrose 1997; DeVoto 1997; Moulton 1990). The story of the Corps of Discovery members is so central to the mission of the Lewis and Clark National and State Historical Parks that some staff have a nearly photographic recollection of the journey's details and can recite and interpret passages from the journals like they're reciting a core canonical text. With this in mind, we do not seek to significantly retell or recast the Lewis and Clark story as part of this broad historical narrative. Instead, our aim is to provide a sketch of the key places associated with the Corps of Discovery's tenure in the region, linking key historical themes with events that precede and follow their stay in the Columbia-Pacific region.

Thomas Jefferson was in most respects the architect of the Corps of Discovery. Deeply influenced by both a patriotic fervor for the fledgling American nation and the Enlightenment intellectual currents of his time, his vision of a grand expedition involved striking a balance between seemingly incompatible objectives. While this balance of scientific inquiry and nationalism defined the history of exploration in Jefferson's time, it was not unique. Such compromises have a long and venerable history in the enterprise of exploration, from Columbus to the Wilkes expedition to the U.S. space program of the mid-20th century and beyond. The Louisiana Purchase of 1803 provided Jefferson with a territorial basis for westward exploration and a foundation for the sometimes delicate diplomacy surrounding the Corps of Discovery when explaining his motives to other nations that held claim to western North America—in particular, Spain (DeVoto 1997). Yet he was eager to have a land-based expedition push to the Pacific shores, recognizing that such a journey

might bolster American claims to the Northwest and provide information allowing for successful American occupation and resettlement. Accordingly, *"guided by Jefferson's vision, shaped by Enlightenment agendas, the Corps of Discovery was at once a marathon scientific mission, diplomatic junket, and an act of territorial conquest"* (Deur 2008: 9). Jefferson's complex and lofty goals for the expedition converged on the banks of the lower Columbia—as the Corps of Discovery surveyed the coast, documented its myriad plants and animals, and chronicled information on the region's Native peoples on the basis of direct observation with a degree of detail that had never before been attempted. Under the highly skilled Captains Meriwether Lewis and William Clark, from early November 1805 until late March of the following year, members of the Corps of Discovery brought these values and agendas to the shores of the Columbia-Pacific region.

Figure 4.1 – Portraits of Lewis and Clark, as depicted by prominent American portrait painter Charles Wilson Peale in 1807 and 1810, respectively. Image courtesy Wikimedia Commons.

Yet despite its grander goals, it is astonishing how much of the Corps' story in the Columbia-Pacific region was defined by simple matters of survival. After nearly 18 months crossing the continent by foot, horseback, and canoe, coupled with the bad

fortune of arriving on the coast at the onset of a particularly dark and rainy winter, the Corps of Discovery were dangerously low on provisions. They were, as the captains' journals often observed, *"very pore & weak for want of Sufficient food"* during much of their time on the Pacific (in Moulton 1990: 181). Many of the key decisions made during their stay on the Columbia estuary and many of the sites now within National Park Service management centered on matters of finding adequate shelter and food to recuperate and to prepare themselves for the journey home. The Salt Cairn was critical for the preservation of meat, which was scarce and spoiled rapidly in the heavy winter rain. Travel over Tillamook Head through the Ecola Park villages to the village at present-day Cannon Beach, was motivated in no small part by a desire to secure meat and blubber from a stranded whale. Indeed, food quests had a critical bearing on the choice of the Fort Clatsop site, the most critical geographical decision of their stay in the Columbia-Pacific region. The northern banks of the estuary are steep, and those parts that were not heavily forested were densely occupied with tribal settlements. The south side, as Broughton and Vancouver's crew noted in 1792, was a relatively forgiving place, with *"low meadows"* and *"marshy edges of the river"* with wild geese and ducks in abundance (Vancouver 1801: 55). The famous vote by the Corps of Discovery to relocate to the estuary's south bank, a historic event involving votes by all expedition members including a woman (Sacajawea) and an African-American slave (York), was probably not a difficult or divisive one in the end.

For the Native people of the area, the arrival of the Corps of Discovery clearly signaled a transition in their relationship with the non-Native world. As the first party to arrive by land and from the east—a sizeable and disheveled group of men, who were low on provisions and eager to construct a fortified base camp—the Corps of Discovery was seen as both a novelty and a potential threat. As Clatsop matriarch Jennie Michel reported of her tribe's oral traditions regarding the Corps,

"*When Lewis and Clark first came and camped on Tongue Point, the Indians believed they came to make war on them and they cut trees across the rivers near their town so the women and children could run to the woods and hide, and came down [to Seaside on] the Neahcoxie and Necanicum and hid in their canoes*" (in Cox 1900: 17).

In time, these concerns largely evaporated as tribal communities began to interact and trade with expedition members. Indeed, the time spent on the lower Columbia proved among the longest and most congenial periods of interaction between the members of the Corps of Discovery and tribes encountered along the trail,

comparable only to the Corps' stay the prior winter among the Mandan. In spite of the fact that it was winter, when many of the largest Columbia estuary villages sat all but unoccupied, interaction was nearly constant, allowing for a steady supply of trade goods and information flow in both directions. The captains' journals from this period were rich with detail, reflecting the candid sharing of information by the Clatsop, Chinook, Tillamook, and others as they huddled in the dimly lit interior of the fort, the rains pounding on the rooftops during one of the wettest winters on record. Both the journals and tribal oral tradition suggest that the Native people were underwhelmed with the Corps' trade goods, accustomed as they were to seafaring traders—both Native and non-Native—with rich cargoes that dwarfed the Corps' meager supply. Still, the Corps' larders were filled in part by the intervention of Native peoples, who brought a steady supply of foods, furs, and other items to trade for metal tools and ornaments, knives, fishhooks, beads, cloth and clothing, and what few other items the Corps had in their possession after a long trek across the continent.

The Corps of Discovery effectively entered the study area in the beginning of November, as the winter storms commenced. On November 7, near Pillar Rock in Wahkiakum County, Clark reported (with characteristically inventive spelling) *"Great joy in camp we are in View of the Ociean, this great Pacific Octean which we been So long anxious to See"* (in Moulton 1990: 33). Though it's likely their view consisted mainly of open estuary, it was clear to the Corp that it emptied uninterrupted into the sea and their journey was nearing its westernmost destination.

Yet this elation evaporated when they descended into the Columbia estuary and saw how unforgiving the Columbia-Pacific's environments could be—especially in a stormy winter season. By November 10, the entire party found themselves unhappily marooned at Clark's "Dismal Nitch," where most of them would remain for six disheartening days. The characteristic cyclonic south winds of the wintertime coast had begun by this time. With only a few miles to go before reaching their ultimate destination, the Corps was trapped on a steep, rocky shoreline on the Columbia's north shore, fully exposed to the south winds, but also the considerable swell that builds on the north banks of the estuary during such storms—waves that were navigated by some Indian canoes visiting the Corps, but swamped others: *"the highest waves I ever Saw a Small vestles ride,"* as Clark observed (Moulton 1990: 41). The Corps was trapped in this location from November 10 to 15, unable to escape using their own canoes, hemmed in by steep banks, camping atop driftwood logs that were buoyed and became unnervingly mobile on the highest tides. Their gear and clothing were soaked and food was scarce, causing the Corps to break into a supply of

pounded, dry fish that was kept for emergency purposes. Writing in his journal on November 12, 1805, Clark noted, *"a hard rain…with a hard wind which raised the Seas tremendiously high braking with great force and fury against the rocks & trees on which we lie, as our Situation became Seriously dangerous,"* only the second time in the entire expedition that Clark explicitly mentioned the Corps being endangered (Moulton 1990: 42–43).

After the sixth day of being stranded at Dismal Nitch, the storm broke and the Corps was able to move onward to the Pacific Ocean. A small team from the Corps, led by Lewis, proceeded over land in the direction of Cape Disappointment. The majority, remaining under Clark's command, proceeded westward by canoe, bringing all of the canoes and gear downstream toward the sea. On November 15, 1805, Clark wrote,

"I had the canoes loaded in great haste and Set Out, from this dismal nitich where we have been confined for 6 days passed, without the possibility of proceeding on, returning to a better Situation, or get out to hunt, Scerce of Provisions, and torents of rain poreing on us all the time" (in Moulton 1990: 49).

Leaving Dismal Nitch, Clark's party moved westward to escape their predicament, view the sea, and locate both food and a desirable location for a winter camp. Clark reported that they *"proceeded on passed the blustering point below which I found a butifull Sand beech"* (Moulton 1990: 50). Here, on the eastern edge of Middle Village and within a half-mile of today's Chinook Point, they established Station Camp, which served as the base of operations for the Corps of Discovery from November 15 to 25. After a precarious six days at Dismal Nitch, the Corps was relieved to settle into shelters built from boards taken from the Chinooks' sprawling Middle Village, which was largely unoccupied this time of year. Captain Lewis and the remainder of the Corps joined Clark's group on November 17 from their trek to Cape Disappointment. Not only did they find the sandy shoreline much more accommodating than their prior quarters on Dismal Nitch, but—as the Chinooks knew well—the location of Chinook Point and Station Camp gave the Corps of Discovery a commanding view of the river in many directions. In the days that followed, the Corps would make the most of this position, taking their first detailed surveys of the Columbia estuary shoreline. Chinooks visited the encamped group occasionally, including visits from some portion of the Chinook chieftainship, and canoe-loads of Chinooks brought food both as gifts and for trade. Based on the information now available, there seems to have been little objection to these temporary visitors setting up camp on the edge of town.

At this time, both Captains Lewis and Clark brought separate groups on exploratory side trips to Cape Disappointment, with Lewis going before his arrival at Station Camp, and Clark making a detour to the cape in the middle of his Station Camp stay. As mentioned, Lewis brought a group of four men from Dismal Nitch on what must have been an arduous and damp overland journey—leaving a day before Clark's party on November 14. After camping at Cape Disappointment, this group backtracked to Station Camp on November 17, to the camp already established by Clark and his group. Clark then traveled with eleven men overland to Cape Disappointment between November 18 and 20. Allowing members of the Corps to behold the open sea, the ultimate geographical objective of their long journey, these trips boosted the morale of the group, which had dipped quite low during their stay at Dismal Nitch. According to Clark's journal entry dated November 18, 1805, *"men appear much Satisfied with their trip beholding with estonishment the high waves dashing against the rocks & this emence ocian"* (Moulton 1990: 67). Clark and his men ascended one of the flanks of Cape Disappointment, probably McKenzie Head, and camped there. They also explored a few miles north of the cape, venturing into the vicinity of modern Long Beach, carving their name on a tree at their northernmost stop along the peninsula (NPS 2004a, 2004b, n.d.). On November 20, Clark's party returned to Station Camp, meeting and trading with many Chinooks en route, including the chief, Concomly, who would become powerful along the lower Columbia in years to come (NPS n.d.).

During their stay at Station Camp, members of the Corps explored options for a favorable winter encampment location. Game was scarce near their northern shore camp. And they learned in discussions with visiting Chinook that food was more readily available on the southern shore of the river: *"They generaly agree that the most Elk is on the opposite Shore, and that the greatest numbers of Deer is up the river at Some distance above"* (Clark in Moulton 1990: 85).

Though there was some discussion of returning upstream on the Columbia for the winter, provisions were low and the weather not improving. On the coast they had game, potential for salt making, and the chance that a visiting ship could arrive with needed supplies. On November 24, with only one dissenting vote, the group consented to cross the river. The following day, the entire Corps of Discovery departed Station Camp heading towards the opposite shore of the Columbia, in search of a winter campsite (NPS 2004b, n.d.). Finding the wide, open estuary too turbulent to cross, they tracked upstream, crossing at narrows near Pillar Rock. Between November 25 and 29, they slowly moved downstream, intermittently delayed by storms, from modern-day Svenson, Oregon, to Astoria. Quite low on

provisions, Lewis and Clark sent out several hunting parties when they arrived, sending them to Youngs Bay and the Lewis and Clark River estuary, where they found waterfowl abundant.

After a few days' exploration, Captain Lewis chose the location of their winter campsite in the first days of December 1805. The fort site sat on a clearing atop a small hill. It was of strategic value, defensible, and boasted commanding views of the surrounding waters. Yet it was also rich in the natural resources required to sustain the team for the winter. In particular, the site had a spring and was close to good hunting grounds: *"extencive marshes at this place of Encampment We propose to build & pass the winter, The situation is in the Center of as we conceve a hunting Countrey"* (Clark in Moulton 1990: 112). Captains Lewis and Clark ordered that a log structure be built on the site, with palisades and other defensive features echoing the design of Fort Mandan, built by the Corp the prior winter. The captains moved into the fort, which they named Fort Clatsop in honor of their host tribe, by December 23, with the rest of the Corps settling in by Christmas Day. The men were clearly eager to get indoors and out of the elements as the fort remained incomplete at this date. Portions of the fort, including its defensive pickets, were completed several days after its initial occupation.

Figure 4.2 – A sketch from William Clark's journals, showing the configuration of Fort Clatsop's rooms and exterior palisades. Clark's sketches and notes have served as the principal source of guidance in the construction of the Fort Clatsop replica, and in other representations of the fort. Image courtesy Oregon Historical Society.

Fort Clatsop would serve as the principal home, work space, and trade center for the Corps of Discovery from Christmas of 1805 until they commenced their journey home on March 23, 1806. Situated at Fort Clatsop, the Corps entered into a routine that is familiar to students of Lewis and Clark history. Hunting parties from the Corps spent much time pursuing game in the vicinity of Fort Clatsop, no doubt in many places now situated within the park, including elk, deer, and waterfowl, as well as fish.

They processed large quantities of meat both for immediate use and in anticipation of the long journey home. While at Fort Clatsop, the Corps frequently engaged with local Clatsop and Chinook people, trading goods and sharing information. The Corps was especially interested in documenting the size, location, and demeanor of these and other tribes near the mouth of the Columbia, as well as the fundamentals of local flora, fauna, and geography. Large quantities of food were supplied to the fort through trade with the Clatsop, in particular, who brought fish, deer and elk meat, waterfowl, whale meat and blubber, and a diverse assortment of edible roots and berries. Serving as the principal host to the Corps was Coboway (also reported as "Comowool" in the journals), who the Corps found generally agreeable and generous. Other Clatsop chiefs, such as Kotata and Twilch, were reported to have visited with the Corps and participated in joint hunting expeditions (Cox 1900: 17). Both captains kept detailed journals during this period, as it was here that Lewis returned to writing after a three-month hiatus. They also developed maps of the coastline and, to the extent conditions allowed, collected samples of plants and animals to carry back to Jefferson and the scientific community of the United States.

From time to time while based at Fort Clatsop, the two captains and other members of the Corps explored the surrounding countryside, not only to hunt and fish, but also to gather items, to meet Native peoples in their own communities, and to survey the landscapes of what is today coastal Clatsop County. The journals include several mentions of travel in the direction of the ocean or south and into the interior, but the precise geography of the references is often vague. Point Adams, within what is today Fort Stevens State Park, figures prominently throughout the Lewis and Clark journals, though it is not clear how much time was spent there, or indeed if the village was visited at all. There are cryptic references to Lewis exploring the Point Adams area at one point in the journals, but no geographically specific observations. There are also references to hunting parties being sent to the area from Fort Clatsop, and the salvaging of boards from unoccupied houses either at the Point Adams village or very nearby. Detailed discussions of Clatsop longhouses may have been influenced by visits to the village, though this too remains unclear

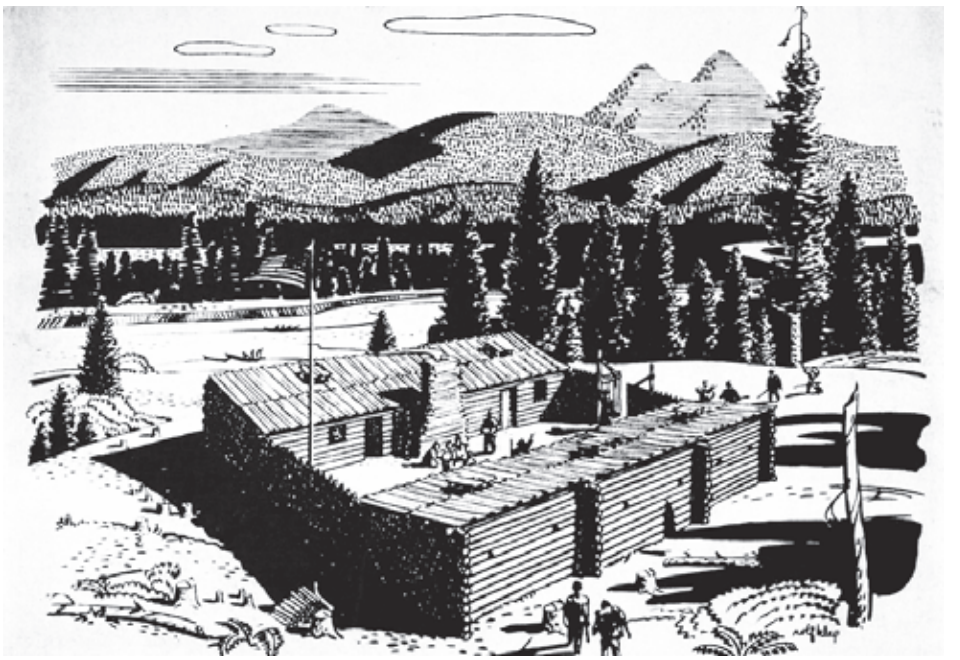


Figure 4.3 – An artist's rendition of Fort Clatsop, by Rolf Klep, drawn during the Lewis and Clark Sesquicentennial celebrations of 1955-56. Courtesy Oregon Historical Society.

in the journals. Some scholars determine that the village was never visited by the Corps.[11] Still, it is clear that Point Adams is mentioned often, especially as a navigational landmark of prominence, as would be the case in the many accounts of explorers and mariners who passed through the Columbia estuary before and after the visit of Lewis and Clark.

From their Fort Clatsop base, members of the Corps of Discovery also traveled southward along the coast, well beyond the shores of the Columbia estuary. During their time stationed here, the Corps needed salt to preserve food—meat, in particular. On the humid coast, meat spoiled quickly and was difficult to dry. Recognizing an urgent need for preserved food, both for use at the fort and for the return journey home, the captains dispatched a group of Corps members to develop a salt-making camp, a group initially consisting of expedition members Fields, Bratten, Gibson, Willard, and Wiser.

The location of a suitable site for the salt-making operation presented challenges for the group. The salinity of the Columbia estuary is low, as is the portion of the

ocean immediately adjacent to its mouth, it was determined that the camp should be located on the open ocean coast, several miles distant. The group left on December 28, 1805, only three days after the Corps took up residence in the fort, packing *"5 of the largest Kittles"* across the dune fields of Clatsop Plains. The Corps had recently developed a trail to the ocean coast on what probably included portions of a preexisting tribal trail network running somewhat north of the present Fort-to-Sea Trail. Following this trail to its outlet somewhere near Sunset Beach, the crew then hiked southward along the beach. Their challenge was to find a place on the outer coast that possessed sufficiently saline ocean water to support their operation, while also having a nearby freshwater source for drinking. They found this combination at what is today Seaside, on the distant southern end of the Clatsop Plains. Here the crew established an encampment in close proximity to a village of mixed Clatsop and Tillamook speakers. They established a cairn, a pile of rocks that allowed them to build a fire below in the recessed spaces while perching kettles on top to heat. The group made salt by repeatedly boiling sea water on these rock structures until they rejoined the expedition at Fort Clatsop on February 21, 1806 (Cannon 1995).

During the salt-makers tenure on the coast, members of the Corps occasionally traveled back and forth from Fort Clatsop to the salt cairn, presumably using the trail between fort and sea. Apparently this route was also taken by Clark and his party when traveling to what is present-day Cannon Beach to retrieve whale meat and blubber. The trail was difficult to use in places due to brush, stream fords and swampy conditions, and at times groups chose different paths or traveled by canoe for portions of the trip. For example, on a journey from the fort to the salt cairn on January 3, Sergeant Patrick Gass and George Shannon avoided the trail altogether, choosing instead to travel along a ridgeline. The captains' journals make it clear that they often felt *"uneasy"* about the safety of the salt-making team, but also took comfort in the congenial relationship the team established with the residents of the adjacent village, *"4 houses of Clatsops & Killamox, who they informed me have been verry kind and attentive to them"* (Clark in Moulton 1990: 177). The location of the salt cairn was later overgrown and largely forgotten, but the site was identified in 1899 by Clatsop elder Jennie Michel, who as a child knew many of the Clatsop chiefs who had hosted Lewis and Clark. She identified the site for an expedition of the newly established Oregon Historical Society, led by half-Clatsop attorney and grandson of Chief Coboway Silas B. Smith (Cox 1900).

Yet from Seaside, the Corps of Discovery travelled further southward. In early January of 1806, Captain Clark and twelve other Corps members, including Sacagawea, traveled beyond the salt-making camp to see a beached whale south of

what is present-day Ecola State Park. Blubber from the whale at Cannon Beach had already been transported to the fort by Native traders in the first days of January. According to Lewis's journal, dated January 5, 1806, the portion of this blubber they had received at the fort was *"not unlike the fat of Poark...I had a part of it cooked and found it very pallitable and tender, it resembled the beaver or the dog in flavor"* (Moulton 1990: 166). The men of the Corps had acquired a taste for whale blubber during their journey and, still being low on provisions, the captains agreed they should send a party to obtain whale meat and blubber from people living in the vicinity of the whale.

The steep and muddy condition of the tribal trail leading over Tillamook Head (roughly approximating the route of the modern park trail) made for slow and difficult travel, but the setting was spectacular (Dicken 1978). Near the summit of the trail, at a place designated by Lewis as "Clark's Point of View," Clark and his party marveled at the scenery, which encompassed much of the entire Columbia-Pacific region:

"we Set out early and proceeded to the top of the mountain next to the which is much the highest part and that part faceing the Sea is open, from this point I beheld the grandest and most pleasing prospects which my eyes ever surveyed, in my frount a boundless Ocean; to the N. and N.E. the coast as far as my sight Could be extended, the Seas rageing with emence wave and brakeing with great force from the rocks of Cape Disappointment as far as I could See to the N.W. The Clatsops Chinnooks and other villagers on each Side of the Columbia river and in the Prairies below me . . . and on the other Side I have a view of the Coast for an emence distance to the S.E. by S. the nitches and points of high land which forms this Corse for a long ways added to the inoumerable rocks of emence Sise out at a great distance from the Shore and against which the Seas brak with great force gives this Coast a most romantic appearance" (in Moulton 1990: 182).

While atop Tillamook Head, Clark also marveled at the massive mature Sitka spruce that dominated the headland in dense, cathedral forests. As Clark noted, the spruce *"on the top of the Point of View rise to the emence hight of 210 feet and from 8 to 12 feet in diameter, and are perfectly Sound and Solid"* (Moulton 1990: 183).

Descending down the southern face of Tillamook Head, Clark and his party visited the abandoned village at what is today called Indian Beach, in Ecola State Park:

"I proceeded on down a Steep decent to a Single house the remains of an old Kil a mox Town in a nitch immediately on the Sea Coast, at which place great no. of eregular rocks are out and the waves comes in with great force. Near this old Town I observed large Canoes of the neetest kind on the ground Some of which appeared nearly decayed others quit sound, I examoned those Canoes and found they were the repository of the dead" (in Moulton 1990: 182).

Interestingly, Clark made no mention of the Ecola Point Village, which was likely larger than the remnant Indian Beach community, and probably still occupied (at least seasonally) at the time of their travels. It is possible to bypass that community while traversing this part of the coastline, which may explain the omission.

By the time the party arrived at the mouth of Ecola Creek, according to Clark's journal, the resident Tillamook and visitors from nearby communities had already harvested most of the whale's meat and blubber, presenting Clark with a largely skeletonized animal and little prospect of the group harvesting any part of the whale independently. His January 8, 1806, journal entry reads, *"the Whale was already pillaged of every valuable part by the Kil a mox Inds. in the vecinity of whose village's it lay on the Strand where the waves and tide had driven up & left it"* (in Moulton 1990: 183). Clark estimated the whale to be roughly 105 feet in length, suggesting that it was a blue whale (*Balaenoptera musculus*), which is the only whale to reach such proportions on this coast. The Corps found that the Tillamook prized the whale products and did not part with them lightly. In the end, they were able to trade for roughly 300 pounds of blubber and a few gallons of rendered whale oil. Clark declared the name of the creek to be "Ecola," the Chinook jargon term for a whale, which was probably heard incessantly by the Corps during their stay—a name that would, many years later, be applied to the state park occupying the lands the Corps crossed to get there.[12]

While overnighting across from the main Tillamook village at the mouth of Ecola Creek, certain members of Clark's party were in an altercation with Native visitors to the village, at least some of them Chinook, but left the following morning without incident. On the way back over Tillamook Head, they encountered several Clatsops and Chinooks returning home with *"emence loads"* of blubber and meat from the whale.

Though most historians would agree that the Corps of Discovery's stay at Fort Clatsop was successful, it was clearly a difficult period for the expedition. The

Figure 4.4 – A map from the journals of Lewis and Clark, showing much of the Columbia-Pacific region. The tribal villages at such locations as Chinook Point (today's Station Camp) and Point Adams (today's Fort Stevens) are visible – labelled *"Old Chinnook Village"* and *"Clott Sop Nation"* respectively. Near the Salt Cairn, the map notes *"Clott Sop & Ki-la-mox Indians at a portage in abt 7 houses."* In what is today Ecola State Park, Tillamook Head is marked *"Clark's Point of View,"* while Indian Beach is marked *"old village – squar coffins in canoes."* Image courtesy Oregon Historical Society.

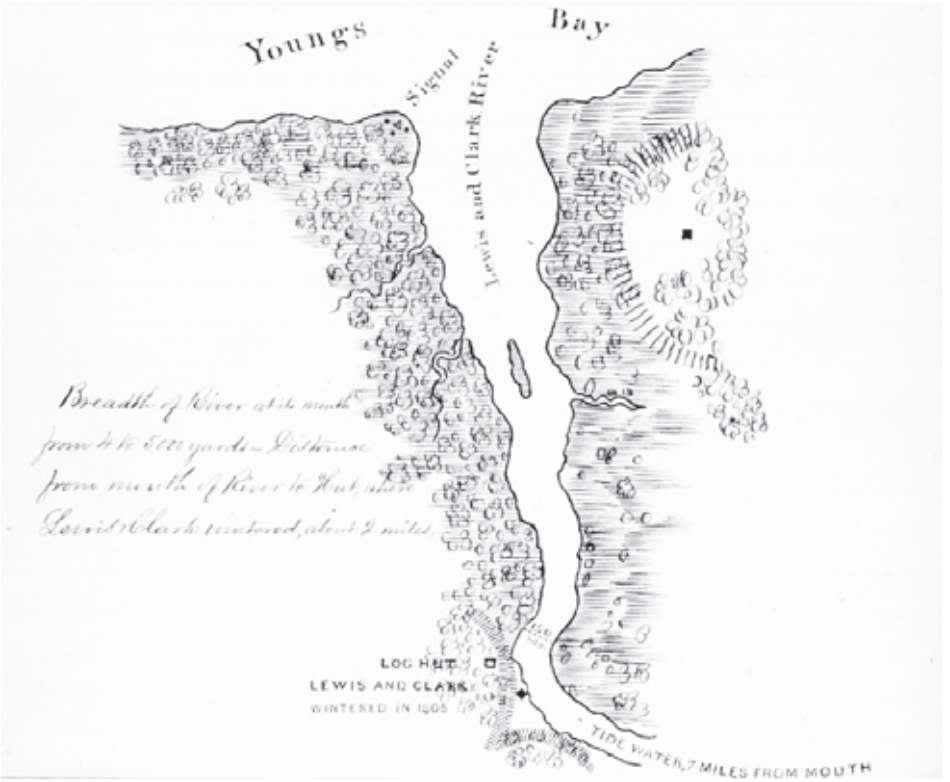


Figure 4.5 – Through much of the 19th century, Fort Clatsop continued to serve as a landmark, even as it rotted away into oblivion and its last surface remnants cleared to make way for farming in the mid-19th century. Here, a mid-19th century field survey map continued to reference the site, in spite of few recognizable surface features by this date. Image courtesy Oregon Historical Society.

journals suggest that both captains worked hard to maintain morale at the fort, which was continually undermined by fleas, poor diet, sickness, the hard labor and challenging conditions of their preceding months on the trail, and the nearly incessant winter rains. To cite one of many examples, in a December 28, 1805, journal entry, Clark remarked that "*york [is] verry unwell from violent Colds & Strains Carrying in meet and lifting logs on the huts to build them... rained all day moderately without intermition*" (in Moulton 1990: 140). Though the group was originally intending to depart for home on April 1, 1806, an excitement for home, coupled with growing fatigue with the discomfort of the fort, prompted the group to set off a week early, on March 23, 1806 (Cannon 1995). The journals, as well as local oral tradition, agree that the captains gave Coboway medals upon their departure and formally transferred to him ownership of Fort Clatsop: "*upon their departure gave the Fort to*

Figure 4.6 – Members of the 1899 expedition from the Oregon Historical Society stand on the former Fort Clatsop site. They include Silas Smith, grandson of Lewis and Clark's host, Clatsop Chief Coboway. The expedition was guided to the site with the assistance of the resident Shane family, who homesteaded the site, clearing some of the fort's last wooden remains, and P.W. Gillette, a former homesteader from the opposite shore of Lewis and Clark River. Identified in this manner, the fort location was later used for the construction of the replica that is the centerpiece of today's Fort Clatsop sub-unit of Lewis and Clark National and State Historical Parks. Photo courtesy Oregon Historical Society.

Chief Cobiway of the Clatsop tribe, who lived here from time to time" (Brallier 1957; Moulton 1990). The members of the Corps, not having enough canoes to make the return trip and finding the Clatsop unwilling to trade for one of theirs, took a canoe *"in lieu of 6 Elk which they Stole from us this winter &c"* (Clark, in Moulton 1990: 428).[13] In recent times, both the Clatsop-Nehalem and Chinook tribes have held ceremonies—linked loosely to the Lewis and Clark bicentennial—involving a traditionally carved canoe being symbolically returned to their respective tribes to compensate for this loss.[14]

5 The Rise and Fall of Empires on the Columbia-Pacific

Native Nations and the Fur Traders of the Early 19th Century

The history of Astoria and the larger Columbia-Pacific region has been shaped in no small part by the circumstances of the fur trade. Indeed, when considering the two-century history of Euro-American settlement on this coast, it is important to recall that the first quarter was played out within the context of the fur trade. And while for two decades almost all of this trade was carried out by passing ships that left little permanent imprint, the arrival of permanent land-based trade, with forts at Astoria and beyond, would reshape the human and natural landscape in profound and lasting ways. From the Pacific Fur Company's founding of the fur trading post known as Astoria in 1811, to the consolidation of American claims in the late 1840s, fur trading empires dominated the coast. Non-Native peoples became a permanent part of the region's cultural geography, and interethnic ties sustained both Native and non-Native economies. The communities that emerged on the banks of the Columbia-Pacific were comfortably, even enthusiastically, multi-ethnic, and interethnic families were commonplace—points too often forgotten in retellings of regional history. And, like the historical events that preceded and followed this period, many critical moments pivoted on places now within the management of the Lewis and Clark National and State Historical Parks.

In many respects, the great transformation of the Columbia-Pacific began in 1811, with the arrival of a single ship and an overland expedition, converging at Astoria almost simultaneously.[15] Consisting of fur traders and associated staff, these men were representatives of the newly-formed Pacific Fur Company. Founded by John Jacob Astor, a German-born and omnivorously capitalist New Yorker, the Pacific Fur Company was one of several new American operations spawned by the investment interests of Northeastern businessmen. Operating fur stores and shipping facilities in New York, Astor was well aware of the booming trade in otter and beaver on the Northwest coast. He had served as an importer of furs obtained from the Montreal-based North West Company, which he resold on the American and European

markets at a considerable profit. Tariffs and international frictions between the United States and Britain frequently complicated his operations, however, causing supply interruptions that idled his workers and cut deeply into his profits.

In response, Astor decided to incorporate fur trading into his operations, allowing him to have a more direct hand in controlling fur supply while also circumventing international barriers to trade. In 1808, he founded the American Fur Company, a holding company with subsidiaries each focused upon different fur-trading regions and products, allowing Astor to tap into regions and markets previously dominated by British Canadian interests. Yet Astor was eager to recruit experienced fur traders, and had few qualms hiring men from the British fur trading companies to achieve that end. Recruiting labor from the North West Company in particular, Astor determined to develop his own trading depot on the west coast, creating the Pacific Fur Company with outside investor support in 1810 as a subsidiary focused on the lower Columbia River region. (There is evidence to suggest that some portion of the Astor Expedition leadership operated under the impression that the North West Company was a partner in the Astor enterprise.) Mobilizing the assets of this new Company, Astor sent an overland expedition, the Astor Expedition (1810–12) to the mouth of the Columbia—the first such American expedition since Lewis and Clark. There it was to be met by a supply ship, the *Tonquin*, which would rendezvous at the mouth of the Columbia in 1811 with all the supplies needed to build a permanent trading post.

The *Tonquin* left New York in September of 1810, an American ship with a largely British crew. The ship passed around South America, traveling then to Hawaii—anchoring at Kealakekua Bay, the exact spot where Cook died decades before and a perennial stopover point for fur trading ships that followed. Here the crew traded for livestock and recruited Native Hawaiians to join them. Arriving at the Columbia bar in March 1811, the notoriously caustic captain of the *Tonquin*, Lieutenant Jonathan Thorn, demanded that members of the crew attempt to cross the bar in small boats, in order to find a channel suitable for the ship. After three failed attempts in the rough surf, resulting in the loss of three boats and no less than eight crew members, the crew identified a suitable channel and the *Tonquin* crossed to safety. Among the crew members who were lost was a Hawaiian man, who was buried where one of the boats containing his body had come ashore. His fellow Hawaiians dug a grave in the sand of the beach on the northern end of Cape Disappointment, a place that has since been known as "Waikiki" in honor of their homeland.[16]

Arriving on the waterfront of what is today Astoria, the crew unloaded building supplies, livestock, and other provisions. Construction of a permanent fort, "Astoria," commenced almost immediately in a small clearing—probably a Native American campsite of some kind. In June, the *Tonquin* departed for Nootka to trade for furs, leaving the permanent Astoria crew behind. En route, Thorn stopped at Clayoquot Sound, where he accosted prominent Nuu-chah-nulth chief Wickaninnish in a dispute over fur prices, prompting an attack that left the ship in smoldering pieces, and the crew likewise; the one survivor was Lamazee (George Ramsay), a half-Clatsop (or half-Chinook) interpreter who found his way home to the lower Columbia to inform the fort's inhabitants of the *Tonquin's* fate. A land party led by longtime North West Company employee David Thompson arrived a month after the *Tonquin's* departure, being greeted enthusiastically by his former colleagues now living at the fort in spite of his expedition's British backing. The land-based Astor Expedition, under the command of William Hunt, successfully passed through the interior Northwest, arriving at the fort by the following January (Gibson 2001; Seton 1993; Bancroft 1890; Franchère 1851; Irving 1836; Ross 1832).[17]

Figure 5.1 – An idealized image of the fort at Astoria, as it appeared in 1813, situated in a modest clearing and surrounded by a stockade. From Franchere (1854).

In addition to building and organizing the fort, the Astorians set about building the trading system with local tribes that would come to define the lower Columbia fur trade for decades. As experienced former North West Company employees, the

Astorians appreciated that in order to succeed they would need to tap into, and in some ways co-opt, Native trade networks. In a quintessentially British pattern, they did not seek to obtain furs independent of tribal societies, but to foster the "investment" of Native leadership and labor in the enterprise. Such investment compelled them to supply furs through their existing hunting territories and intertribal trade partners. Furthermore, stakeholders would wish to support, rather than undermine, Company interests. The residents of the fort purchased furs from surrounding tribes, loading them into a warehouse within the fort that would repeatedly be unloaded onto ships. The ships, in turn, brought an array of trade goods that were stockpiled at the fort to exchange with Native people. While furs were sometimes obtained during traders' visits to villages, an increasing proportion of the fur trade was carried out at a fort store, where Native traders came and exchanged furs for a growing cornucopia of imported goods. A stockade and blockhouse were constructed for defensive purposes, but with time, became increasingly irrelevant to the fort's security. It was the tribes' eagerness to trade coupled with their growing social ties to the fort community that proved the best defense, more effective than any wood palisade could ever be.

Into this context stepped Concomly, once of the most skilled traders of his generation. Identified by Lewis and Clark as the second-ranking Chinook chief during their stay in 1805-06, Concomly only increased in rank and status in intervening years (Moulton 1990). In their first days on the lower Columbia, two of the leaders of the Astoria party, Duncan McDougall and David Stuart, visited Concomly in Middle Village to introduce themselves and initiate what would become a golden era of interethnic trade. In chiefly style, Concomly fed them well. When their boat capsized on their paddle back to the *Tonquin*, Concomly rescued the party from the cold water, gaining a sort of cachet that endured for years to come. (During these early visits, the Astorians also visited the villages on the south side of the river, including *"the natives who occupy Point Adams, who are called Clatsops [and] received our young gentlemen very amicably and hospitably"* [Franchère 1967: 44]).

Leading from his Middle Village home, Concomly became an increasingly prominent presence at the fort, organizing vast shipments of furs obtained by the Chinook both directly by hunting, and through the sprawling tribal trade networks maintained before Europeans came to the Columbia. Under Concomly, there was a consolidation of the power, influence, and identity of certain Chinookan peoples, fueled by their unique position relative to the Astoria traders and by the unique imported goods that flooded the region through their fort.

Concomly represented himself to Astoria's traders, and the ships that visited their fort, as the representative of not only the Chinook proper, but most other lower Columbia tribes. Meanwhile, he represented himself to Native peoples of the region as the principal intermediary to the fort. In this way, he became an adept middleman, profiting from a sizeable portion of the early exchanges between Astoria and area tribes. (Fur traders, for their part, often tried to overcome the monopolistic vision of Concomly by reaching out to other tribes and exploiting divisions between them.)[18] In time, Concomly would marry his daughters into the non-Native fur trading community, forging relationships of unique depth (and the many descendants of these marriages still inhabit the region today). While the rising affluence of certain chiefs and villages at times had destabilizing effects in the balance of power between tribal communities, which the Astorians and their successors sometimes sought to counterbalance, it was generally in the traders' interest to have these leaders maintain positions of great prominence. They could thus marshal the vast resource wealth of the Northwest in a manner that would profit the new traders.[19]

Meanwhile, other leaders watched Concomly's ascendance with what seems to have been a mixture of enthusiasm and concern. On the south side of the river, the Clatsops led by Coboway, his successor Tostom, and secondary chiefs, also played an active role in the Astoria trade from the village complex in modern-day Fort Stevens, sometimes collaborating with, and sometimes chafing under, Concomly's growing influence. (Tribal oral traditions recounted in the Hussey [1967] report that a large rock promontory stood atop the hill above Fort Columbia and was prophesized to be linked to Concomly's power. As long as the rock stood, it was said, Concomly and his kin would reign in the region. Clatsops from the opposite side of the river were reported to have paddled over to the Fort Columbia point in the night, toppling the stone into a ravine, where it is reported to sit today.)

Matters of intertribal power relations aside, all tribes of the Columbia-Pacific region played an important role in the land-based fur trade—sometimes independently and sometimes with Concomly as their intermediary. Through this frenetic trade, Chinook, Clatsop, and other tribes of the immediate area acquired an unprecedented diversity of trade goods—blankets, beads, tools, guns and ammunition, fine china, and any number of other goods—that served to display and reinforce the prominence of Columbia-Pacific tribes within the larger Pacific Northwest. Together, the tribes of the lower Columbia and the Astorians initiated a period of sometimes awkward mutual interdependence that would persist for decades to come.

The fur trade frontier on the lower Columbia was a place of surprising ethnic diversity, reflecting a variety of sometimes awkward alliances meant to both reduce the threat of conflict and to give the North West Company and Hudson's Bay Company (HBC) unique access to tribal trading partners. Interethnic marriages were part of the fur trading experience from long before the arrival of Europeans on the lower Columbia River. On the lower Columbia, the success of fur trading operations was often contingent in no small part on the alliances created by fur traders' marriages of Native women. Kinship allowed traders to pass from "outsider" status to "insider" status almost instantaneously. Marriages into tribal families, especially the families of prominent leaders, opened up a world of trade opportunities to the fur trading companies in this ethnographic context, in which familial ties insured an "inside track" when trading with the woman's home community. Thus, many—though by no means all, or even a majority—of the women who married into the fort communities were from high-status families.[20] Visiting the territories of the women's tribes to seek furs, the Companies could receive special dispensation, the hospitality afforded esteemed guests, and preferential treatment relative to any competitors—such as the Americans visiting by ship or sometimes building temporary forts—who might seek to trade there. (American venture capitalists did attempt to build small operations on the lower Columbia during the height of HBC influence; most notable was the Nathaniel Wyeth party, who attempted to establish their own fur trading posts in 1832 and 1834, failing both times due in no small part to the tactical advantages of the HBC.)

Native women, with their knowledge of tribal languages and territory, were an indispensable source of information to HBC traders too. With women married into the fort community, there was a greater opportunity for diplomatic relationships with the woman's home community, and a reduced chance of violent attacks from her countrymen both at the fort and while on trading expeditions. There is ample evidence that the North West Company and the HBC sought to induce young men in their service to marry into the Chinook, Clatsop, and other local tribes—not always a difficult task as single men were stationed for years at a time. Meanwhile, the tribes of the region—accustomed to strategic inter-village and inter-tribal marriages for similar purposes—fully understood and often embraced the idea of having young women marry into the fort communities.[21] Women from multiple tribes were clearly part of the Astoria community, and dwelled within the walls of the fort.

There were not only Chinooks, Clatsops, and other tribes from the immediate area represented at the fort. There were also tribes that gathered with these Native hosts to fish and trade, many of whom came to trade with Chinook and Clatsop villages

with an "inside track" to the fort, or to attempt to trade with the fort directly. Oral traditions of long paddles to Fort George from distant Native communities are still found among the region's tribes today.[22] There were also slaves. The practice of Native slavery brought to the vicinity of the fort a pronounced diversity of tribal members who had arrived on the lower Columbia through a vast slave raiding and trading network. Many Chinookan people of high status held slaves, obtained especially through trade with other tribes along the coast and in the Northwest interior—Shasta, Achomawi, Quilleute, Yaquina, and others, who were just a sampling of those reported as slaves on the lower Columbia. Alexander Ross commented on the women he saw arriving to trade in the early days of Fort George:

"Slaves do all the laborious work; and a Chinooke matron is constantly attended by two, three, or more slaves, who are on all occasions obsequious to her will. In trade and barter the women are as actively employed as the men, and it is common to see the wife, followed by a train of slaves, trading at the factory, as her husband" (Ross 1849: 92).

Once Chinookan women and fur traders began to marry, these slaves were then owned by multiethnic households, sometimes living in or immediately beside the forts.[23]

The ethnic makeup of the Company employees was similarly complex. In the early years of the North West Company and HBC, most of its European employees were Scottish, and many of these men hailed from the Orkney Islands. Over time, as the Companies evolved, they maintained an English and Scottish-born managerial staff, such as Astoria's Alexander Ross and Alexander MacKay. In the HBC, they had long maintained a mixed employee population of lower-class British and French-Canadian men, as well as Native peoples. To some degree, the organization of the Company recapitulated the class structure of contemporaneous British society. French influences continued to grow, however. By the time the fur trade had arrived on the lower Columbia, the larger industry was increasingly centered on Montreal and Quebec, with the North West Company employing English or Scottish managers and French-Canadian voyageurs serving as the principal field staff.

In the consolidated Hudson's Bay Company, the administrative culture was decidedly British: duties and status were differentiated by race, and administrative positions, divided among white employees, were shaped by preexisting class distinctions to no small degree. In this new Company, the men of the British Isles were disproportionately represented in the fort's Officers and clerks. These men

commonly married Indian or Métis "half-breed" women. The lower-status "employees" or "servants" of the fort were more commonly French Canadian or Métis, often descended from previous generations of fur trade employees who had intermarried with Native women. "Laborers" or "canoemen" who were temporarily employed for specifics tasks often consisted of local Indians, Iroquois and other eastern Indians, French Canadian, Métis and—by the time Astoria was founded—Native Hawaiians.[24] While the hierarchical organization of the Company thus still recapitulated British society, it did so within an increasingly multicultural milieu, with race and class clearly defining one's position and one's potentials within the Company in a way that might trump the merits of individual employees. It is clear that Company officers maintained strict control over some aspects of daily life and often punished transgressions of lower-status employees severely. The manner of punishment reflected not only employment relations, but the larger relations of race and class which served as the context of Company employment.

While the North West Company and HBC were eager to trade with local tribes, they were reluctant to hire them for anything more than temporary assignments, fearing their local and tribal loyalties might supercede loyalties to the Companies. For this reason, the Companies hired Native labor taken from distant lands, who maintained no local loyalties aside from loyalties to the Company. For example, prominent among the workers at Astoria, and later Fort Vancouver, were Native Hawaiians. Detours to the Hawaiian Islands had been commonplace from the beginnings of the fur trade, as a resupply point and minor trade outpost visited during the monumental ship journeys between the Northwest, Asia, and eastern North America—Cook's terminus at Kealakekua Bay being an especially popular place (Corney 1932; Bishop 1967). Within a decade of Cook's journeys, Native Hawaiian laborers were being recruited as labor on ships, both British and American, traveling on fur trading expeditions between the Pacific Northwest, Hawaii, and China.

Thus it came to be that Native Hawaiians, including the young chief named Attoo from the island of Niihau, were on board Robert Gray's ship the *Columbia* when it made history as the first foreign vessel to enter the lower Columbia (Bona 1972). Roughly one-dozen Native Hawaiians were among the Astorians who arrived at the mouth of the Columbia River in 1811 aboard the *Tonquin* and contributed to the construction of Fort Astoria. A small group of Native Hawaiians were involved in fur trade from this outpost, becoming important to the North West Company operations throughout the region. The men who were employed on the lower Columbia at this time included a few of the men who would arrived on the *Tonquin* in 1811, including Naukane or "John Cox" and Paul Poah. They also included James Coah, who had

arrived at Astoria in 1812, and Jimo, Frank Kanah (or Kanak) and Henry Bell Noah who arrived in 1814. The remainder appear to have arrived on a voyage of the *Beaver* in 1813 or aboard the *Columbia* in 1817—the latter ship bringing a reported 60 Hawaiian laborers to the lower Columbia. In time, the HBC established its own depots in the Hawaiian Islands, selling goods locally but also warehousing furs and other items to supply their vast intercontinental shipping efforts. By this time, Native Hawaiians were integrated into most of their major operations on the Pacific (They were, however, the only group to be formally quartered outside the protected stockade at Fort George.) (Barman and Watson 2006: 62; Bona 1972: 166).

On the lower Columbia, the Hawaiian men were widely admired as members of boat crews working in support of fur trade operations. Many fur trade journals make passing reference to highly competent boat crews of Native Hawaiians. Alexander Ross quipped that, on "water…they are as active and expert as the reverse on dry land" (Ross 1855: 193). These Hawaiian men were also seen as essential to the early defense of fort and fur trading brigades—especially in the early years of the land-based fur trade, when new tribal territories were being explored and relationships with many Indian communities were still tentative and uncertain. These Native Hawaiian men were often brought along on voyages to serve as guards or paramilitaries in support of fur trade operations. As Ross noted,

"They are submissive to their masters, honest and trustworthy and willingly perform as much duty as lies in their power…They are not wanting in courage; particularly against the Indians, for whom they entertain a very cordial contempt. And if they are let loose against them, they rush upon them like tigers. The principal purpose for which they were useful on Columbia was as an array of numbers in the view of the natives especially in the frequent voyages up and down the communication….on every occasion they testify a fidelity and zeal for their master's welfare and service…It was from this people that captains, in their coasting trade, augmented their crews in steering among the dangerous natives from Columbia River to Behring's Straits" (Ross 1855: 193-94, 293).

Also in their number were a number of Iroquois who, according to Alexander Ross (1855: 85) were "chiefly men from the vicinity of Montreal," who had originally been employed by the North West Company. The North West Company, at the time of the establishment of their Columbia basin operations, recruited labor most actively in a handful of Indian communities in close proximity to their Montreal headquarters. Many of the Iroquois recruits appear to have been associated with the Caughnawaga area, immediately across the Saint Lawrence River from Montreal. Other Iroquois

populations from the Oka and St. Regis communities, sitting a few kilometers' distance east and south of Montreal respectively, were recruited into Northwest trade as well (Jennings 1885: 71; Mackie 1997; Nicks 1980). These men were considered great assets to the Company, hunting, trapping and serving as boatmen. Many did not return home, but married Native or Metis women, staying in the Northwest permanently—often "on Indian reservations established in the United States from 1856 onward" (Lang 2008: 93).

Also among the fur traders, especially after the arrival of the HBC in 1821, were the Cree. The shoreline of Hudson Bay in Canada consisted significantly of Cree territory, as did adjacent lands of the Canadian interior east and west of the bay. The term "Cree" is generally applied to Algonquian-speaking people whose traditional territories have ranged from Atlantic Canada to the eastern edge of the Rocky Mountains in Canada. The Cree traded actively with the HBC beginning very early in that Company's history, and gradually took on roles as trappers for the Company. Simultaneously, for well over a century prior to the development of Astoria, the policy of encouraging intermarriage with native communities had been tested and developed squarely within the heart of traditional Cree territory. By the time the HBC ventured into the Pacific Northwest, Company employees included a population of Cree descendants who were, in some cases, more than fourth-generation descendants of the original cross-cultural marriages between Cree and Euro-Canadian Company employees. New Cree employees were being recruited constantly throughout much of the Company's operations north of the 49th parallel in the early 19th century, and some portion of this population was recruited to assist in the early development of operations in the Columbia District (Hale 1846; Lang 2008).

While succeeding at its commercial objectives in many respects, the fort at Astoria had turbulent beginnings. At the onset of the War of 1812, only a few months after the fort was constructed, British forces dispatched the sloop *Raccoon* to assert British claims to American holdings on the north Pacific coast, and to take possession of Astoria's assets for wartime "prize money." Before the ship arrived, however, Astor decided to sell his fort and other Pacific Fur Company holdings to the North West Company. (Displaced from his Northwest Coast operations, Astor would continue to operate ships along the coast, while developing his interests in other sectors, such as opium smuggling and real estate, the latter elevating him to great wealth and fame in East Coast circles [Ebeling 1998, Smith 1929].) Arriving at Astoria, meanwhile, the *Raccoon* found that the fort already consisted of a largely British crew working under the British-chartered North West Company. The crew carried

Figure 5.2 - A watercolor image of Fort George (also known as Astoria) during the British period of 1813-18. From National Archives of Canada, W.H. Coverdale collection of Canadiana. Image courtesy Wikimedia Commons.

out a small "possession" ceremony and rechristened the fort "Fort George" to honor King George III all the same. For the men stationed at the fort, most of them British subjects, the event was of minor and largely symbolic significance. In 1818, at the conclusion of the war, the Treaty of Ghent required the British to return their spoils of war to the Americans, including its former Pacific Northwest possessions, leaving the fort's status ambiguous. The United States sent a U.S. navy ship, the *Ontario*, to the coast to formally retake possession of the territory and of Astoria. Taking shelter on the eastern side of Cape Disappointment, the commander, Captain James Biddle came ashore with his crew, held a brief ceremony and nailed a plaque to a tree—an event that was largely ignored by the region's inhabitants—while also raising the American flag over the fort (Long 1983). Two months later, British officers on the HMS *Blossom* apparently conducted similar proceedings on the same spot at Cape Disappointment, admitting the transfer of "Fort George" back to the Americans but asserting continued British dominion in the territory.[25] The convention of calling the fort "Astoria," "Fort Astoria," or "Fort Astor" rebounded, and an American flag sometimes flew over this British fort, creating an existential basis for the joint national occupation of the Northwest that would follow (Hussey 1957; Elliott 1918a, 1918b).

In 1821, the HBC merged with the North West Company, effectively absorbing its operations and bringing with it a very different, hierarchical business culture. The arrival of the HBC on this coast was the realization of roughly 150 years of Company ambition, initiated when the Company was incorporated under a British royal charter in 1670 as "The Governor and Company of Adventurers of England trading into Hudson's Bay," with the aim of bringing the furs of North America to European markets for a considerable profit. Since its inception, the Company's operations had spread across the expanding frontiers of British North America, especially eastern Canada. Their arrival on the famously fur-rich Northwest coast, within shipping range of Asia, was a move of great strategic importance to the Company, making the North West Company merger a critical step in their global business strategy. Optimism about the Company's future abounded, and the value of shares in the Company soared in the early years of Northwestern operations.[26] The rise of the Company's fortunes in this distant corner of North America temporarily gave credibility to British territorial claims to the Oregon country and gave hope to those who envisioned British colonization of the region. However, for both of these ambitions—pecuniary and nationalistic—to be realized, the Crown and the Company had to proceed cautiously and strategically with the resident population of tribes in the region, building upon relationships established by the North West Company. Astoria staff were retained and even promoted within the new company, and trade relationships with area tribes did not appreciably change in the HBC's first year or two on the lower Columbia (Deur 2011).

Soon, however, the shortcomings of the Astoria fort became a source of concern to HBC officers and governors hoping to expand their presence in the Northwest. By early 1824, HBC Governor George Simpson ordered that the Company move from Fort George to Fort Vancouver—roughly 100 river miles inland. This was done as the HBC restructured their "Columbia Department" following Simpson's tour of the region in 1824-25, in order to make operations more efficient and to adapt to the changing realities of the Northwestern fur trade (Simpson 1931). Fort Vancouver was chosen for its strategic location relative to the developing fur trade of the Northwestern interior. By 1824, the sea otter population of the outer coast had been largely exhausted, and the supply of locally available terrestrial furbearers on the Columbia estuary and adjacent coastline was in abrupt decline. (Various lines of evidence suggest the decline of the kelp forests offshore and a resulting change in the nearshore ecology—an effect of the fur trade that has never been remedied.) Land-based fur trade was quickly eclipsing ship-based maritime fur trade. Thus, HBC leadership looked eagerly toward the Northwestern interior as a source of

beaver and other furs. By necessity, the HBC expanded its commercial operations into a widening sphere of tribal trade networks in the Northwestern interior, and Fort Vancouver sat at an advantageous intersection of the principal avenues of tribal trade running east-west along the Columbia River and north-south along the Willamette Valley and Puget-Cowlitz Lowland.

Simultaneously, food security was a critical consideration. While there were many reports of Fort George's general success in early agriculture, in truth agricultural potential was limited. Clearing the dense spruce-hemlock forest was no small task. After working all day chopping a single tree, Alexander Ross noted,

"it seldom came to the ground. So thick as the forest, and so close the trees together, that in its fall it would often rest its ponderous top on some other friendly tree…giving us double labor to extricate the one from the other, and when we had so far succeeded, the removal of the monster stump was the work of days. The tearing up of the roots was equally arduous… Nearly two months of this laborious and incessant toil had passed, and we had scarcely yet an acre of ground cleared" (Ross 1832: 73-74).

Clearings around the fort were understandably small. Crops were few in number, and often struggled in the small forest clearing housing the fort, with its acidic soils, long winters and north-facing slopes. Lacking large fields for grazing, livestock (except perhaps pigs) tended to suffer high mortality from cougars, bears, wolves and other predators while grazing the forest. For these reasons, traders had been largely dependent on the Clatsop and Chinook to acquire much of their food supply—salmon in particular. This created dependence on local tribes, undercutting not only the fort's security, but also the negotiating power of its traders who bargained with these tribes for each pelt arriving at the fort. At Fort Vancouver, in contrast, the land was relatively level and south-facing, with vast meadows cleared of forest by an apparently long history of Native burning. With its verdant fields and southern exposure, the site had agricultural potential arguably unsurpassed along the entire lower Columbia River shoreline, and was Fort Vancouver's most important strategic asset. So too, the fort was located on the north bank of the river, based on expectations that the south side might someday fall into American control.

As early as April 1824, visitors depict Fort George as largely abandoned, with most of its residents assisting in the construction of Fort Vancouver far upstream.[27] By April of 1825, all of the operations of Fort George had been moved to the new facility in what is today Vancouver, Washington, bringing all of Fort George's storage, trade,

and other functions to one centralized facility. Here, Fort Vancouver became hugely important in the region, the heart of the Columbia District and the central headquarters of a network of fur trading posts throughout modern-day Washington, Oregon, Idaho and British Columbia. Meanwhile, Fort George was largely unoccupied for the next four years, being used mostly for storage and as a depot for shipments moving up and down the river (Deur 2011).

In spite of the HBC's decision to vacate the Columbia estuary, the landmarks of the estuary remained of great importance to the Company's operations. For mariners entering and leaving the river, Cape Disappointment and Chinook Point (both Fort Columbia and Middle Village) remained the principal landmarks used to establish their bearings. Meanwhile, Cape Disappointment was commonly used as a lookout by men sent to watch for ships attempting to enter the river, or to see if winds and the bar were right for vessels attempting to leave (Hussey 1957). Indeed, once Americans started moving into the area, Chief HBC Factor Peter Skene Ogden spent a total of $1,000 of his own funds (later reimbursed by the Company) to purchase American claims to the cape. He did this so the Company could establish a trading post and a "pilot's lookout" at the site to aid in navigation—actions that anticipated the construction of lighthouses and other navigational infrastructure several decades later.[28] Meanwhile, the rotting remnants of Fort Clatsop, still occasionally used by Coboway and his family as an outpost, became a curiosity visited by traders traveling up and down the river en route to the forts—a kind of early historical tourism.[29]

While these changes in HBC operations were greeted with a mix of concern and enthusiasm by Portland Basin Chinookans, the move was understood as a potential threat to tribal trade interests on the estuary. Concomly worked to remain relevant now that he was skipped over by the shifting geography of the land-based fur trade, and worked to demonstrate to Chief Factor John McLoughlin and other HBC leadership that he was the preeminent leader of the lower Columbia who should yet be the conduit for regional trade. Concomly made several visits upriver to Fort Vancouver, often with flotillas of canoes mobilized as much for dramatic effect as fur-carrying capacity. Arriving at the new fort, Concomly was reportedly preceded by 300 slaves and, as reported by deSmet, "he used to carpet the ground that he had to traverse, from the main entrance of the fort to the governor's door, several hundred feet, with beaver and otter skins" (deSmet 1905: 443). This demonstration of his wealth and power had multiple audiences, both Native and non-Native—helping to inspire loyalty among his own people and commercial enthusiasms

among the Company officers. He thereby insured the continuation, and perhaps even the expansion, of his influence.

Indian-white relations on the Pacific Northwest fur trade frontier were surprisingly peaceful, aided by mutual economic interests and intermarriage. However a few exceptions mar this history of interethnic cooperation. One such incident took place in the Columbia-Pacific region. The HBC fur traders had a keen interest in developing binding relationships with the tribes as a means to economic ends, and yet were also wracked—especially in the 1810s and 1820s—by a sense of vulnerability and dependence on the tribes, who outnumbered Company staff by a vast margin. Clearly, the threat of violent attacks from the Indians was of great concern to HBC officers in the early years of Astoria and Fort Vancouver. The example of the 1811 *Tonquin* disaster was still fresh in the minds of many HBC employees, some of whom (including HBC Chief Factor, John McLoughlin) had adopted the children and married the widows of those killed in the conflict. Recognizing that even the perception of Indian troubles was a threat to their enterprise, the HBC employed a policy of what we might today call "massive retaliation," responding severely to any hostile act by the region's tribes in order to make a highly visible example of it. Clearly, attacking and razing entire villages was a retaliatory tactic employed by HBC employees throughout the Columbia District, and one of the most widely known examples occurred at the mouth of the Columbia (McLoughlin 1843b).

Figure 5.3 – Hudson's Bay Company Chief Factor, John McLoughlin, who oversaw the Company's operations on the lower Columbia River for most of its almost three decades of dominance in the region's fur trade. Image courtesy Oregon State Library, Salem.

When a ship called the *William and Ann* carrying HBC cargo and crews foundered in the surf at the mouth of the Columbia in 1828, sinking and killing all aboard, the Clatsop salvaged the cargo along the shoreline, as was their custom. Rumors surfaced that the Clatsop had killed survivors and John McLoughlin dispatcheda team from Fort Vancouver to recover property and make an example of the Clatsop. The team shelled the main Clatsop village in what is today Fort Stevens and burned it to the ground. While McLoughlin indicated in official correspondence that four Indians were killed, tribal oral tradition suggests that the attack killed many more residents of this village, as well as guests from other tribes (Deur and Thompson n.d.).[30] Only later did McLoughlin determine that there was no evidence of Clatsop murdering the crew of the *William and Ann* (though there was evidence that tribes who competed with the Clatsop for Company trade had been involved in the spread of the rumors). Still, in light of the *realpolitik* of the Northwestern fur trade, McLoughlin depicted this action as a strategic necessity. In his letter to the Governor and Committee of the HBC, dated August 13th, 1829, McLoughlin explained his actions. He noted that the Clatsops had not killed the crew but had obtained its cargo, and that the Company had to make an example of them for larger, strategic reasons:

"the Indians considered the [salvaged] property as ours…if we had not made a demand of it we would have fallen so much in Indians Estimation that whenever an opportunity offered our safety would have been endangered… our people [had] no alternative but to attack the Indians and act towards them in the manner they did" (McLoughlin 1829e: 41).

The Clatsop rebuilt what was left of their village, with no apparent retaliation against the well-armed Company—the Clatsops' longtime trading partners now stationed in Fort Vancouver. The HBC did not provide reparations, though McLoughlin's correspondence makes it clear he was ultimately convinced of the Clatsops' innocence in the matter of murdering *William & Ann* crew.

The lower Columbia generally, and Astoria and Fort Vancouver in particular, were gathering places for people traveling through the region by land and by sea. As such, the forts and villages at the river's mouth became vectors for diseases carried by people arriving by ship. With ship traffic arriving regularly, originating from ports in Asia, the Pacific Islands, coastlines throughout the Americas and the British Isles, a steady procession of diseases struck the lower Columbia from Robert Gray's arrival on, and it was probably a matter of time before a major epidemic came to the bustling trading center.

In the year 1830, that major epidemic arrived. This year brought a devastating sickness to the lower Columbia River that would radically and permanently change the regon's demographics. The "fever and ague" or "intermittent fever," as it was often called in journals of the time, is first reported at Fort Vancouver in 1830—the first major epidemic witnessed directly by non-Indians. Most sources concur that the disease was, in fact, malaria. While the specific path of introduction remains unclear, most sources acknowledge that the fort was likely its first point of arrival in the region. The American ship *Owyhee* is sometimes implicated in historical sources, though some authors suggest that the rumor of this ship's responsibility had been broadcast by HBC employees to undermine tribal confidence in their American competitors (Cook 1955: 38-39; Boyd 1999, 1990: 85-88, 1985: 112-145; Salleeby 1983).

The epidemic spread through the region from its lower Columbia core, ultimately appearing in the interior of Oregon and well into central California, continuing to plague the lower Columbia for much of the decade. Outbreaks rebounded each year—typically in the summer when mosquitoes rapidly spread the sickness along the marshy margins of the Columbia. Despite its geographically wide influence, the epidemic's effects were most lethal on the densely settled tidal reaches of the Columbia River. The demographic consequences of the epidemic for the Chinookan peoples of the lower Columbia were severe, while the personal, social and cultural consequences for tribal communities was horrific—a point on which there is regrettably little record reflecting the contemporaneous perspectives of the Native people themselves. Clearly, the loss of this scale—roughly 90 percent of the total population—from the ranks of any society would be apocalyptic and cause contractions and transformations throughout every aspect of community life.[31]

Among the major consequences of the epidemic was an almost immediate change in the relative size and influence of individual Chinook populations. The lower river Chinook—once the largest and most prosperous population in the region—were abruptly eclipsed in their scale and regional significance by interior tribes. As French explorer Eugene Duflot de Mofras observed toward the end of the epidemic, *"Upper Chinooks still number about 1,000 individuals. However, the Lower Chinooks, who a few years ago had nearly 100 huts, today do not exceed 300 persons. Malignant fevers have decimated entire villages"* (Duflot de Mofras 1937: 182). Concomly and many of his kin were among the dead. In 1830, HBC employee Francis Ermatinger reported of these lower river populations that

"we were visited by a most malignant intermittent fever some time ago, and of which we are not totally recovered yet. It carried off King Concomly with most of his subjects and

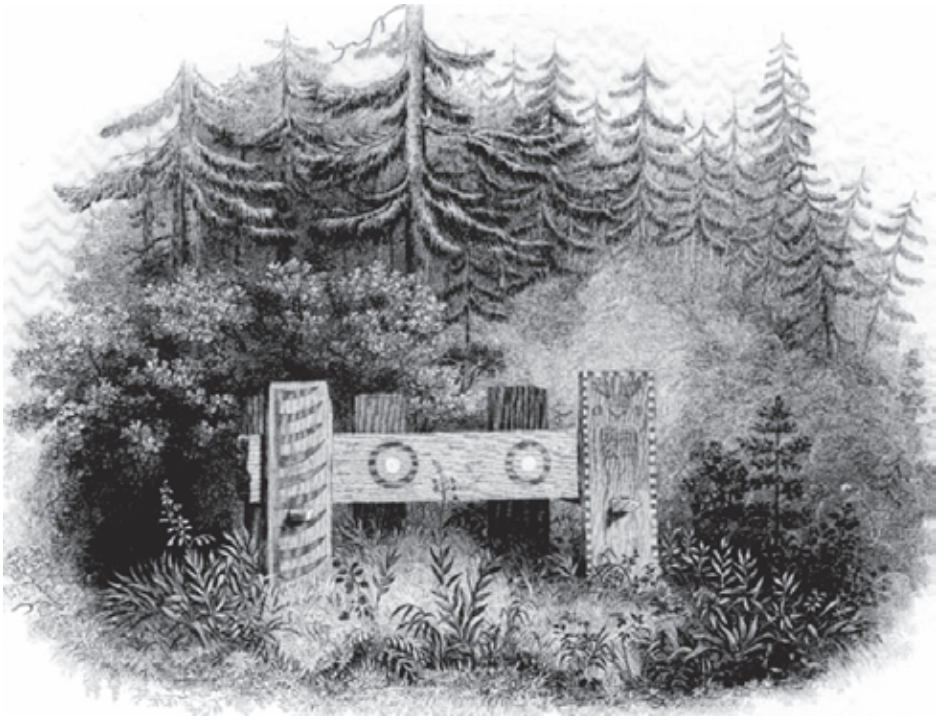


Figure 5.4 – Concomly's gravesite, as depicted by Alfred Agate of the Wilkes Expedition, in 1841. Concomly's death in 1830 came at a time of unparalleled suffering in the tribal communities of the region resulting from the arrival of diseases on ships traveling to the fur trading posts at Astoria and Fort Vancouver. A monument to Concomly, echoing the design of this burial, would later be constructed on Coxcomb Hill in Astoria. From Wilkes (1845).

those of the tribes about him. It is no unusual thing to see two or three dead bodies, in a short excursion along the river. Some of the villages were entirely depopulated" (in McDonald 1980: 140).

With the death of Concomly, the prominent chief of the lower Chinooks, along with many of his villagers and slaves—reducing Middle Village to a fraction of its former size—the Chinookan position in the fur trade was forever transformed.[32] To many, Concomly's death to malaria symbolically marked the "end of Indian social dominance on the Greater Lower Columbia," and reduced the lower Chinook villages to a position of relatively little influence on the economic and social life of the fort community (Hajda 1984: 46). As had been the case during prior epidemics, survivors regrouped in myriad villages along the coast. Other village sites were largely abandoned, becoming seasonal camps or burial sites where large settlements once

stood. Vast burial sites, hastily constructed by survivors, are reported in the area, some apparently dating from this period. Not far from the Salt Cairn site in Seaside, for example, early chroniclers mentioned a space of no less than an acre "almost covered with human bones and skulls," while similar, sprawling burial areas are reported on the Lewis and Clark River not far from Fort Clatsop (Gillette n.d.). At this point, the Chinook, Clatsop, and other peoples of the lower Columbia were becoming a minority on their own lands, and were no longer treated as either a strategic threat or a source of commerce by the HBC.

Reflecting these dramatic changes, as well as changes in the international operations of the HBC, the Company reactivated Fort George in 1830, expanding the fort's storage and depot functions for transoceanic trade. The Company also redeveloped a portion of the fort to serve as the base of operations for a growing salmon fishery and very small-scale lumbering operation—a function that the fort would maintain until the HBC departed in 1848. Fort Vancouver maintained an apparently lively and enduring trade selling salmon and lumber in Hawaii and ports around the Pacific served by the Company's Hawaii depots. Company employees, especially Native Hawaiians but also French-Canadian and Metis, shipped barrels of preserved fish to Hawaii and other destinations. Native Hawaiians caught, processed and barreled salmon. Though a small portion was consumed locally by HBC staff and visitors, most was shipped to Hawaii. Reeling from the effects of the epidemics, the Native communities of the lower Columbia, Chinooks and Clatsops alike, nonetheless supplied fish for these operations (Sylvester 1933: 360).

There was also a small wood milling operation at Fort George, maintained by the same employees who operated the fishery. Upstream, Fort Vancouver had maintained a large operating sawmill since 1828, largely supplied by Native Hawaiian as well as Métis and French Canadian labor, and it is likely some of the men who aided in the milling and shipment of lumber at Astoria first gained experience in that operation. As with salmon, most of the lumber was shipped to Hawaii for sale or redistribution throughout the Pacific. In addition to supporting the Hawaiian trade, ships occasionally arrived on the lower Columbia from Spanish California and Mexico, seeking lumber to build missions and other structures on their northern frontier (McLoughlin 1829, 1841; Martin 2006).

The mouth of the Columbia remained a major thoroughfare, visited by most prominent travelers of the day who entered the Columbia Basin. Explorers passed through and commented, if briefly, on what they observed at the mouth of the Columbia, noting key navigational landmarks such as Cape Disappointment,

Chinook Point, and Point Adams, as well as the modest fort community in Astoria. Among those explorers were members of the United States Exploring Expedition under Commander Charles Wilkes, one of the United States' great journeys of exploration. Attempting to enter the Columbia, the Wilkes Expedition wrecked the U.S.S. *Peacock* off of Cape Disappointment on July 18, 1841. A faulty chart of the river entrance doomed the *Peacock*. Following proper bearings on Cape Disappointment and Chinook Point along channels that had shifted or been improperly surveyed, the ship became trapped in shoals that were covered in breakers. All of the *Peacock's* crew escaped because of a rescue organized by an African-American servant, John Dean, who had joined the crew while anchored on Puget Sound. From the bluff of Cape Disappointment, Dean recruited a boatload of Chinooks, led by a pilot called "Old George," who directed the schooner over the bar. The *Flying Fish*, another Expedition ship, joined the castaways at the first landing beach north of the cape, finding the crew safe but a sizeable portion of the expedition's records lost to the sea (Philbrick 2003).

Undeterred by the wreck, Wilkes had his men complete a chart of the lower river and the first report on the rivers and harbors of the Pacific coast two years later (in 1843) as a precursor to work by the United States Coast Survey. Though the findings of the Wilkes Expedition, including the five-volume *Narrative of the United States Exploring Expedition*, were well received and widely hailed as a scientific achievement of national importance, Wilkes was court-martialed upon his return—in part for his loss of the *Peacock* (Tyler 1968; Hussey 1957). An African-American cook from the *Peacock* named James Sanler (also called "De Sauls," "DeSaule," "Santos," or "Saul") decided to stay, building a shack on Cape Disappointment and residing there until 1846. The only remnants of the rescue visible at this site in 1858 were ovens used by the encamped crew. [33]

The objectives of the Wilkes Expedition to map the mouth of the Columbia and report on its natural resources, was only part of a larger American effort to assert claim to Oregon Country. As part of this effort, the United States formally assigned a man named Elijah White to the position of Oregon "Sub-Indian Agent" in 1842, one year after Wilkes' journey. White was instructed to begin negotiating American treaties with tribes preemptive of proposed American expansion into the region. White attempted to negotiate treaties with the Cayuse, Nez Perce and others, seeking to carve out an association with that would depart from their long and relatively close relationship with the HBC and British subjects. Whereas the HBC had maintained a cautious approach to the large Native nations of the region, White introduced concepts such as forced relocation and reservation development to area

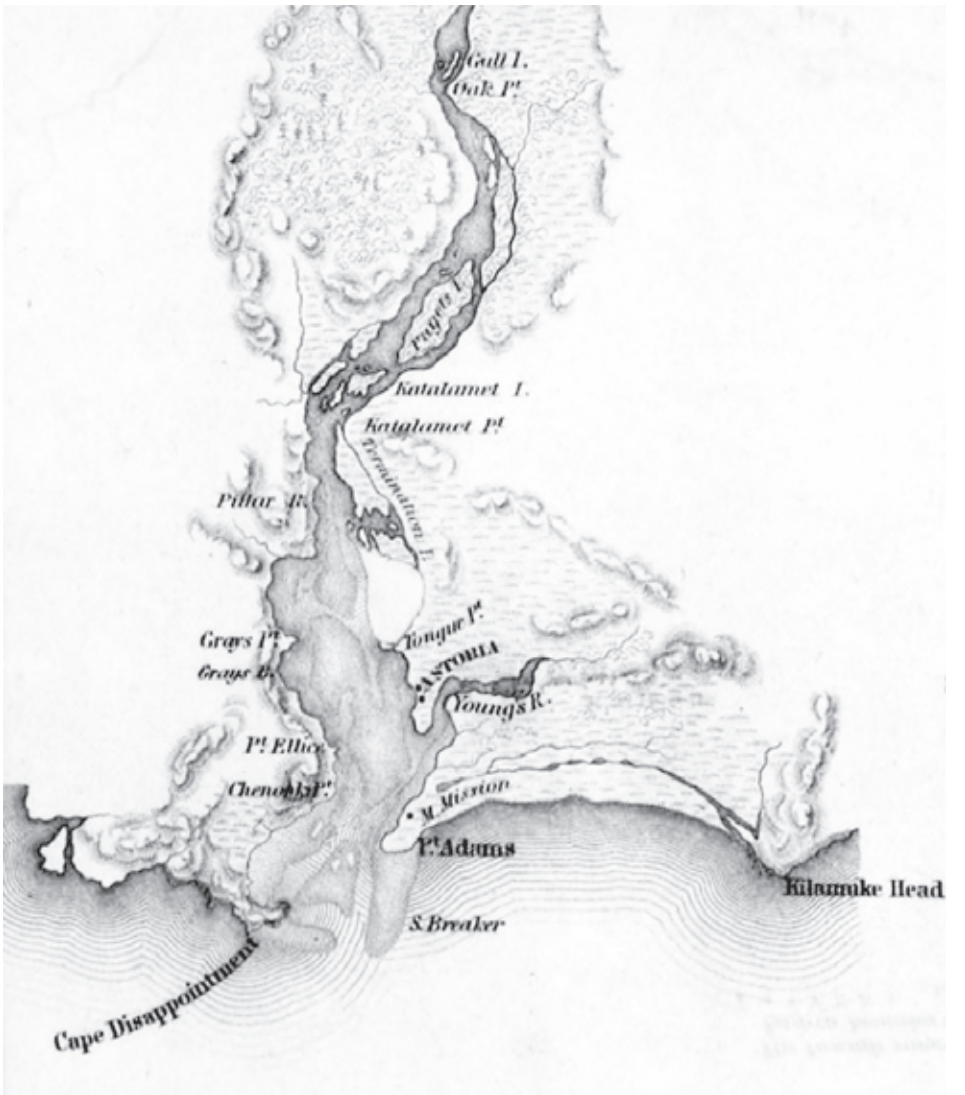


Figure 5.5 – The mouth of the Columbia River, as mapped by the Wilkes Expedition in 1841. By this time, the Methodist mission sat near the Clatsop village on Point Adams and Astoria merited two 'dots' on the map, indicating some modest growth beyond the original fort. From U.S. Exploring Expedition, 1845. *Map of the Oregon Territory by the U.S. Ex. Ex., Charles Wilkes, Esqr., 1841*. Philadelphia: Lea and Blanchard. Image courtesy Wikimedia Commons.

tribes—strategies that would have been unthinkable and unnecessary during the fur trade, but were designed to accommodate America's vision of regional agricultural reoccupation. There is some indication that White's introduction of these concepts later contributed to nationally significant wars with those tribes, as well as the

Whitman Massacre (Deur 2011; Bancroft 1890: 253-96). John McLoughlin would send repeated protests of White's interference to HBC and American authorities, noting that it was both bad for HBC business and had the potential to destabilize interethnic relations throughout the entire region. (Some years later, as will be discussed elsewhere, White attempted to found a community atop Cape Disappointment.) Fort Vancouver reinforced their long-neglected palisades, and modest repairs appear to have been made to the defensive capacities at Astoria—not only for defense against potentially hostile Americans, but also against tribes that were growing ever more restive due to American threats and incursions (Deur 2011).

British claims on the Northwest becoming ever more tenuous, the HBC intensified their efforts to harvest all available furs—wringing the last economic value from the land, while also reducing opportunities for American competition and incentives for American immigration. The effects were particularly destructive on the beaver population, which was nearly extirpated over large areas of the Northwest, especially in present-day northwestern Oregon and southwestern Washington. This "scorched earth" policy has been termed a kind of "ecological warfare" intended to produce a "fur desert" in Oregon and Washington (Muller-Schwarze 2011: 162).[34] Some 3,000 or more beaver were harvested per year through much of the HBC period of occupation on the lower Columbia; in the final years of HBC occupation, those numbers declined precipitously, reflecting the relative scarcity of the species. In practice, this instigated a change in the broader riparian ecology of the lower Columbia region, probably resulting in the first measurable adverse effects on salmon (Muller-Schwarze 2011).

As the first American wagon trains arrived from the East, there was growing talk of open war between Britain and the United States over claims to the Pacific Northwest. With their close relationships with tribes, interethnic marriages, linkages to the Catholic Church, and British loyalties, HBC employees were widely seen as alien occupiers who would need to be ousted before American settlement was secure. By 1845, spies working on behalf of the British Crown, Henry Warre and Merwin Vavasour, even explored the lands of the lower Columbia to assess the loyalties of Chinookans and other peoples to the HBC in the event they would need to be enlisted in a war against the United States. Consulting with HBC Governor, George Simpson, they proposed taking Tongue Point, Point Adams and Cape Disappointment by force, and building armed fortifications on these promontories to repel American ships (Warre and Vavasour 1909; Warre 1848).

Figure 5.6 – Rounding Cape Disappointment by ship, as shown in a watercolor by Henry Warre in 1845. Serving as a British spy on the lower Columbia River during the tense border negotiations between his country and the United States, Warre and his fellow traveler Merwin Vavasour would propose British fortifications atop several local landmarks, including Cape Disappointment–shown here with markers on its summit. Image courtesy Oregon Historical Society.

"For the protection of British interests on the Columbia and N. W. Coast...it would be highly important to get possession of Cape Disappointment, and to erect thereon a strong battery, which would effectually command the mouth of the Columbia River, as unless the southernchannel may have been found practicable since I was there, ships entering the River must pass so close under the Cape that shells might be dropped almost with certainty upon their decks from the battery...

"On Point Adams I would place a battery of 5 guns, having its gorge defended by a blockhouse, similar to that for Cape Disappointment. These points being covered with immense timber, which would require a length of time to remove, open works could not easily be formed...

'For the occupation of Tongue Point, I would recommend a battery of heavy guns on the West side overlooking the ship channel, with a blockhouse or defensible barrack near its gorge...There are some other points on the north shore apparently offering good positions, such as Chinook point and Point Ellis" (in Simpson, et al. 1912: 149–50).

By the time Warre and Vavasour's proposals were being reviewed in London, the issue of Northwestern claims had already been settled. The passage of the Oregon Treaty in 1846 largely settled the boundary dispute between the U.S. and Britain,

sealing the fate of the HBC on the lower Columbia River. The Company began a slow-motion retreat, removing goods, personnel and facilities to other parts of their domain. A significant proportion of those people still in the service of the Company moved to Fort Victoria, in Victoria, British Columbia, becoming founding figures in the history of that province. Many others stayed, living in the community of Champoeg in the Willamette Valley, or integrating into the larger fabric of Pacific Northwest society—within white communities or Native communities, depending on their pigmentation and predilections. The comfortably multiethnic world of the fur trade gave way to the comparatively segregated world of the American agricultural frontier. The fort at Astoria was abandoned by 1849 with the final departure of the HBC, the lands formerly occupied by the fort gradually being reoccupied and redeveloped as part of the urban fabric of Astoria, Oregon. Meanwhile, the sea otter that had largely instigated the trade was nearly extirpated from this coast, and beaver would rebound only slowly over years—both animals' absence having broad effects on regional environments that arguably still affect fisheries and other human affairs today. Fur trading would never again be a major part of the economic and social landscape of the lower Columbia (Bancroft 1890).

Parenthetically, it should be noted that the year 1911, exactly a century after the arrival of the Astor party on the Columbia estuary, was of huge symbolic importance. It marked the end of the sea otter population that had precipitated the European scramble to the Columbia-Pacific. In that year, the last native sea otter seen on the coasts of Oregon and Washington was reported at Willapa Bay, mobilizing enthusiastic local hunters into the water in boats large and small. (Only many decades later would reintroduction efforts and population rebounds bring a rare "bachelor male" otter, swimming solo, to the Columbia-Pacific.) As the sea otter disappeared, so too did the empires that brought it very close to extinction. In that same year, over 2,000 years of imperial Chinese history came to an end with the Xinhai Revolution, while Mexico too was at the height of a violent revolution that sought to overthrow vestiges of old colonialism. Also in that year, an environmental treaty far ahead of its time was signed by the United States, Britain, Japan and Russia—on the verge of its own transformative revolution. The North Pacific Fur Seal Convention of 1911 called for an end to the hunting of the sea otters of the north Pacific, noting that after a century of frenzied commercial hunting, the entire species was approaching extinction (Vaughan 1982; Scheffer 1940).[35]

6 Reoccupying the Land

Settlers and the Formation of Agricultural Landscapes

The resettlement of the Columbia-Pacific region that took place throughout the 19th century was in many respects an agricultural occupation. Non-Native people had lived on the coast a few generations beforehand, but the settlers who arrived in Oregon and Washington during the mid-19th century possessed a fundamentally different vision of the landscape. Whereas fur trappers presented a transient presence, navigating Native communities and a relatively unmodified natural landscape, the people who now arrived in the Columbia-Pacific intended to settle extensively and permanently. They would transform the terrain to cultivate introduced crops. They would build enduring homes spread diffusely across the land. Of northwestern European stock, by and large, and primarily hailing from the American Northeast and the recently resettled Midwestern frontier, they came to the Northwest with particular, and largely unprecedented, expectations for making a settled life in the region. The horrible epidemics that nearly depopulated the land preceding their arrival gave a false impression that they arrived to an untrammeled "wilderness" that needed human occupation and husbandry to achieve its full potential. Though they did not build the agricultural empire they envisioned, and though many early horticulture experiments saw only ambiguous success, they did transform the landscape in pervasive and enduring ways.

The Native peoples of the region had, in many respects, managed plant communities in ways deemed horticultural. Evidence exists of burning and pruning of berry bushes to enhance their output, as well as the burning of prairies to foster production of bracken fern, camas, and other food plants. There was probably extensive planting and seeding of plant seeds and rootlets. Furthermore, the region's tribes engaged in abundant ceremonial prescriptions to ensure successful future harvests. The agriculture brought to the region by European peoples was certainly not novel to Native peoples and, ironically, the success of the introduced agricultural practices was in some manner aided by landscape-level cultivation practices of aboriginal origin. These practices opened clearings that would be occupied by non-Native settlers in the 19th century (Deur and Turner 2005; Deur 1999).

From the beginnings of the fur trade, introduced agriculture transformed the Columbia-Pacific landscape. Journal accounts are clear that ships' crews planted small and experimental gardens at the mouth of the Columbia, in the hope of cultivating a few familiar crops as they passed through on later voyages. The earliest reported case was in September 1795, when the English ship *Ruby* anchored in Baker Bay—just east of, and interior to, Cape Disappointment—and crew members planted beans, peas, celery, and radishes on a small island there. Returning to the lower Columbia on their return voyage, they were able to harvest some modest crops, an event claimed as the "first horticultural enterprise in the Pacific Northwest" (quoted in Lucerro and Hobbs 2004: 14). A variety of other temporary gardens, planted to support the maritime fur trade, were reported on the Columbia in the years that followed. In 1810, the Boston-based Winship brothers attempted to develop an agricultural outpost to support visiting fur trading ships and their own anticipated fur trading post. Finding arable and unoccupied land to be rare near the river's mouth, the brothers developed their gardens upstream in the vicinity of Clatskanie. Their operation did, however, fail, due to the combined effects of riverbank flooding and tribal opposition (Jerzyk 1940).

The gardens planted at the Astorians' fort beginning in the spring of 1811 produced modest crops, but only with considerable difficulty and months of fighting the oppressively dense spruce-hemlock forest. Raising livestock brought mixed success there as well, though pigs thrived, becoming so numerous that fort residents went on pig hunts simply to cull the herd. A few cattle survived the region's large predators long enough to supply beef, and the fort even kept a few milk cows. Yet after a decade in use, the fort was largely abandoned. This was due in no small part to its lack of agricultural potential in the dense, damp forests of the coast, and the strategic disadvantages placed on fort staff by their dependence on Clatsop and Chinook peoples for staple foods. The HBC eagerly moved their operations to Fort Vancouver where vast open fields and floodplain soils facilitated a thriving agricultural enterprise (Hussey n.d.; Deur 2011).

The agricultural occupation that would commence at the end of the fur trade era was, however, quite different in scale and effects. Its footprint would be much larger and more geographically widespread, involving large numbers of settlers arriving and acting independently across swathes of Oregon Territory, clearing the land with an expanding range of methods and technologies. In the new era of settlement, too, land was acquired through legal mechanisms. These mechanisms were in place to encourage American emigration to Oregon Territory and to place sizeable portions of the territory into private ownership to facilitate settlement and development,

including non-agricultural development. By 1843—the effective beginning of appreciable American emigration along the Oregon Trail—the Oregon Territorial legislature made arrangements for land claims of up to 640 acres for married couples or 320 acres per individual. These claims did not have legal standing in U.S. or British courts, but provided a legal context for early settlement in places like the Willamette Valley.

However, it was the subsequent Donation Land Claim Act and the Homestead Act that completely transformed the Northwestern landscape, allowing for an effective reoccupation of the land by settlers hailing primarily from the American East. On September 27, 1850, President Millard Fillmore signed the Donation Land Claim Act, commonly referred to as the Oregon Land Law, authored by Oregon Territory's first congressional representative, Samuel Royal Thurston. This law allowed white and half-Indian citizens over the age of 21 to select claims on unsurveyed lands in Oregon Territory. The law was later extended to California and to Washington Territory, which was carved from Oregon Territory in 1853. Under the terms of this law, homesteaders could obtain 320 acres, and married couples 640 acres in total. Continued ownership of the claim required that the owner "prove up" the land by demonstrating "the fact of continued residence and cultivation" within 12 months of its initial survey. The law served to promote homestead settlement of Oregon Territory and to create an unassailable American presence in the West. In this respect, the law was a success. When the law expired in 1855, roughly 30,000 new American settlers had entered Oregon Territory, and roughly 7,000 individuals held legal claims to 2.5 million acres.

Oregon and Washington congressional delegations petitioned for extensions of the act to foster additional settlement in the years that followed, and ultimately, President Abraham Lincoln signed the Homestead Act on May 20, 1862. This law, which largely expanded the spirit of the Donation Land Claim Act in Oregon and Washington Territories, enabled any U.S. citizen, or intended citizen, who had never borne arms against their government to file an application to claim 160 acres of surveyed government land. The act required the homesteader to file an application, live on and improve the land for a period of 5 years, then file a deed of title to the land. Northern states in particular supported this act, which was meant to populate Western states with farmers and undermine some of the South's economic and political sway in the increasingly fractured nation at the beginnings of the Civil War.

Yet Native title proved to be a persistent obstacle as the United States sought to issue settlers clear title to lands to support this imagined agricultural foothold.

Treaties meant to extinguish Native title were the principal mechanism for clearing title for reoccupation by federal and private landowners. A series of treaties negotiated at Tansey Point (in what is today's Warrenton) by Anson Dart in August 1851 were meant to accomplish this goal with the tribes of the Columbia-Pacific. In the course of these treaties, U.S. representatives negotiated independent treaties with numerous tribal communities, including the Clatsop, Wau-ki-kum, Konnaacc, Kathlamet, Klatskania, Wheelappa, Lower Chinook, Nehalem-Tillamooks, the "Lower Band of Tillamooks," and others. Though the content of these treaties varied, all of them involved tribes ceding claims to the bulk of their territories in exchange for promises of modest payments and government assistance, and in some cases the retention of small inholdings within former lands as reservations.

The Chinook were able to reserve "*the grounds they now occupy*," protecting the remaining Chinook settlements north of the Columbia as *de facto* reservations. Though the point was not explicitly stated in the treaty, this would presumably have included a good portion of Station Camp. In their negotiation of treaties, the Clatsop requested a single sizeable reservation, but non-Native agricultural settlements were already beginning to encroach on the margins of their larger villages and U.S. negotiators found it difficult to envision a reservation proposal that wouldn't prompt opposition from settlers. Instead, the Clatsop were promised a smaller reservation at Point Adams, in what is today Fort Stevens State Park, as well as continued access to "*their fishing grounds at the mouth of the Neacoxsa Creek [in Seaside] whenever they wish to do so for the purpose of fishing.*" In the end, however, the U.S. Congress did not ratify the treaties, due in part to the intercession of members of Oregon's congressional delegation such as Joseph Lane. Lane objected to the effects of the proposed reservations on what were perceived as American strategic interests: the loss of non-Native homesteads, the preemption of potential military forts at the Columbia mouth, and the continued presence of a large Native population on the lower Columbia (Ronda 2011: 110–113).

Other legal mechanisms and treaties would be ventured in the years ahead, including separate treaty negotiations at Chehalis, Quinault, and elsewhere, but none recognized the independent tribal status of the Chinook, Clatsop, and other peoples of the lower Columbia. Nor did they provide reservations or federal protections for these tribes similar to those afforded other tribes of the Northwest. In the absence of ratified treaties, the legally sanctioned occupation of lands by non-Native settlers increasingly displaced Native people from prime spots along the Columbia estuary, often pushing families southward to places like Seaside, Cannon

Beach, Nehalem, and Garibaldi, Oregon, or northward to places like Bay Center, Tokeland, and for some, Taholah, Washington.[36]

In the Columbia-Pacific region, it is clear that the Donation Land Claim process was messy and defied textbook explanations of American settlement. Some families with deep local roots made claims in places where they had already been located a number of years. Settlers such as Solomon and Celiast Smith, for example, were able to establish a 639-acre claim around the Clatsop Plains house they had occupied for many years, as they had worked in support of the Lee and Frost mission long before the advent of the Oregon Trail. In some cases, claims were jumped by other parties, so that people living on the land previously without clear legal title were displaced by individuals who made claims on the same lands. This proved a problem for some early farmers, to be sure, but also for Native peoples whose claims on the land had not been recorded in state, territorial, or federal records. Some claims were not "proved up" and were lost, only to be reoccupied by other settlers. Very often, lands were claimed only briefly, being improved and then resold—either as large blocks of land or subdivided parcels—sometimes as a speculative real estate venture yielding considerable profit. These scenarios played out throughout parts of Oregon and Washington. Still, they seem to have been especially common in the Columbia-Pacific region, where farming was often difficult and lands obtained through land grants could be resold for alternative uses, such as fishing stations, military and lifesaving posts, recreational developments, and a range of other purposes suited to the distinctive coastal geography.

Other significant departures from the textbook explanations of American settlement characterized the land claims process in the 19th-century Columbia-Pacific region. Here, the effects of the fur trade era were ubiquitous and longstanding. Unlike many other parts of Oregon and Washington, where families of agricultural settlers often arrived without prior ties to the land, the early history of land claims and agriculture in the Columbia-Pacific region was inextricable from the history of fur trade families who became established in the two or three generations preceding the Donation Land Claim Act. In this respect, the experiences of the Columbia-Pacific resembled those of the community of fur trader families in Champoeg (and many connections linked these two communities) rather than those of other, more homogeneous parts of the Willamette Valley. The stories of the early settlers and farms demonstrate many points of intersection between the rising tide of non-Native settlers arriving along the Oregon Trail and the lives of various former North West and HBC employees, missionaries, and mixed-race families who had long seen the lower Columbia region as their home.

Many individuals were associated with the early resettlement of the lands now within the Lewis and Clark National and State Historical Parks, either as early settlers, land claimants under the Donation Land Claim Act, or as later recipients of lands acquired under that act. A complete biographical overview would entail a sizeable study in its own right, so what follows is only a review of key players, giving a sense of the greater historical processes at play. More detailed biographical assessments of these individuals are available from preexisting sources.[37] A review of these biographies show that many—perhaps most—of these settlers did not fit the stereotypical image of Donation Land Claim pioneers, but were individuals simply attempting to obtain legal title to lands already well known to them. Likewise, they were pursuing development for reasons other than agricultural settlement. Those who did seek to develop agricultural settlements and "prove up" their land typically embarked on months, sometimes years, of toil, clearing lands with saws, axes, fire, and—when resources permitted—the labor of neighbors or Native peoples hired to assist.[38]

On Cape Disappointment, the Donation Land Claim claimant was Elijah White, former Oregon Sub-Indian Agent. White contributed much to the early history of the Northwest, arriving with Jason Lee's Methodist mission to Oregon, advancing American claims into the HBC-dominated Northwestern frontier, as noted previously, and causing considerable anxiety within the ranks of that company and among tribes of the interior Northwest.[39] White dabbled in many professions and by the late 1840s, served as a missionary to the Chinook and other tribes of the region. Like most of his contemporaries on the lower Columbia, White recognized the prominence and strategic importance of Cape Disappointment. Before the passage of the Oregon Treaty in 1846, a settler by the name of John E. Pickernell had submitted a legally ambiguous land claim to 640 acres on the Cape Disappointment headland. In the fall of 1849, working with business partner James D. Holman, White occupied the interior, northeastern flank of Cape Disappointment. This was no agricultural venture, but seems instead to have been driven by a desire to profit in the sale of this distinctive piece of Columbia-Pacific real estate.

Submitting the paperwork for a Donation Land Claim by 1850, White almost immediately began to subdivide his claim into lots in an imagined community called "Pacific City." He began to sell these lots to arriving settlers. White and a few of his purchasers built structures, and a small community immediately took tentative form on the cape. Several of these lots were sold to two brothers by the name of Holman, and with White's support, one of these brothers—James D. Holman—built a hotel off-site, subsequently placing it at Pacific City. By doing so, James D. Holman

consequently became White's partner in promoting the town, which grew to 75 residents before President Fillmore declared much of the area a military reservation by executive order on February 20, 1852.

Even while promoting the town for prospective real estate sales and development, White was simultaneously petitioning the U.S. government to acquire his land for a military reservation due to its strategic values—a point of military history to be addressed later in this document. In the end, the federal government acquired the land, condemning the town and its various buildings. As Weathers noted, *"He sold most of his subdivided property to unsuspecting settlers and was undoubtedly compensated for the loss of his Donation Land Claim when the government announced the land was government property in 1852"* (Weathers 1989: 51). The community gradually disbanded, making way for the military reservation that would become Fort Canby by the early 1860s (Hussey 1957). Some portion of Pacific City's residents and commercial functions, in turn, were displaced the short distance eastward to the townsite of Ilwaco, and had a catalytic role in the early development of that community.

Similarly, Fort Columbia was originally homesteaded by a settler who had ties to the region preceding the advent of the Oregon Trail. James Scarborough, born in Ilford, Essex, in England, had moved to the lower Columbia in 1830, working as an employee of the Hudson's Bay Company. By 1843 Scarborough had married a Chinook woman, Ann Elizabeth, and the two are known to have visited the Chinook Point area while searching for a place to settle along the lower Columbia. The exact date of their occupation of the Fort Columbia site is unclear, but it is known to have occurred sometime between 1843 and 1846. James was still in the employment of the HBC, placing them conveniently close to their friends and family in both Fort George and the Chinook community. By 1848, both James and Ann were cultivating the property, and they secured a 643-acre Donation Land Claim by 1850. The prominent landmark of Scarborough Hill, rising to the north of Fort Columbia, is still named for the couple. Both James and Ann died by 1855. At that time, control of the land was granted to their sons' guardian, James Birnie, another employee of the HBC, who in turn sold the land to fellow company employee, Rocque Ducheny, who was married to Concomly's granddaughter Mary Rondeau. Like Scarborough, Ducheny died soon after securing title to the land. Though Mary appears to have sold her interest in the land, she live there into the 1860s when the land was purchased as a military reservation, ultimately the home of Fort Columbia (Hussey 1967: 17–22).[40]

The Station Camp area was also acquired by individuals who did not fit the stereotype of the agricultural settler. The site was first acquired by Catholic missionary

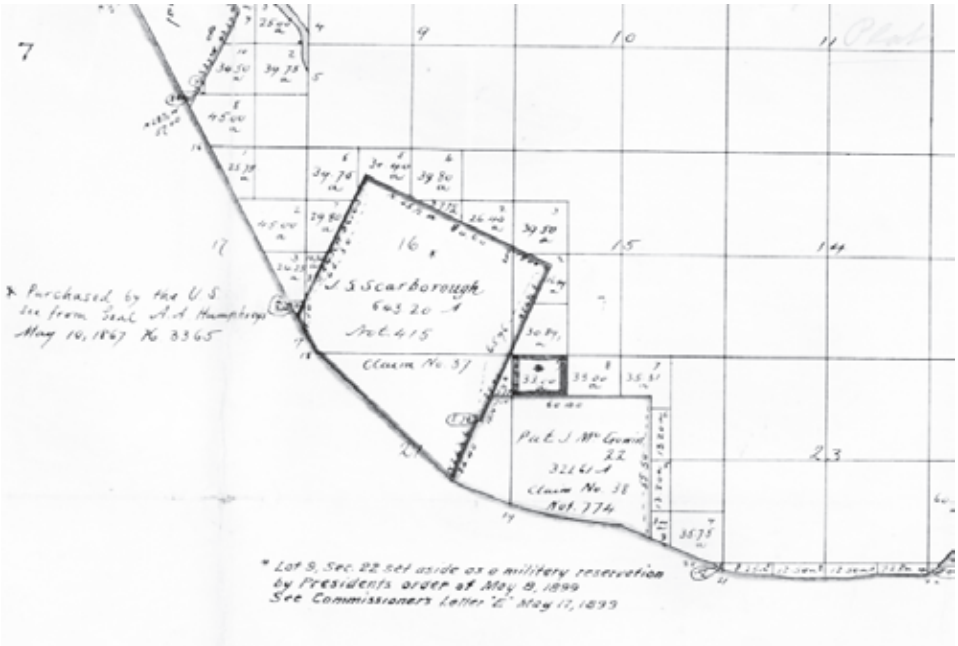


Figure 6.1 – By the early 1860s, J.S. Scarborough and Patrick McGowan owned adjacent land claims, occupying much of what is today Fort Columbia and Station Camp respectively. McGowan, in particular, was not a conventional agricultural settler–acquiring his lands largely as an investment in the future of the Columbia River fishing industry. From Bureau of Land Management, *General Land Office Map, Township 9 North, Range 10 West, Willamette Meridian, 1863*.

Father Louis Joseph Lionnet under an 1848 mission grant, a type of grant made by the territorial government to support the missionization of Indian communities. Establishing his mission practically in the front yard of the Chinook's Middle Village settlement, Lionnet and members of his mission attempted to win the loyalties of the Chinooks, who had already been exposed to considerable, if less invasive, Catholic missionary efforts during the period of HBC dominance. Operating the Stellam's Mission, Lionnet performed baptisms, marriages, and last rights to Native and non-Native people living in and around Middle Village. With mixed success among the Chinooks and declining numbers at Middle Village, Lionnet sold his claim to Patrick J. McGowan, a Portland-based businessman. McGowan saw the potential of this prominent riverfront site not for agriculture, but for fishing and other industrial pursuits. Establishing a Donation Land Claim to the site in 1853, McGowan only occupied the land intermittently for several years, "proving up" the land but not moving to the site until around 1861 to develop his salmon salting and packing interests, a point discussed in later sections of this document (Weathers 1989: 39).

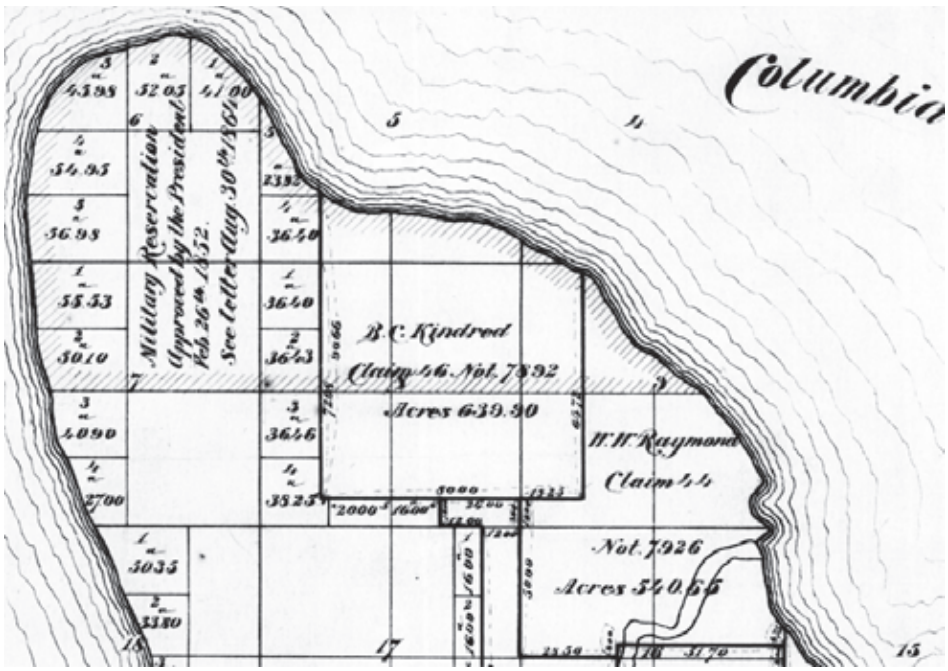


Figure 6.2 - By the time of the 1863 General Land Office survey, Fort Stevens was already functioning as a military reservation, though the lands had been briefly homesteaded by the Schwatka family and had remained the site of a sizeable Clatsop village. Hachures show where the new reservation incorporated lands from the claims of B.C. Kindred and W.W. Raymond. From Bureau of Land Management, *General Land Office Map, Township 8 North, Range 10 West, Willamette Meridian, 1863*.

At Point Adams, a settler by the name of Frederick G. Schwatka was still processing his family's Donation Land Claim to much of Point Adams as Army surveyors arrived, asking him to vacate the premises. He had initially moved his family to Memaloose Point, just south of Fort Clatsop by 1853, apparently attempting to settle at a former Clatsop burial site before moving on to Point Adams. Displaced from Point Adams, the family later moved to the Willamette Valley, making retroactive claims for compensation for the lands lost to the military. Two separate Donation Land Claims were established just to the east, by B.C. Kindred and W.W. Raymond. Raymond served as a temporary Indian agent to the Clatsops at Point Adams, with the sanction of Oregon's Indian Superintendency. Both also lost large tracts of land to the new forts.[41] There is some evidence to suggest that the Methodist missionaries, Lee and Frost, temporarily occupied the shoreline at Point Adams too, prior to the establishment of the military fort and the displacement of the Clatsops (Deur 2005; Penner 1998; Lee 1916; Wilkes 1845, 1841; Lee and Frost 1844).

Among the settlers associated with the lands now in the national park, it is perhaps the Shane family at Fort Clatsop that most closely fits the agrarian vision of early proponents of the Donation Land Claim Act. Carlos Shane arrived in Oregon by way of the Oregon Trail in 1846. Seeking suitable sites for an agricultural homestead, Shane established a presence in the Fort Clatsop area by 1848. In 1850, he acquired the site from Thomas Scott, who had used the Donation Land Act earlier that year to "jump" the Oregon Territory provisional claim of an 1849 settler, S.M. Hennell. By 1851, Shane had built a house very close to the historical site of Fort Clatsop. Yet these historical facts—familiar to many members of the park staff—represents a much simplified version of what were, in truth, complex events. Preston Gillette, himself a prominent settler on the east bank of the Lewis and Clark River who wrote extensively about the Fort Clatsop site, reported some of these details:

"Fort Clatsop has had many a claimant and owner within the last 50 years. Lewis and Clark gave it to the Clatsop chief, Co-mo-wool, as they spelled it, but his descendants say it is Co-ba-way, who used it during the remainder of his life as a winter home. In 1849, S. M. Henell, of Astoria, put a man on the place to make some improvements, expecting himself to take it up under the donation act, but in 1850 Thomas Scott, whom I knew well later on, jumped it, and established a claim to it. However, he held it but a short time, when he traded it to Carlos W. Shane for Ka-lots-ka, which had been the home of Twilch and his tillicums (people) from time immemorial, and afterwards became my place" (Gillette 1900a).

Carlos sold the land to his brother Franklin Shane in 1853, moving to a separate homestead a short distance upriver. Franklin ultimately occupied a house some distance south of the fort; the original Shane home on the property, built by Carlos, was said to have "long since disappeared" by 1900 (Shane 1900: 21). As Gillette noted, *"the young growth of timber that had overgrown the old Lewis and Clark clearing had been cleared away [by the Shanes] planted in orchard, and put into cultivation"* (Gillette 1900a). The Shanes planted the land in crops, including orchards of fruit trees and a variety of vegetables including potatoes, acquiring at least a portion of their cultivated trees and crop seed from Gillette (Gillette 1900b). They continued to occupy the site into the early 20th century.[42] Cultivation generally ceased on the Shane farm in the 1860s, but a generation after the family's original settlement, they once again tried to make the land profitable for agriculture and other pursuits. Gillette noted,

"In the 1870s one of the Shane heirs took possession of the place, and for the third time the land was cleared and an attempt made to make an Important place of Fort Clatsop" (Gillette 1900a).

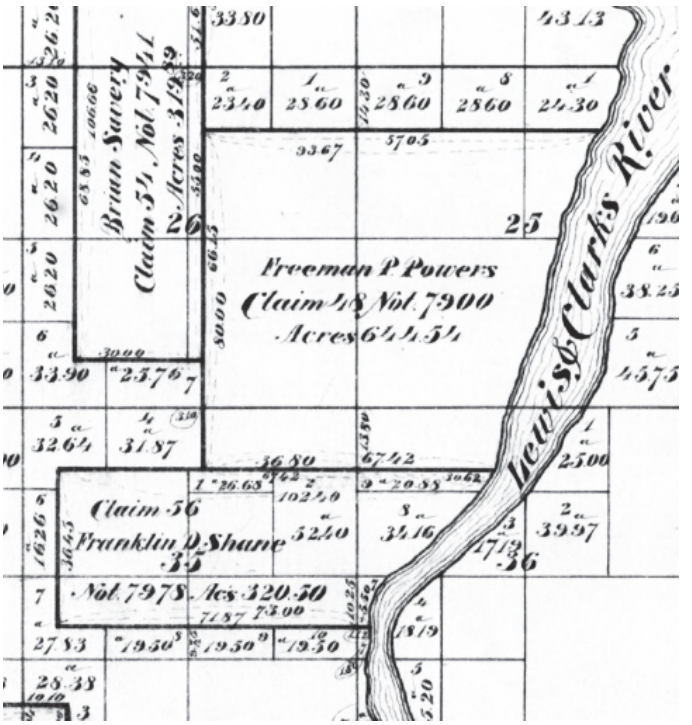


Figure 6.3 – The Shane land claim, sitting at the 1805-06 site of Fort Clatsop and future site of Fort Clatsop National Memorial and the Fort Clatsop sub-unit of the Lewis and Clark National and State Historical Parks. By the time of the 1863 General Land Office survey, Carlos Shane had already transferred the land to his brother, Franklin. From Bureau of Land Management, *General Land Office Map, Township 8 North, Range 10 West, Willamette Meridian, 1863*.

Still, they clearly had broader visions for the economic development of the land that were not solely agricultural. As will be discussed elsewhere, the Shanes allowed for the development of a sawmill on the site in the 1850s, which sold lumber locally and to burgeoning California markets of the Gold Rush era. They also promoted and developed a short-lived boat landing linking the Youngs Bay estuary by wagon road with the early resort towns on Clatsop Plains (Cannon 1995; Gillette 1900a, 1900b). A trail is still referenced (or at least implied) in mid-19th-century accounts, very roughly approximating the Fort-to-Sea Trail route, connecting the settlements of the Lewis and Clark River area to the beach, thence to the south toward modern Seaside (Gillette n.d., June 2, 1861; Metsker 1910).

The Sunset Beach area, meanwhile, was a point of convergence among several Donation Land Claims, the most central and important arguably being that of Cyrus Olney. Olney's lands included much of the southern portion of Sunset Beach State Wayside, as well as the Yeon property. Born in New York and raised in Ohio, Olney practiced law in that state for a number of years before moving to Oregon. Here, he became a prominent figure in early Oregon history. President Franklin Pierce appointed Olney to the Oregon Supreme Court in 1853, at around the time he was

Figure 6.4 - The Shane family farm continued to cultivate the site of Fort Clatsop in various crops through the late 19th and early 20th centuries–in this 1899 photo, the fort site is covered in flowering potato plants, one of the more successful crops on the cool and humid Columbia-Pacific region. Photo courtesy Oregon State Historical Society.

settling in Clatsop County. Like a few of his Clatsop Plains contemporaries, Olney had ambitions of becoming a gentleman farmer. To achieve this, he secured the land fronting the ocean near modern Sunset Beach for his Donation Land Claim, and purchased part of another land claim belonging to John McClure in Astoria.

The scenic oceanfront provenience of Olney's claim was no doubt part of its appeal, reflecting a trend apparent in later Clatsop County land claims. (Portions of the scenic southern coast of the county were acquired through homestead claims by such notable Astoria figures as cannery owner Samuel Adair, for example, whose 1892 homestead encompassed Hug Point and was the site of a seasonal home perched above that point's scenic beachfront waterfall.)[43] Olney was a member of the 1857 Oregon Constitutional Convention. He represented the northern coast in the Oregon legislature in the late 1860s, and worked the Clatsop Plains farm intermittently, though his health was declining for many years. He died in 1870 and the Clatsop County town of Olney was named in his honor. Portions of the Olney Donation Land Claim were acquired by members of the Carnahan family and became known as the Carnahan Place, with farm lands gradually being subdivided and platted to foster resort community development in decades that followed (Miller 1958; Corning 1956; Lockley 1928: 793).

Yet Olney was not the only major 19th century landowner in the area. Today's Sunset Beach parking area sits very close to the western corner between lands owned by Cyrus Olney and James Taylor. Pennsylvania-born James Taylor (1809-1893) was raised in Ohio and came west in 1845, crossing the Barlow Pass over the Cascade Range even as it was being built by Sam Barlow. Living in Portland, Taylor became business partners in a mill operation with Portland founder and Oregon territorial legislator, Asa L. Lovejoy (for whom various Portland landmarks are named, including Lovejoy Street). Their operation was severely damaged by flooding, and the Taylor family—including wife Esther and the children (ultimately numbering seven)—then moved to Clatsop Plains. The Taylors purchased an unoccupied Donation Land Claim near present-day Sunset Beach that they farmed. They also acquired lands in Astoria, fronting Young's Bay—providing for them, like Olney, a farm and a "town house" that allowed their children to attend town schools. Also typical of families of that era, the Taylors moved to and from the Willamette Valley on more than one occasion, returning to participate in business ventures with Lovejoy. But the family continued to return to their homestead between obligations in the interior, with James and Esther contributing to the development of the original Presbyterian church along what is today the Fort-to-Sea Trail route. Later, their children contributed to the development of other buildings at the site, including the present-day church known as the Clatsop Plains Pioneer Presbyterian Church. The Taylor family lived in the area well after the early settlement period, participating in the salmon fishery and other aspects of Columbia-Pacific history (Miller 1958; Lockley 1928: 792-94).[44]

The lands now encompassing the Salt Works in Seaside were within the Lattie family Donation Land Claim. In many respects, the Latties' lands resembled those of Washington park lands, with their linkages to tribal families and history. Born in Scotland, Captain Alexander Lattie Sr. worked for the HBC as a bar pilot and served for a time as captain of the *Beaver*, the first steamer ship to enter the Columbia (Millard 1977; Lattie 1846). He was married to Ce-cust (also called Marie Catherine or Sikkas), a woman of Clatsop and Tillamook parentage, born circa 1813. The couple married in 1831, initially settling adjacent to the tribal settlement at Station Camp while Alexander worked as a bar pilot.

The Latties had several children, including Alexander Jr., William, Helen, Mary (or "Marie"), John, and others. After Alexander Sr. drowned in 1849, the family—like many tribal families of the time—felt increasingly unwelcome on the rapidly developing mouth of the Columbia. The Lattie family moved to the Seaside area, where the sons successfully secured title to the family's lands, employing the

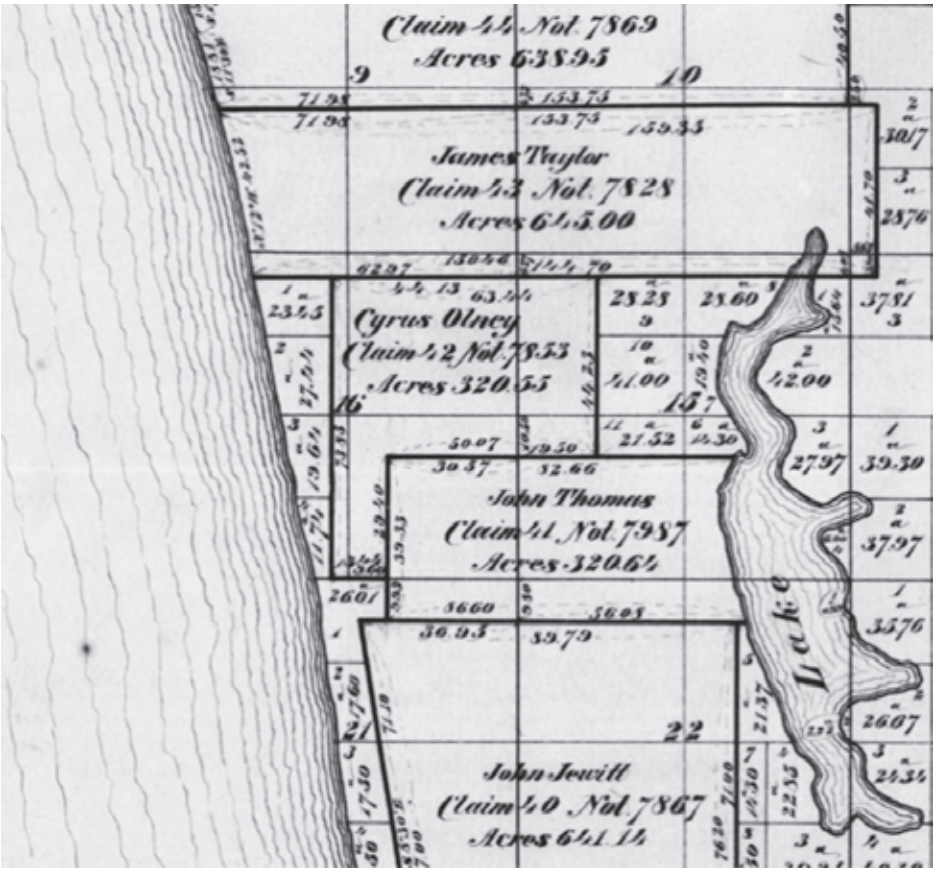


Figure 6.5 – The Olney and Thomas land claims converged in the vicinity of Sunset Beach, on Clatsop Plains, with Cullaby Lake on the east and the Pacific Ocean to their west. From Bureau of Land Management, *General Land Office Map, Township 7 North, Range 10 West, Willamette Meridian, 1863*.

provisions for half-Indian claimants within the Donation Land Claim Act. Acquired in 1853, their claim consisted of 325 acres, running roughly from what is today Seaside's Avenue G to Tillamook Head. The Lattie home sat a short distance from the south cove of Seaside, near the site of an old Clatsop village, and was a meeting place for Native people still in the Seaside area. Early settler, P.W. Gillette (n.d.) noted that when he visited the family's home in 1852, "*there were many Indians in the neighborhood.*" The Latties' home also became the focal point of early Seaside tourism, with Alexander and Ce-cust's son, William Lattie, serving as proprietor of a small rooming house commonly called "Bill Lattie's Place."[45] After Ce-cust's death in 1871, the family sold much of their land claim to Ben Holladay, where Holladay founded Seaside's first major hotel. Lattie family descendants sometimes

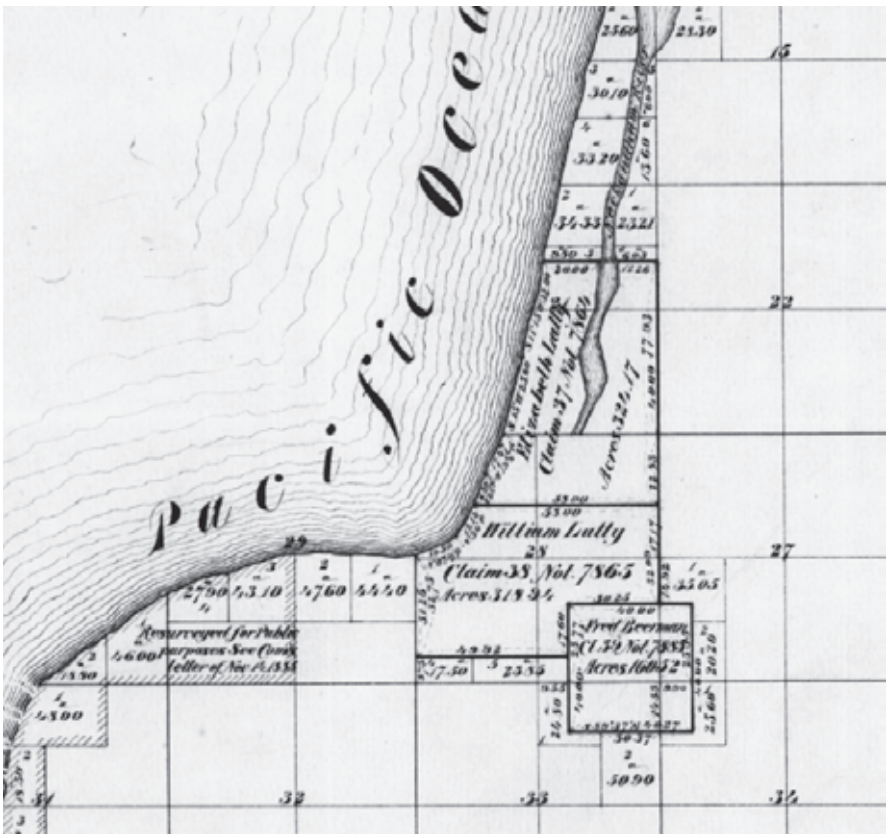


Figure 6.6 – The Lattie (or "Latty") land claims of William and Elizabeth Lattie, in what is today south Seaside. The Latties were successful in using legal instruments largely intended to aid recent settlers in the acquisition of agricultural land claims, allowing this family – of partial Clatsop and Tillamook ancestry – to maintain their home at a longstanding village site on Seaside's south cove. From Bureau of Land Management, *General Land Office Map, Township 6 North, Range 10 West, Willamette Meridian, 1863*.

worked as part of his establishment and helped recruit Native storytellers to entertain guests. Their land claim was later platted to become the southern portion of the growing resort town of Seaside, and a few Lattie descendants live in this part of Seaside today (Deur 2008; McChesney 1969).

Though agriculture was not a major component of most of these stories, each settler mentioned practiced subsistence farming of some sort, and *"all but a few depended on farming"* (Gillette n.d., January 17, 1861). From the earliest records of agriculture on this coast, continuing well into the 20th century, there was a division between subsistence and commercial farming. Small kitchen gardens were widespread and

subsistence farming was the norm. And, much more than is apparent in official histories of the region, early homesteaders and area farmers survived through mixed economies of small-scale farming and subsistence hunting, fishing, and plant and shellfish gathering. Expeditions for purposes of elk and deer hunting, salmon fishing, and berry picking are ubiquitous in pioneer diaries.[46]

More ambitious, commercial farming efforts were not always fruitful, as the landscapes of the Columbia-Pacific defied early settlers' expectations in many ways. The farmers arriving in the area to stake land claims, perhaps especially those from Midwestern states, were not prepared for the difficulty of clearing ancient forest, nor for the acidic and often nutrient-poor soils common on the coast. The arduous task of clearing forest, alone, was enough to sink many agricultural ventures. As noted before, the combined labor of the Astorians over the course of months resulted in perhaps an acre clearing during their critical first year, scarcely adequate to support the needs of the early fort (Ross 1832: 74). Some 40 years later, Preston Gillette and his neighbor together cleared only half an acre in their first season on the Lewis and Clark River.[47] The many other settlers who occupied forested lands often had little more success, expanding their farms slowly and incrementally over the course of years.[48] The lands that were cleared proved difficult to farm, with stumps, mazes of roots, and nutrient-poor soils.

With early experiments at developing farms on forestland proving so disappointing, cleared lands were at a premium. Early settlers were drawn especially to the rolling grasslands on the Clatsop Plains and, to a somewhat lesser degree, the Long Beach Peninsula. In the earliest years of the Donation Land Claim Act, most of the unforested portion of these two areas was occupied by new land claims, making it one of the largest contiguous areas of Donation Land Claims in Oregon Territory outside of the Willamette Valley, extending unbroken from Youngs Bay to the base of Tillamook Head. Though in many cases these lands were unforested, they sat atop stabilized sand dunes. These lands proved to have shallow, highly acidic soil, which when cleared could sometimes turn to shifting sands. In this context, former Native village sites were also at a high premium, often being the only significant clearings along the shoreline in a landscape dominated by dense forest and dune fields. Moreover, soil acidity had always been a limiting factor for agriculturalists, not only on the dunes, but in most parts of the Columbia-Pacific (and even today, commercial farmers must lime their lands or provide buffering agents to make untilled ground cultivable [e.g., J. Trelawny pers. comm. 2013]). The lands around villages, with their ancient refuse heaps, dense shell middens, and rotting wood,

Figure 6.7 - Farms that were established in the few available bottomlands and former floodplains with rich soils, such as those in the Grays River area (shown here, in the late 19th century) and along the Lewis and Clark River, often fared much better than farms in cutover timberland and stabilized dune fields, which were often marginally productive and plagued by erosion. Photo courtesy Washington State Historical Society.

represented atypical "anthrosols," soils that were transformed and often much fertilized by longstanding human occupation. On more than one occasion, early crops appear to have been planted amid burial sites, where human remains buffered the acidic soils and fertilized the ground. As recalled by Preston Gillette of his own successful early farm,

"This small cleared spot at the landing was done principally by the Indians. It seems to have been a village, or camping place, occupied by them from time immemorial [making] the ground exceedingly rich. They buried their dead in the back part of where now [sits] my orchard, where we burned up many bones in clearing the land" (Gillette n.d., January 14, 1861).

For unrelated reasons, the fear of Indian attacks sometimes depopulated the emerging agricultural lands of the Columbia-Pacific in the mid-1850s. While local Native-white relations were generally peaceful, in spite of the reoccupation of lands and occasional violation of burials, the Rogue War to the south and the Yakama War to the east prompted a brief abandonment of many rural areas in favor of larger and more defensible cities. Citing this as a major cause alongside movement to the California gold fields, Gillette (1900a) noted, for example, that the registered voting population of the "Fort Clatsop precinct" dropped from 56 to only one between the years of 1853 and 1856, with the population only rebounding in the decade

that followed. The creation of new Donation Land Claims, here and in many other parts of Oregon, temporarily stalled during this period too.

There were other challenges for agricultural settlers. The growing season in the mid-19th century was clearly shorter than it is now, and cloud cover, hard winter rains, and even snow sometimes delayed sprouting crops or cut short growing seasons. Frosts were reported in 19th-century settlers' diaries somewhat frequently into late May and sporadically even into the summer (Penner 1996). Even when soils were adequate, early crops were often disappointing. Warren Vaughan, who settled on Clatsop Plains and later moved to Tillamook Bay, complained that in many places the tomatoes rotted on the vines while still green and that, for a number of years, only potatoes would yield a significant crop. The diets of some settlers, much truncated by these crop failures, centered on salmon and potatoes, he noted. The settlers who moved to Tillamook Bay, their humor growing dark with crop failures and a persistent (if unrealized and probably unfounded) fear of Indian reprisals, began to use the phrase "salmon and potatoes" as a password for entry into homes and forts of the 1850s (Vaughan n.d.).

While readily cultivable land was scarce, grass grew abundantly in the humid coastal climate, making livestock grazing one of the few highly successful agricultural pursuits of the Donation Land Claim era. Missionaries and Native people had played an important role in the introduction of livestock to the region, even before the arrival of Oregon Trail settlers. Reverend Joseph Frost, a Methodist missionary, had taken an interest in the coastal tribes and resolved to establish a mission there, based in part on the recommendations of Celiast Smith, daughter to Chief Coboway, who resided in the northern Willamette Valley in the late 1830s. In the summer of 1840, Reverend Frost moved to Clatsop Plains, accompanied by Celiast and her husband, Solomon Smith, a Vermont-born member of the 1832 Wyeth party. Frost, in particular, viewed the introduction of agriculture, as it was practiced in the American East and ultimately Europe, as key to the settlement of the region and the "civilization" of Columbia-Pacific tribes. As Frost observed, "We must use the plough as well as the Bible, if we would do anything to benefit the Indians. They must be settled before they can be enlightened" (Frost 1934: 71).

In 1841, Smith and Frost determined to develop and promote the agricultural potential of the Clatsop Plains by introducing large numbers of cattle to graze the verdant and as yet largely unoccupied grasslands. In part following tribal trails, Smith and Frost blazed a cattle trail south along the coast from Clatsop Plains to Salmon River, where they cut inland to the Willamette Valley. On the south end of

Clatsop Plains, the trail veered inland to bypass what is Ecola State Park, as the Clatsop warned the trail was too rough for livestock and horses. They instead passed over a secondary Tillamook Head trail that approximates the modern highway. (Some 51 years later a team of Indians would improve this route for the creation of the first formal wagon road to what became Cannon Beach.) Cattle drives along the coast were often treacherous, with cattle sometimes falling to predation or sliding to their death while crossing the cliffs of Neahkahnie Mountain, just south of the Clatsop County line. Still, a number of settlers brought cattle to Clatsop County by this route, relying on the Nehalem and Tillamook peoples to help ferry them across rivers along their path. Clatsop Chief Tostom was also instrumental in cattle drives, involving livestock purchased from Fort Vancouver and herded over other Coast Range trails. Many years later, cattle drives were eclipsed by waterborne livestock shipments, with settlers such as Warrenton namesake D.K. Warren hiring steamers to carry cattle down the Columbia from eastern Oregon (Dicken 1978; Miller 1958: 201 ff.).

Raising livestock came with its own unique challenges in early years. Herds quickly grazed over portions of the Clatsop Plains and Long Beach Peninsula, breaking through thin sod, leaving drifting sands in their wake. By the 1870s drifting sand became a significant problem. There were several impromptu community efforts to fence cattle in hopes of reducing impacts on areas where trampling and grazing accelerated erosion. Heavily grazed portions of the Clatsop Plains and smaller portions of the Long Beach Peninsula remained moving sand fields until government-sponsored reclamation efforts of the Depression, when Civilian Conservation Corps (CCC) crews planted Scots broom, shore pine, and European beach grass, building fences to contain the effects (Reckendorf et al. 1985). So too, these early agricultural areas—the Clatsop Plains, in particular—sat adjacent to dense forests that were home to large predators including timber wolves, cougars, and grizzly bears. The journals of early farmers tell of astonishingly high losses of livestock in early years to these predators. Wolf meetings, organized by early settlers like Solomon Smith, were held to promote creative ways to repel and kill wolves, whose populations remained numerous through the end of the century until organized and impromptu eradication efforts had the desired effect. Through the 1850s and 1860s, farmers complained of their fields being filled with pits from grizzly bears, apparently searching for grubs and small burrowing mammals. Livestock also fell into pits constructed by area tribes to catch game (e.g., Gillette n.d., May 2, 1861). Bear hunts were organized to control the grizzly. (The extirpation of so many top-order predators eventually brought increases in other species, such as elk and coyote, with the latter apparently being rare in the area before this time.)

In spite of stock drives along the Smith and Frost trail, as well as overland and by boat on other paths, cattle remained surprisingly scarce and locally expensive. As Gillette noted, *"I neglected to get any cattle until 1857, which was a great error. Had I but two or three cows when I first came here I now would have been worth almost double what I am"* (Gillette n.d., January 14, 1861). Only in the 1860s did beef and milk cows become relatively commonplace, along with sheep, pigs, horses, and other livestock. Pig and sheep farming persisted into the late 19th century, often with extensive assistance of Chinese labor, with small corn fields planted for feed.

Early cattle operations depended on grazing areas and grass, a resource that was found only in certain parts of the coast, such as old villages, the dune fields of Clatsop Plains and Long Beach, and in bay-front salt marshes and other wetlands. Grazing in the forest was sometimes productive, though forage was limited and cattle went astray in the trackless distances. Furthermore, cattle were vulnerable to predation in forest lands. For this reason, estuaries, where grassy salt marshes lined the middle to higher tidal zone, were often preferred for grazing. In these places, homesteaders sometimes filled the deep, muddy, and intermittently inundated channels, or built impromptu bridges over such channels. In time, with the aid of horse teams, they began to build dikes, augmenting and reconstructing these features with time to expand and repair the soil berms around individual fields. A generation or more after the advent of diking, the construction of dikes began to transform the lower Columbia and Willapa Bay estuaries, in particular, as farmers sought to increase the total area available for grazing and to minimize flooding during peak tides and stream flows. These structures replaced biologically productive marshlands with damp but passable grazing lands, often containing nutritious grasses that proved elusive in other parts of the coastal landscape. Only gradually, in the late 19th and 20th centuries, did grazing lands move into former forest lands in appreciable ways, with fields gradually taking shape amid the decomposing stumps.[49]

From the beginnings of these industries, a lack of local markets, coupled with limited transportation options for fresh agricultural products, created further impediments to agricultural development. Transportation by land was quite difficult in places, nearly impossible in others. Landlocked farms were at a particular disadvantage. Many of the Donation Land Claims that survived were on navigable waterways, especially the Columbia estuary, and boats were long the principal mode of transportation. In the 19th century, produce could sometimes be placed on steamers to Portland, and in the 1890s rail service was available to support the shipping of farm products to the city. (The fact that the one especially accessible

regional market, Portland, sat close to very high quality farmlands in the northern Willamette and Tualatin Valleys only added to the pressures to specialize in niche markets on the coast.) Together, these factors favored agricultural products that did not spoil rapidly and, by extension, did not require rapid shipping to market. For a time, the unpredictable shipping conditions and abundance of grass contributed to the development of a small cheese industry, led by such settlers as Josiah West, with Chinese labor helping to run dairying, cheese-making, and distribution.

Cheese was an ideal commodity for the time, one that would be unharmed by a long dock-side wait, circumstances that famously contributed to the development of cheese-making along other parts of the Oregon and Washington coasts (Heintzelman 1958; See n.d.; Miller 1958: 203). Several small dairymen's associations took form in the late 19th and early 20th centuries, as Chinese labor moved out of the area and dairies sought to consolidate production facilities, marketing, and shipping. In the lower Columbia region, many Scandinavian immigrants bought logged land at a low price from lumber companies, which they used for raising beef and dairy cattle to supplement incomes from logging and fishing. Finnish farmers in the region were primarily dairy farmers and established the Consumers' Cooperative Dairy in 1917 in response to rising milk prices. The dairy cooperative was one of the largest dairies in Astoria and one of its most successful businesses in the first half of the 20th century (Hummasti 2002: 141–142). In 1921, four other small dairy groups consolidated into the Lower Columbia Cooperative Dairy Association, an organization that participated in cooperative marketing and distribution in the urban Northwest and maintained shared factories in Astoria, Clatskanie, Cathlamet, and Grays River, producing cream, cheese, butter, and other products from locally produced milk. In this way, the association helped dairy farmers maintain quality control to insure the stability of the "lower Columbia" brand. The organization issued certifications to guarantee the quality of feed, milk, and other variables (Miller 1958: 201 ff.; Meyer 1950; See n.d.).

The productivity of grass on open coastal grasslands had other ramifications for early agriculture on the Columbia-Pacific. Some farmers began cutting hay by scythe and storing it for later use, and with the help of Chinese labor, in particular, transforming surplus hay into a commodity. The hand-cutting of hay persisted well into the late 19th century, when mowing and threshing machines became commonplace and the Chinese population went into decline. Hay, which thrives in the damp climate, became the dominant crop in the area by the end of the 19th century. To this day, it occupies a solid majority of the Columbia-Pacific's total cropland (Oregon State University 1963, 1936; Miller 1958; See n.d.).

The growth of other crops on early farms was difficult but not impossible, with a few farms succeeding, especially on the narrow floodplain margins of local rivers like the Lewis and Clark and the Chinook. The accounts of Preston Gillette, "Clatsop County's first horticulturalist" (Penner 1996: 3), are always instructive on the early introduction of crops to the region. Not only was Gillette commonly involved with their introduction, but he was an avid chronicler of agricultural developments in the region. Gillette was also situated near Fort Clatsop, as he took a Donation Land Claim on the eastern bank of Lewis and Clark River, a short distance upstream from the fort, occupying a clearing that was formerly a Clatsop village site.[50] Potatoes were widely established in the 1850s, he noted, but there were very few crop plants: *"At that time, fruit trees were very dear"* and ornamental plants were almost unknown (Gillette n.d., January 14, 1861). By the early 1850s, Gillette was in the vanguard, experimenting with a wide range of crops, including several varieties of apples, on his land claim. By the early 1860s, settlers experimented with flax, oats, wheat, barley, and other grains, to mixed success. Grist mills operated sporadically in the area and did so for many years. Cold-weather crops such as beets and cabbages, introduced at around the same time, were sometimes successful, too, while Gillette and his neighbors added pears, plums, peas, and other crops to their repertoire. As early as the 1860s, recognizing soil fertility as a major limiting factor to their success, some farmers obtained seed for red clover and other cover crops that helped amend the soil (Gillette n.d., March 15, 1861).

With this palette of crops, a number of small commercial farming operations succeeded over the years, especially in places where the soils were relatively rich and forgiving. Jeffers Garden and other areas around Warrenton experienced temporary farming booms, centered on crops that thrived in coastal conditions. Peas and garden beans proved to be good choices: with nitrogen-producing roots, these crops could survive in rain-leached soils where other crops failed. In places such as the margins of wetlands and along the riparian zone of the Lewis and Clark River, farm workers including Chinese (and occasionally Native Americans) were sometimes paid to harvest and process peas, beans, potatoes, and other crops. As with cheese, farmers sought ways to preserve crops so they could be shipped to distant markets. Some portion of the pea and bean crop was canned for sale, under arrangements with local fish canneries, using waterfront canning equipment when salmon was not being processed. The canneries also served as the venue for experiments in the processing of beef and mutton—often with involvement of Chinese labor—in salmon fishing's off-season.

Figure 6.8 – Women processing and canning peas in the early 20th century at the Glacier Bay Oyster Cannery, a Pacific County facility primarily used for fish and shellfish. Asahel Curtis photo, courtesy Washington State Historical Society.

The region, abounding in native berry species, was also well-suited for commercial production of berries. By the late 19th century, blackberries, strawberries, blueberries, raspberries, loganberries, and others were cultivated in very small commercial plots, totaling only a few acres over the entire study area. By the early 1900s, using the juices of local berries, a company called the Astoria Soda Works produced the unfortunately named beverage Wine-O, a product that became popular once Oregon passed statewide prohibition laws in 1915.

In cranberries, too, agriculturalists found a crop suited to the unique circumstances of the Columbia-Pacific region.[51] A marsh fruit requiring acidic peat soil and a moist climate, the domestic cranberry thrives in few locations but was uniquely suited to the challenges of Columbia-Pacific agriculture. The Chinook, Clatsop, and other tribes traditionally gathered a native wild cranberry for their own use and for trade with other tribes, and Lewis and Clark recorded area tribes picking *pil olallies* or "red berries" (*Vaccinium oxycoccus*) that grew in swamp or peat soils in the area (Weathers 1983: 52; Seeman 1941). Indeed, Article 2 of the Chinook's 1851 treaty guaranteed

them "the right to pick cranberries on the marshes." While some non-Native settlers used these wild berries, most settlers who explored options for commercial cultivation in the 1880s found the native berries too small and labor-intensive to harvest on a commercial scale.[52]

Anthony Chabot was the first to successfully introduce commercial-scale domestic cranberry production on the Pacific coast in the 1880s, planting in boggy areas on the Long Beach Peninsula and beyond. Chabot, a Canadian living in California, had already been experimenting with cranberry agriculture elsewhere on the west coast, working in partnership with H. Pierce, A.J. Pope, and W.C. Talbot (of the Pope and Talbot Timber Company). As he embarked on those efforts in the late 1870s and early 1880s,Chabot's Massachusetts-based brother-in-law visited Long Beach Peninsula and encouraged Chabot's interest in the potential for a Pacific County cranberry industry. The following year, Chabot imported McFarlin variety cranberry

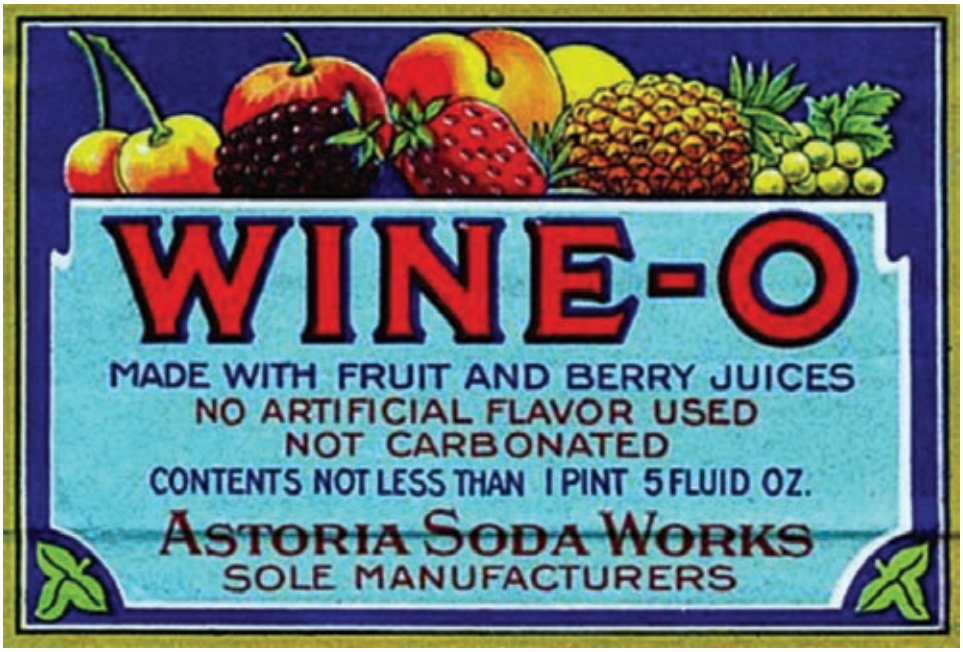


Figure 6.9 – A 1918 label from Wine-O, a product of the Astoria Soda Works. Image, Label 1891, courtesy State of Oregon Archives, Trademark Collection.

Figure 6.10 – Men and women harvesting cranberries by hand near Grayland Washington in the early 20th century. Asahel Curtis photo courtesy Washington State Historical Society.

vines from Cape Cod and planted 35 acres of marshland on the peninsula. In 1883 Chabot and his wife, Emilie, incorporated the Pacific Cranberry Company, appointing their nephew Robert as the company's authorized agent; Robert later relocated the business operations to Ilwaco, while maintaining and expanding cranberry acreage on the peninsula and areas adjacent. The Chabot bogs on Long Beach Peninsula thrived for several years before dissipating in the late 1890s. During good years, the harvest annually reached 7500 barrels (equal to 750,000 pounds). The crop was dry harvested by hand, and the picking was done by local Native labor, Chinese laborers working under picking contracts, as well as women and children (who were sometimes let out of school for extended periods at harvest time). Despite Chabot's early success, there were few cranberry farmers actually living on Long Beach Peninsula between 1883 and 1910, with most local farmers using cranberries as a supplementary source of income from otherwise unusable marshlands on their properties. After Chabot's Pacific Cranberry Company quit

production, there were only four producers left on the peninsula (Weathers 1983). In Oregon, meanwhile, there had been commercial harvesting of cranberries in Coos and southern Tillamook Counties as early as the mid-1880s.[53] In 1911 C.N. Bennett put out the first bogs in Clatsop County (Seeman 1941: 181), and the *Oregonian* reported that by 1924 cranberry acreage had increased to more than 100 acres in Clatsop County, with most of it centered on the northern portions of Clatsop Plains (Allen 2006). Like their Washington counterparts, farmers on Clatsop Plains used cranberry farming as a means of eking out additional income from boggy lands. Such cranberry bogs were established on what are now the southern edges of the Fort Clatsop sub-unit of Lewis and Clark National and State Historical Parks.

Still, the nascent cranberry industry had stagnated in both states by 1920 and contracted significantly in the following decade during the Depression. Geographer Albert Seeman reported in a 1941 study that there were only about 75 acres of cranberry bogs left in Oregon (Allen 2006). Most cranberry growers found it a better business decision to let bogs revert to swamp and marsh (Weathers 1983: 46).[54] These effects were ameliorated somewhat by the research and local promotional efforts of the Cranberry Investigations Laboratory, established at Long Beach as a branch of Washington State College (now WSU) in 1923, with the intervention of Ilwaco banker and state senator Percy Sinclair.[55] Furthermore, during World War II, the U.S. government asked farmers to commit sufficient amounts of their agricultural products, including cranberries, to the armed forces to feed the troops, resulting in an increase in local cranberry production. Along with this spike in military demand came innovations in harvesting equipment and improvements in cranberry drying and freezing technologies that aided the industry significantly in the post-war years.[56] Immediately after the war, cranberry operations on both sides of the Columbia began to organize. These efforts were reminiscent of the Lower Columbia Cooperative Dairy Association, with most producers organizing the sale and distribution of their crop through the newly formed National Cranberry Association. By 1959, Ocean Spray Cranberries, Inc., absorbed the functions of the National Cranberry Association and remains perhaps the only nationally important agricultural operation with significant interests in the Columbia-Pacific region, using cranberries from both sides of the river to produce sweetened dried cranberries, cranberry sauce, and frozen cranberries especially for the holiday market.[57]

The 20th century saw many other, mostly fleeting, agricultural ventures. There were brief markets for local bentgrass seed and experimentation with ornamentals, such as lily bulbs, ornamental water lilies, and ornamental mosses. Beginning in 1930s, some farmers began to raise mink for their pelts. By the mid-20th century, up to

forty mink farms operated, many using fish waste from local processors; most ceased operations as the fur market evaporated later in the century. A few small Christmas tree and berry farms persist, as do very small-scale dairying, beef cattle, and sheep operations. In light of the complexities of forest management, there has also been experimental cropping of woody plants to produce pulp on old floodplains, with loblolly and radiata pine, poplars, and eucalyptus being among the plants tested in recent times. The prevalence of vegetable and orchard crops declined significantly by World War II, but interest in the crops has rebounded in recent years, especially propelled by various small but successful organic farming operations that continue to expand in the region.

If the history of agricultural reoccupation transformed the landscape, so too did it provide an avenue for the introduction of a plethora of non-native plants, many of them invasive. A diverse assortment of non-native grasses and forbs arrived in hay, straw, and livestock brought to the region from elsewhere. Certain ornamental plants—those adapted to disturbed ground and leached, acidic soils—were especially problematic. William Hopson brought Scots broom to the Clatsop Plains in the 1840s as an ornamental (the CCC and Oregon State Parks also planted it in later years for dune stabilization), and the plant now occupies many of the Columbia-Pacific's fallow fields and sandy margins (See n.d.). There was even an official Scotch Broom Festival that persisted through the 1920s and 1930s, until people's enthusiasms for the highly invasive plant began to wane (Adams n.d.). Foxglove, a European native, began to spread aggressively from gardens, prompting local laws forbidding its careless redistribution (Miller 1958: 204). Today it turns fallow farmlands and forest clearcuts bright pink throughout the summer. The "Himalayan blackberry," apparently coming from the Caucasus Mountains by way of Britain, arrived early, too, escaping gardens and occupying the cleared margins of settlements, its seeds being all too happily distributed by birds and other animals. And other ornamentals have become a source of concern in intervening years: European holly and English ivy have made their way from gardens into forests, and purple loosestrife and yellow iris have crept into wetlands. In more recent times, the ornamental Japanese and Sakhalin knotweeds have thrived, their rootlets being transported inadvertently with composts and soils, eagerly taking a foothold and surviving the relatively mild Northwest coastal winters in stride.

The legacy of early agricultural experiments in dune environments continued to pose a significant challenge to the residents of the Columbia-Pacific region into the 20th century. As a result of grazing livestock, but also jetty development and other disturbances, there were roughly 3000 acres of exposed active sand dunes on Clatsop

Plains by the early 1930s. These dunes threatened adjoining farmland, forests, lakes used for recreation, and navigational channels. Though the Oregon Railway and Navigation Company Railroad had recruited sand stabilization specialists, and the Army Corps of Engineers launched their own sand stabilization projects (as will be explained in later chapters), this had little effect on the overall stability of Clatsop Plains.

By 1935 an estimated 40 million cubic yards of sand had blown inland from the old foredune that extended from the mouth of the Columbia River to Tillamook Head. The foredune was almost completely destroyed as the sand redeposited inland. Local residents and the Clatsop County government requested assistance from the USDA Soil Conservation Service (SCS). The most complete and extensive stabilization project undertaken in response to these changes was called the Warrenton Dune Control Project, though its influences extended well beyond that town. The SCS cooperated with the county Agricultural Experiment Station and the Extension Service and involved the CCC (Reckendorf et al. 1985: 263). CCC built Camp SCS-7 at Warrenton, Oregon, to house the manual laborers who were to assist in stabilizing the dunes. CCC enrollees established a temporary camp at Coos Bay, where, under the direction of SCS, they dug culms of non-native European beachgrass (*Ammophila arenaria*) that were cleaned, bundled, and shipped to the Warrenton project to establish a nursery. The SCS began collecting plant material in November 1935, and by March 1936 it had established the 215-acre Astoria Nursery Unit to produce beach and dune grasses, collect seed, produce shrubs and trees, test plant fertilization, and assess cultural methods of dune stabilization (Carlson et al. 1991; Reckendorf et al. 1985).

Studies at the SCS Warrenton Dune Control Project suggested they should revegetate the dunes of the outer coast in a three-step process: (1) place sand fencing to establish a foredune immediately above the beach to reduce the inland movement of sand from the beach; (2) establish grass cover on the foredune; and (3) permanently stabilize the dune with herbaceous or woody vegetation, which usually follows the grass. The SCS tested 75 species of native, naturalized, and exotic shrubs at their Astoria nursery. They determined that the species best suited for stabilizing the dunes of the Columbia-Pacific region included the native Seaside lupine (*Lupinus littoralis*), but were largely non-native plants: Scots broom (*Cytisus scoparius*), tree lupine (*Lupinus arboreus*), and coyotebrush (*Baccharis pilularis*). They also favored largely native trees for permanent stabilization, including shore pine (*Pinus contorta*) and Sitka spruce (*Picea sitchensis*).

By January of 1938, SCS crews had planted beach grass from the Columbia River mouth to Gearhart, a distance of 13 miles. Similar plantings were installed on certain parts of the Long Beach Peninsula. After the introduction of European beachgrass, they followed with plantings of other plants on their palette. As W.T. White, of the SCS Regional Agronomy-Range Section headquartered in Spokane, wrote in 1938 to P.G. McGrew, Assistant Regional Conservator, *"it might be pointed out that the dune topography is Nature's way of stabilizing unstable soils such as we have at Warrenton, and that all we are trying to do is to assist Nature in reforming such stabilized topography"* (White 1938b). They were largely successful in this goal. The foredune was completely reestablished from the Columbia to the Necanicum estuary—including the sunset Beach dunes— and in time even began to expand seaward as the Columbia jetties increased sand input and planted vegetation expanded into new places (Carlson et al. 1991; Reckendorf et al. 1985).

The SCS and laborers from the CCC completed most of the initial control work on the Warrenton Dune Control Project by 1941. That spring, dune area landowners organized a soil conservation district as a local unit of government under Oregon state law. The conservation district, with technical assistance from SCS, administered further planting projects and provided for maintenance of the planted dunes. The Astoria Nursery Unit continued as a fully staffed SCS nursery until 1944. By that time, the unit had leased a 413-acre area that was operated by the Warrenton Dune Soil Conservation District from 1944 to 1949, primarily to provide shrubs and trees for permanent stabilization. SCS discontinued its support of the nursery in 1954 as part of reorganization of its plant materials program. Still, because of the original severity of the dune activity prior to 1935, the district established an ordinance to enforce proper land use for the area, which remains in effect into modern times. The Warrenton Dune Soil Conservation District has been consolidated into the Clatsop Soil and Water Conservation District, a county-wide conservation district. Meanwhile, many of the plants originally established by the SCS have become invasive, occupying areas well beyond the original project footprint (Reckendorf et al. 1985: 263).[58]

Similar efforts to control, and sometimes turn back, the negative effects of early agricultural experimentation were also applied to the tidelands. The 1936 Federal Flood Prevention Act provided for the creation of diking districts to coordinate efforts, helping to fund and consolidate what had been largely informal associations of waterfront farmers who coordinated the diking of their adjacent pastures. Dikes were built around tidelands in the Fort Clatsop area, turning the almost peninsular fort site into a high point along a relatively straight shoreline consisting largely of

Figure 6.11 – In addition to working at area farms, Civilian Conservation Corps workers of the 1930s, such as these men in Pacific County, aided in early dune stabilization efforts, propagating and planting European beach grass and other species, as well as cutting and transplanting native grass sod, to stabilize portions of the shoreline that had been overrun with blowing sand due to heavy grazing, jetty construction, and other changes in the preceding century. Photo courtesy Washington State Historical Society.

diked tidelands on the Lewis and Clark River estuary. While there is evidence of pre-1936 diking in this area, the remnant dike structures visible today largely date from after the FFPA legislation. By the post–World War II period, the widespread availability of heavy equipment brought a burst of new dike construction and the consolidation of numerous small diking districts, allowing tideland farmers to expand theircoordinated diking efforts like never before. By the mid-20th century, some 65 percent of the tidally influenced Columbia River floodplain and roughly 40 percent of the salt marshes of Willapa Bay had been reclaimed through diking (Proctor et al. 1980). In recent decades dike breaching had become popular as a mechanism of wetland and salmon habitat enhancement along the estuaries of the Columbia-Pacific region. Dikes are now being removed with almost the same zeal and speed as they were being added to the landscape 100 years ago. Several such projects have taken place on the lower Columbia in recent years, some involving sites within the Fort Clatsop portion of Lewis and Clark National and State Historical Parks, such as Otter Point and Colewort Creek (NPS 2009).[59]

7 A Rush of Silver

The Rise and Fall of Salmon Canning on the Lower Columbia

Of the many resources defining this coast, salmon are most iconic. Salmon fishing and the cultural and occupational traditions supporting the industry, have long defined the Columbia-Pacific region and the larger Pacific Northwest. While most rivers and large streams in the Columbia-Pacific region are home to salmon, the Columbia River stands apart. For a time, the Columbia estuary was the epicenter of the salmon industry in the Pacific Northwest, and arguably the world. The river's salmon population was of monumental scale, while the sprawling 260,000 square mile Columbia Basin possessed all the habitat diversity required for an abundance of all five species of North America's Pacific salmon—Chinook, coho, chum, pink and sockeye. For a time in the late 19th century, roughly forty canneries lined the banks of the estuary, bustling with Chinese factory workers and the steady traffic of fishermen, a group comprised largely of Scandinavian immigrants.

Still, the salmon industry that took shape on the lower Columbia in the 19th century was short-lived. Arriving in the wake of the California gold rush, fleeing the overtaxed rivers in California and the American East, the canning industry was a resource bonanza of unique proportions. Yet it only lasted a few decades' time, cannery interests soon moving on to relatively untapped waters in Alaska and British Columbia. Piers and pilings, left as testament to this period, still line the estuary today, along with a resilient fishing industry that has eked out an existence into modern times, though the industry persists with smaller catches, alternative species, and enduring linkages to an Alaska fishery that was arguably spawned on Columbia River shores. While the story of fishing on the lower Columbia is vast, and while it has inspired a historical literature of suitably impressive scale, we focus here only on a few highlights—the fundamentals and those elements that must be understood as part of the larger history of Lewis and Clark National and State Historical Parks.

The salmon harvest was the very foundation of the Native American communities that lined the river's banks, and was the cornerstone of Native subsistence and

society. There was a thriving Native "fishing industry" at the time of European contact. Even the Chinook salmon, the premier commercial fish of the river, would be named for the Native people on its lower reach, who depended so heavily on the species for their subsistence and maintained positive relations with the salmon through strictly observed ceremonial protocols. This was not merely a subsistence fishery, but a source of considerable wealth to those tribes so fortunate to live at the mouth of the Columbia. The Clatsop were named for their principal product, pounded dried salmon, which was a major trade good, lightweight and easy to transport to distant places by canoe. Such seafood products could be traded for dentalia money shells, canoes, furs, even slaves, which were themselves convertible into other forms of wealth. The Clatsop, but even more so the Chinook, were widely known to share their salmon fishing grounds with visiting tribes, which not only created bonds with other tribes, but fostered various obligations that were reciprocated with access to goods or resources found in the other tribes' lands. When the earliest ships arrived on the Columbia, the Chinook and Clatsop provided salmon in trade, doing so without hesitation, in a manner that reflected this deep history of salmon—not only as a food product but as a commercial item and a mechanism for forging bonds. In spite of sustained efforts by the Hudson's Bay Company, commercial canneries, and other organizations to squeeze out Native competitors along the river, Native people have remained active participants in the procurement and exchange of salmon into the present.

As noted earlier in this document, the HBC, too, entered the salmon business, especially from their Fort George outpost in Astoria. The Company relied significantly on Native American fishermen for their supply of fish, while Native Hawaiian and other employees sometimes fished for salmon by net, and worked to process, salt and barrel salmon for distant markets. A significant portion of the Company's salmon production was shipped to Hawaii for local consumption or to be shipped on to other places in the Pacific linked to Hawaii by fur trade shipping routes. Especially after the epidemics of 1830, the HBC also sold salmon to visiting ships, both barreled and fresh. This wasn't necessarily meant to be a profitable enterprise. It was undertaken in part to prevent visiting ships (many of them American) from developing trade relationships with area tribes that could interfere with the Company's monopoly of local trade. This early salmon trade was in most respects supplementary to trade in furs. Nonetheless, for the first time it introduced the Northwest's iconic fish to consumers and markets that later became key to the ascendance of a canning industry on the lower Columbia.

Figure 7.1 – Willapa Bay Oyster shuckers, circa 1909. Fueled by demand in the California gold fields, oystering was one of the few occupations available on Willapa Bay in the mid-19th century, and prompted some of the earliest non-Native settlement on this central Pacific County waterway. Photo courtesy Washington State Historical Society.

Still, as settlers moved into the area in growing numbers in the 1840s and the Hudson's Bay Company's influence waned, the Company could no longer maintain its position as middleman in the salmon trade. Along the whole of the Columbia estuary, Native American fishermen were an entrepreneurial presence, selling directly to settlers in growing numbers, and developing their own fishing "industry," catering to the needs of local markets and largely independent of European control. Referring to the general pattern of salmon fishing on the lower Columbia in 1844, settler Peter Burnett noted that

"All the salmon caught here are taken by the Indians, and sold to the whites at about ten cents each, and frequently for less. One Indian will take about twenty per day upon an average. The salmon taken at different points vary greatly in kind and quality, and it is only at particular places that they can be taken. The fattest and best salmon are caught at the mouth of the Columbia" (Burnett 1902: 421).

In this way, Native American fishing supported the fledgling settler communities on the river's mouth and in the Portland Basin, and this early "commercial" fishing was largely restricted to those two areas.

As with lumbering and other fledgling industries, the California gold rush created the first major impetus for non-Native commercial fisheries in the American period. The shipping of salmon to supply these markets was not always simple, for fish spoiled in transit. Coopers and salteries operated on the lower Columbia to help overcome this problem. Some of the earliest successes in the salting and shipping of salmon were connected to places within the parks. For example, Irish-born Patrick (P.J.) McGowan (1817-1912) was a significant early innovator at Station Camp. First coming west with the gold rush, he relocated to Portland buying the missionary land claim at the Chinooks' Middle Village with a vision of a future salmon packing empire based at that strategic location. There, in the place that would later be renamed McGowan, Washington, he developed a salmon salting and packing operation in the 1860s, serving both California and Northwestern markets and building the foundation for one of the more enduring salmon packing companies in the Columbia-Pacific region. First entering the market with salted and barreled salmon, McGowan developed his early operations with the considerable involvement of Chinook workers. Ironically, the workers became fishermen and factory labor for a salmon packing plant built atop what had been one of their premier village sites.

McGowan oversaw fish gillnetting operations in the prime waters immediately offshore, but also developed land-based fishing operations in the adjacent waters immediately up- and downstream. Hand- or horse-pulled seines operated immediately upstream, while McGowan and his contemporaries had vast complexes of weirs immediately downstream of the McGowan operations. (And at least one weir was operated not far offshore from the National Park Service Dismal Nitch area.) McGowan, in fact, developed these shoreline and shallow-water weirs so ambitiously that by the early 20th century he was the subject of litigation for blocking boat navigation through the Megler area with all of his salmon trapping infrastructure (Weathers 1989; Seattle Post Intelligencer 1912).[60]

Oysters, too, would be loaded onto ships headed for the growing California market—so long as they were kept moist and cool, could be kept alive for extended periods, and served fresh in the eateries of San Francisco and beyond. The native Olympia oyster thrived in the shallow and relatively saline bay waters of Willapa Bay. In the early years, a number of mostly American-born entrepreneurs of East coast origin began to harvest wild oysters in that bay for the California market. Like McGowan, they relied heavily on the labor of the Chinook, for whom the oyster business served as a point of entry into the non-Native cash economy. Some of the earliest first-hand accounts were by Swan (1857: 60), who observed,

"These oysters are found on the flat and in shoal water, in different parts of the Bay, and are readily procured, either by collecting them by hand at low ride, when the flats are bare, or, in the deeper water, by oyster-tongs, rakes, or dredges....When the tide is nearly out, the boats and canoes start for the oyster-beds...Each oysterman has a bed, which is marked by stakes driven into the flats...as they arrive at the beach a lively time ensues, trading, measuring, and shoveling the oysters, and for an hour or two all is bustle. This over, the day's work is done, and the Indian goes off to eat and lounge away the rest of the time till the next tide, and the white settler to work in his garden, or do what work is necessary to be done around his house. The arrival of a schooner from San Francisco is a time of general excitement, and particularly at that early time when I first arrived, for, as we had opportunity to replenish our supplies except by the schooners, the arrival of one was a matter of moment."

Figure 7.2 – Harvesting the oyster beds of Willapa Bay in the early 20th century. The early industry focused on the harvest of the naturally-occurring and native Olympia oyster on the bay's broad tidal flats, but several influences – such as intensive harvesting and water quality – turned attention to introduced species, seeded on privately owned "oyster farms." Photo courtesy Washington State Historical Society.

Oystering provided one of the first incentives for non-Native settlement on Willapa Bay in the 1850s, drawing these settlers largely from the emerging towns on the lower Columbia. Surveying the region in 1852, James Alden noted of Willapa Bay: *"At present there are no whites in the Bay, except a few who are employed in collecting oysters for the California market"* (Alden 1852 in Swan 1857: 24). The town of Oysterville, founded in that year, became the principal port of call for schooners carrying oysters to California, and would remain a central hub of oystering into modern times. Within a few decades, however, the native oysters would be largely depleted. By the end of the 19th century, the tidelands of Willapa Bay were divided into privately

owned "oyster farms," seeded with imported stock (Espy 1977; Kincaid 1951; Thompkins 1932; Swan 1857).[61]

It was the industrial-scale processing and sale of salmon, however, that transformed the entire Columbia-Pacific region. By the latter half of the 1860s, the salmon industry would begin to overcome the challenges of distant markets, moving beyond small-scale salteries such as the early McGowan operation to become a formidable presence on the lower Columbia. The Hume brothers—George, William, Joseph and Robert—would be key figures in this early history. For many years before they came west, the Hume family had overseen a family business in the harvest of Atlantic salmon on the Kennebec River in Maine. Canning was a new technology, being applied to the Northeastern fisheries by the 1840s, a technological shift that the Humes had witnessed firsthand, and participated in, during the mid-19th century. The runs of Atlantic salmon there had been in steady decline through the same period, falling victim to both overharvesting and water pollution in the steadily urbanizing Northeast. The Humes had long considered a move into the largely untapped Pacific salmon runs of the West, yet the West coast market for salmon had been small, and formidable barriers existed to shipping salmon over land to East coast markets. The discovery of gold at Sutter's Mill, California, however, in 1848 had begun to change the equation. As California's population surged in the coming decade, the Humes prepared to mobilize for a new salmon cannery that would supply the gold fields and the new towns of that territory. Together, the family-run partnership of George (G.W.) and William Hume, and Andrew Hapgood constructed the first salmon cannery on the Sacramento River in 1864, initially operating the entire operation on a floating barge—the first industrial canning operation on the West coast. Yet this Hume operation began to founder almost as soon as it started, as salmon populations in the Sacramento River plummeted, falling victim to habitat destruction and declining water quality caused by widespread hydraulic gold mining in that river's headwaters. Frustrated by the steadily decreasing salmon runs on the river, the partners scouted for new locations distant from the gold fields (Dodds 1959; de Sales McLellan 1934; Hume 1920, 1903).

After some searching, the Hume brothers and Hapgood decided to move their operations to the Columbia River, known for its legendary salmon runs, with the intention of shipping canned salmon back to the burgeoning communities of California, and beyond.[62] They were joined at this point by two other Hume brothers, Robert (R.D.) and Joseph Hume, building the Columbia River's first cannery at Eagle Cliff, in what is today Wahkiakum County. Together, these founders and their employees initially constituted the entire salmon canning "industry" on the river.

Figure 7.3 - Joseph Hume Brand Salmon label, from 1882, showing a likeness of Joseph Hume, and identifying the cannery's provenience in Knappton, Washington Territory. Image courtesy of Oregon State Archives, Historical Oregon Trademark #113.

R.D. Hume recounted the founding of the first cannery on the lower Columbia in a 1903 issue of the fishing industry journal *Pacific Fisherman*:

[O]n account of the scarcity of salmon in the Sacramento [river]...in the spring of 1866 William Hume went to the Columbia to see what could be done...G.W. Hume also went to the Columbia, for the purpose of selecting a site and building a cannery and other necessary buildings, that should be ready for the reception of the others, who went there some time in October of that year. The point selected by him was at Eagle Cliff in Wahkiakum County, Washington, and part of the cannery now owned and operated there by William Hume is the original building erected by him. During the winter of 1866-67 we put our machines in order and made the nets and cans for the spring season of 1867, at which time we packed 4,000 cases of 48 cans each.

At the time of our arrival there was but little business done on the Columbia River below Portland...At that time the business of the lower Columbia cut but a small figure—a wheezy old mill at Astoria and a dilapidated affair of the same kind at each of the other places on the Columbia, except Cathalamet [sic], which had nothing in the way of manufactures, comprised all there was to furnish a livelihood for the laborers of that section, except that furnished by the few engaged in salting salmon, and that work was mostly done by Indians (Hume 1903: 12).

Using what was then relatively new metal canning technology, the Hume cannery could ship Columbia River salmon almost anywhere in the world, with little chance of spoilage, and in standardized sizes and weights that could be accommodated by an increasingly standardized shipping industry. Learning of the Hume's success, other cannery developers appeared along the shores of the Columbia estuary in the months and years to follow, largely replicating the Hume model. While all salmon were eligible, it was Chinook salmon, the largest salmon of the River, with its delicious and deep orange, oil-rich meat, that became the cornerstone of the new industry (Dodds 1959; Hume 1920; Barker 1920).

The heavy seasonal demand for workers in salmon canning, especially in the early years, created challenges in the thinly-inhabited region of the Columbia-Pacific. Native workers were relatively few in number by this period, had competing demands on their time, and were not eager to help with the wholesale killing and processing of fish for use by people in remote places. Local non-Native settlers often had competing obligations too, in the form of new enterprises and homesteads, often leaving just a small and itinerant non-Native workforce to support the fishing industry. With such limited options for local cannery workers, the Humes began to rely on contractors who recruited Chinese laborers to work in the region—a pattern that would be repeated by many cannery owners in the Columbia-Pacific. These contractors were established in Oregon's newly forming cities as well as other major Western cities, largely in response to demand for post-Civil War railroad labor.

At the time, contractors had recruited a large number of laborers from counties near the Pearl River delta in Guangdong. In 1870 George Hume hired a dozen of these Chinese workers—including an oft-mentioned twenty-year-old man named Ah Shing—for positions in the canning line, plus two as tinsmiths and one as a cook. These workers supplanted a supposedly belligerent "*riff-raff and criminal element*" of non-Chinese workers. The Humes found Chinese workers to be dependable and efficient. They also accepted lower wages than American counterparts and tolerated risky industrial working conditions with few complaints. The rush of cannery construction in the 1870s was serendipitously timed, in this respect, coinciding with the completion of many of the West's largest railroad projects, so that contractors seamlessly shifted Chinese workers from railroad to cannery crews. After 1873 the canneries grew in direct proportion to the availability of Chinese workers, and by 1874, twelve of the thirteen Columbia River canneries in operation had an entirely Chinese crew. Encouraged by their availability and performance, cannery owners increased production by increasing the size of their Chinese crews, allowing them to avoid costly investments in mechanization. By mid-decade Chinese crews had

become the industry norm in salmon canneries along the Pacific coast. From Hume's original 15 Chinese workers, the number by 1881 had soared to more than 4,000 Chinese immigrant workers, working in 35 Columbia River canneries.[63] Indeed, for a brief time, the number of Chinese immigrants living in the Columbia-Pacific roughly matched that of native-born Americans, reflecting both the regional prominence of the fishing industry and of the Chinese place within it (Friday 1994; Newell 1998; Dodds 1959; Hume 1920).

Figure 7.4 – Chinese factory workers processing freshly-caught Chinook salmon. Chinese cannery labor was a cornerstone of the lower Columbia canning industry from its beginning in roughly 1870 until the first decades of the 20th century, when various exclusion laws prompted an exodus of Chinese immigrant labor. Photo courtesy Oregon Historical Society.

While canneries were found along the Columbia as far upstream as the Dalles, they were disproportionately concentrated on the lower river, where the fish quality was best and shipping by boat was easiest (see Table 1).[64] Soon, the number of canneries ballooned, lining the north shore of the Columbia from Grays Bay to Ilwaco, especially dominating the waterfront of Astoria on the south shore. The number of canneries in Astoria illustrates the explosive growth of the industry at the mouth of

Figure 7.5 – Chinese immigrant men, but also sometimes women and children, worked in cannery support positions, such as applying the distinctive brand labels to cans and boxes – here, labels are applied for the "Bon Bon Brand Salmon." Photo courtesy Oregon Historical Society.

the Columbia, and the demographic effects of that change. The first cannery opened in Astoria in 1874, and the second the following year, as the *Weekly Astorian* proudly observed that the *"success of the Astoria canneries establishes the fact that Astoria is the place for fish canneries."* By 1876 the town had five canneries, eight in 1877, and fourteen in 1880. Owners of these new plants followed Hume's practice and hired Chinese labor. The 1880 census listed 2,122 Chinese immigrants living in Astoria and identified some 77 percent of them as cannery hands (Friday 1994: 56).

During the height of the salmon industry on the lower Columbia (roughly 1880 to 1910), arriving a few years later than the Chinese, Scandinavian immigrants flocked to the mouth of the river. Many sought work as fishermen. A large proportion of arriving Swedish and Norwegian men, and almost all of the early Finnish men of working age who immigrated to the region, were fishermen for at least part of their working lives. In Astoria for example, according to the 1880 census, some 133 Finns

were listed as fishermen or as "working in fishing," and only 12 worked at other occupations— representing some 92 percent of the Finnish immigrant workforce. By 1890, a solid majority of Astoria-based fishermen were Finnish immigrants (Hummasti 2002: 139).[65] Some worked directly for the canneries as fishermen and in other supporting roles, while a sizeable number worked as independent fishermen, selling their catch on contract or as independent sellers on a per-pound basis. Most notable for their contributions as fishermen and labor for the industry, these immigrants also readily entered managerial roles. On the Washington side of the Columbia in Ilwaco, a Finnish immigrant named B.A. Seaborg established the Aberdeen Packing Company in 1880, one of the earliest canneries in Pacific County (Jacob 2005; Hummasti 2002). The peak in the salmon canning industry on the Columbia-Pacific was thereby timed perfectly to the chronology of Scandinavian immigration. Scandinavian men, Norwegians and Finns in particular, were eagerly recruited to man seine boats and other maritime fishing operations. The Dillingham Commission's investigation of the fishing industry showed that Scandinavians represented by far the largest proportion in the regional umbrella labor group for fishermen, the Fisherman's Protective Union, with nearly 45 percent of that organization's membership in 1908 (Dahlie 1970: 69-70).

As the Scandinavian population grew, the roles of immigrant labor became increasingly segregated in the fishing industry. The canneries employed Chinese men to work lines butchering and cleaning fish, as well as constructing and packing cans. The White fishing community—Scandinavian, native-born American, and otherwise—maintained strict prohibitions on Chinese labor. They all but prohibited Chinese participation in non-cannery aspects of the industry. Various sources suggest that some of the few Chinese men who attempted fishing commercially in the late 19th century lost their lives for making incursions into what was considered the exclusive occupational domain of White fishermen (Jacob 2005: 9). Furthermore, from 1882-1924, Congress passed a series of Chinese exclusion laws, making it increasingly difficult for Chinese to enter and work in the U.S. Therefore, by the 1890s, the Chinese population was in decline, as immigrants began to move to urban areas in search of employment, to pursue work in canneries elsewhere on the coast (such as British Columbia), or to move back to southern China. By 1920, Scandinavian women who had recently immigrated to the area—Finnish women in particular—had largely replaced Chinese workers in the canneries (Lewis 1993: 126).

The Hume cannery, and those that followed, quickly became virtual small towns, complete with bunk houses and mess halls for workers, tool and machine shops, boat and net repair sheds, and many other types of supporting infrastructure.

Table 6.1: Salmon canning companies on the Columbia River, 1890

Shaded Canneries located within Clatsop, Pacific and Wahkiakum Counties

Location	Company	Brand names
Oregon		
Astoria	Astoria Packing Co.	Astoria Packing Co.; Kinney's
Astoria	Badollett & Co.	Badollett & Co.
Astoria	Booth & Sons	Oval
Astoria	Columbia River Packing Co.	Cocktail
Astoria	Devlin, John A. & Co.	John A. Devlin & Co.
Astoria	Elmore, Samuel	Magnolia; Seal
Astoria	White Star Packing Co.	White Star
Astoria	Eagle Canning Co.	Favorite
Astoria	Fisherman's Packing Co.	Fisherman
Astoria	Scandinavian Packing Co.	Scandinavian Fishermens'
Astoria	George & Barker	Epicure; Point Adams Lighthouse
Astoria	Hanthorn & Co.	Hanthorn & Co.
Astoria	Hume, George W.	Flag
Astoria	I X L Packing Co.	I X L
Astoria	Occident Packing Co.	Mermaid
Astoria	Washington Packing Co.	American
Maple Dell	Buchheit Packing Co.	Cascade
The Dalles	The Dalles Packing Co.	Otter
Cascades	Warren & Co.	
Clifton	Oregon Packing Co. (J.W. & V.C.)	Medal
Washington		
Ilwaco	Aberdeen Packing Co.	Bear
Knappton	Knappton Packing Co.	Beacon
Knappton	North Shore Packing Co.	Argonaut
Chinook	McGowan, P.J. & Sons	Keystone
Pillar Rock	Pillar Rock Packing Co.	Pillar Rock
Brookfield	Megler, J.G. & Co.	Stag; St. George
Waterford	Hapgood & Co.	Hapgood & Co.; Waterford Pressing Co.
Eureka	Eureka Packing Co.	Star
Cathlamet	Warren, F.M. & Co.	Monogram (F.M.W. & Co.)
Bay View	Ocean Canning Co.	Esquimaux
Eagle Cliff	Hume, William	Eagle

From *Select Committee on Relations with Canada, US Senate, 1890*

Canneries were situated on portions of the waterfront with slow and deep waters, often with little or no land access, where both small fishing boats and large shipping schooners could easily offload whole fish, or bring canned fish onboard. Fishing was initially carried out by small gillnets, often extended by hand or rowboat, but these would be augmented with horse-drawn nets, sailboats, seines, fish traps, mechanized "fish wheels"—on land or boat—that scooped fish from the shallows, and myriad other technologies. In time, the land-based technologies would often be owned, or very much controlled, by canneries and packing organizations, while the waterborne fishermen were comparatively independent.

Figure 7.6 – Especially after Chinese labor began to move out of the region, women – immigrant Finnish and Scandinavian women in particular – began to work in the canneries in much greater numbers. Here, a woman works in one of Pacific County's Columbia River canneries in the early 20th century. Photo courtesy Washington State Historical Society.

The earliest gillnetting boats on the river had been propelled only by oars, drawing nets out into the river's channels and pulling them back in by hand—heavy with salmon, if the gillnetter was fortunate. Yet progress was slow in these little rowboats, and sometimes dangerous in the river's swift currents. With the addition of sails in the 1870s, the gillnet fleet provided one of the most efficient means of harvesting salmon on the lower Columbia. The canneries of the Columbia-Pacific were supported in no small part by this "butterfly fleet"—the salmon gillnetting

boats which plied the lower Columbia River in the late 19th and early 20th centuries. The small, split-rigged fishing vessels earned the boats their nickname, resembling butterflies underneath the two triangular sails that propelled them through the water. At one time, there were over 2,500 of these double-ended gillnet boats fishing the waters of the lower Columbia, often competing directly with commercial operators of fish wheels, seines, and land-based gillnetting. These boats were relatively inexpensive to maintain, required only two or three crewmembers, and were highly mobile, yet also quite vulnerable to rough weather. Residents of the small port towns on both the Washington and Oregon sides of the estuary took part in this fishery—Scandinavian immigrants most prominent among them, but also men of other North European extraction, immigrant and American-born fishermen, and a small number of independent Native American operators (Tobias 2012; Engeman 2005; Martin 1994; Andrews and Larsen 1959; Smithsonian Museum of American History n.d.).[66]

Figure 7.7 – Fishwheels brought industrial technologies and values to the practice of Columbia-Pacific region fishing. These contraptions, of various designs, were designed to rotate in the river shallows, scooping up fish in mesh cages or similar and depositing them in a holding pen for later processing. They were highly effective in some settings, providing a regular supply of fish even when fishermen were scarce, but were eventually banned as one of several conservation measures on the Columbia River. Photo courtesy Washington State Historical Society.

Figure 7.8. - Men seining for salmon with hand-pulled gillnets on the lower Columbia River, in 1914. African-American men, while not widespread in the salmon industry historically, sometimes found work on fishing crews. Image from Plate 6-B in *U.S. Geological Survey Bulletin 614, 1916, Washington D.C.*

Meanwhile, salmon-canning methods changed little before the twentieth century. William Wilcox of the U.S. Fish Commission described in 1896 a cannery on the Columbia River whose methods represented the standards of the time:

As a rule the factories are located adjacent to or very near the fishing-grounds, so that at the most but a few hours elapse from the time the fish are freely swimming until they are caught, delivered at the cannery, dressed, canned, cooked, and packed, thus insuring a perfectly fresh product, old or stale fish never being met with at a salmon cannery...The buildings connected with a salmon cannery are always built at the water's edge or partly over the water, so that vessels or boats may come alongside and deliver their fish and supplies or receive the packed products. As a rule they are large, roomy, one-story frame structures, the business of receiving, cooking, and packing of salmon all being in the one large, high, and well-lighted room. The lofts are used for the storage of empty packing cases, empty cans, nets, etc., and in some instances large rooms are there used for the manufacture

of cans. Adjacent to the cannery are the rude quarters in which the Chinese employees live, and nearby is usually the home of the superintendent. Chinese have a monopoly in the canning of salmon, but never engage in their capture. Before the season opens contracts are made with some large Chinese firm of San Francisco or Portland to do the work so far as relates to receiving raw products and turning the salmon over canned, packed, and ready for shipment. As a rule the fish are bought from the fishermen at so much apiece or per pound, a stipulated price for the season having previously been agreed on; but in some cases the fishermen are hired by the month, with or without board, the fishing boats and nets, in that event, being furnished by the cannery (Wilcox 1896: 583).

Figure 7.9 – A multiethnic gillnetting crew on Sand Island, south of Cape Disappointment, circa 1911, having just removed their catch of Chinook salmon from the nets, and beginning to load the fish for processing. Photo courtesy Washington State Historical Society.

The growth in the canning industry had been spectacular, with roughly 40 canneries operating simultaneously along the Columbia estuary through the halcyon years in the 1880s and 1890s. Competition was sometimes fierce, and canneries designed specialized labels, logos, and other marketing devices in an attempt to differentiate themselves from the pack.[67] In the early 1890s, when nearly all other branches of business were depressed, the salmon canning industry of Washington and Oregon continued to expand, and the fishing industry represented more than a third of the entire industrial workforce for those states (Wilcox 1896: 577).[68]

Figure 7.10 – The P.J. McGowan and Sons Cannery, McGowan Washington, at today's Station Camp, circa 1897. Little remains of McGowan's extensive cannery today. Photo Courtesy Columbia Pacific Heritage Museum, Ilwaco, Washington.

Amidst all of these developments, the McGowans retooled their fish salting operation at Station Camp, by this time one of the oldest fish processing operations on the lower river. P.J. McGowan took on his four sons as business partners and changed the name of their operation to P.J. McGowan and Sons. By 1884, they had completely redeveloped the saltery, building a cannery in its place—sometimes called the "Chinook Cannery." They later expanded their company's operations to include canneries on the waterfront of Ilwaco, very near the northwestern edge of Cape Disappointment State Park, as well as at sites along the shores of Willapa Bay, and at Warrendale and Dodson, Oregon on the Columbia. Unlike some canneries, a small and relatively stable community developed around the cannery, in part due to the enduring presence and investment of the McGowan family, whose commitments to the area arguably ran deeper than many of their industrialist peers. In P.J. McGowan's later years, he would fund a number of community institutions, including the St. Mary's Catholic Church, constructed in 1904, as part of the family's effort to foster a relatively coherent communal life in the cannery town.[69] That church as well as a 1903 cannery office and the 1911 McGowan family house still remain on the site.

Figure 7.11 - P.J. McGowan cannery label from the early 20th century. Image courtesy Columbia Pacific Heritage Museum, Ilwaco, WA.

This period also saw the development of fish processing facilities near the present-day National Park Service Dismal Nitch property. Joseph Megler, a German-born tinsmith turned cannery magnate, had operated a cannery and fish buying station on the western edge of the cove through the 1870s and 1880s.[70] Various sources suggest that the small fishing station built inside the cove—the operation that appears to be ancestral to those that built the pilings visible from park lands—was first constructed in 1880 by Astorian industrialist, Marshall J. Kinney.[71] Though not built by Megler, the structure was soon incorporated into the Megler operation following its 1880 construction. As Weathers notes: *"The site was initially a fishing station built by Astorian Marshall Kenney [sic] in 1880. Megler used the site for a fish receiving station in 1883"* (Weathers 1989: 40). President of Astoria Packing Company, Kinney was owner of the "Marshall J. Kinney" Cannery in the Uniontown district of Astoria, which was at the time the largest salmon packing operation on the river—a facility that was later listed (then delisted) on the National Register, and is partially reoccupied with retail space on today's Astoria waterfront. He would enter into occasional business ventures, including lower Columbia lumber milling, with his almost equally prominent brother, William S. Kinney. (Moreover, Kinney—his timing fortuitous—would soon move part of his assets from Columbia River canneries to recreational beachfront real estate, buying out the Phillip Gearhart Donation Land Claim in 1888 and platting and beginning sales of luxury homesites at "Gearhart Park" at the modern location of Gearhart, Oregon.) The Megler Cove site

Figure 7.12: At the peak of the salmon canning industry, the prime gillnet grounds sat just offshore from Dismal Nitch, as well as Station Camp and Fort Stevens. Megler represented a prime seine hauling area, and waters just to its west were crowded with weirs. From U.S. Commission of Fish and Fisheries, 1892. *Chart of the Lower Columbia River, Showing the Location of Salmon Apparatus, Fishing Grounds and Canneries in 1892*. Washington, D.C.

was a very small outpost of Kinney's much larger operation. When Megler acquired the land, it expanded his holdings to the west of the site, where he and partners Thomas Jewett and Jacob Chambers developed a cannery on land purchased in 1872 from Andrew Wirt. Megler continued to operate a cannery at that location but was increasingly dissatisfied with the suitability of this shoreline for large-scale shipping access—an issue that would plague the site's use throughout the salmon cannery period, and relegate his operations in the "Megler area" to a relatively minor role in that industry's history.

Megler also built cannery facilities many miles upstream, below Cathlamet, in the early 1870s. To support his operations, he leased the land on Megler Cove from a Knappton mill owner to develop a fish transfer station, completing the station—commonly called the Point Ellis (or "Point Ellice") Buying Station—at the site by 1883 (Appelo 1966).[72] The piers and structures in this area sometimes appear as an

"old fishing village" on 20th century maps, suggesting the extent of operations at this place. In the late 1880s and early 1890s, at the peak of the salmon canning industry, the principal gillnetting grounds in the area sat immediately adjacent to this rough and rocky reach of the River, extending roughly from Tongue Point and Grays Bay on the east to Point Adams and Sand Island on the west. When fishing was especially good, gillnetters from the butterfly fleet often stayed the night in Megler Cove, fronting today's "Dismal Nitch," returning to the adjacent fishing grounds the following morning. They thus avoided the long, slow trek to and from home ports each day. In their small boats, gillnetters also took refuge there, getting out of inclement weather and the bustle of the fishing grounds. The enduring presence of a fish transfer and buying station on the shoreline made this possible. It allowed gillnetters to unload their catches without having to proceed to distant canneries and then return to prime fishing grounds.[73] The site continued operations into the early 20th century, though the extension of the Oregon Railroad and Navigation Company rail line past the site undermined its use significantly with the demolition of shoreline structures associated with the site.

The profits generated by the canneries on the lower Columbia were astounding. Yet working conditions and wages in the canneries, and the price offered to fishermen for fish, did not improve commensurately. With so many Finnish immigrants entering the workforce, a growing number having been ousted from Russian-controlled Finland for labor activism and leftist sympathies, perhaps an organized response from fishermen along the lower Columbia was inevitable. In 1896 the fishermen's union waged a strike in response to the low prices being paid by the canneries at a time of exorbitant profits. Cannery operators called in the National Guard to break the strike. The strikers lost the battle, but the strike's effects rippled throughout the lower Columbia fishing industry. The cooperative movement, a particularly Finnish form of enterprise, had been popular in Finland around the turn of the 20th century, and immigrants brought its principles to America. After the unsuccessful fishermen's strike in 1896, some two hundred Columbia estuary fishermen, with Finnish immigrants in the vanguard, organized the Union Fishermen's Cooperative Packing Company in Astoria. This company helped fishermen to coordinate their sales to canneries in such a way that they influenced prices paid for their catch. Cooperation also allowed them to pool fish and other resources for the purpose of shared sales, shipping, and marketing that could function independent of cannery owners' control. The Fishermen's Cooperative Packing Company became a highly successful packing cooperative, and remained a fishermen-owned business until the late 1940s when it was sold to private interests (Jacob 2005: 17-21; Hummasti 2002: 142).

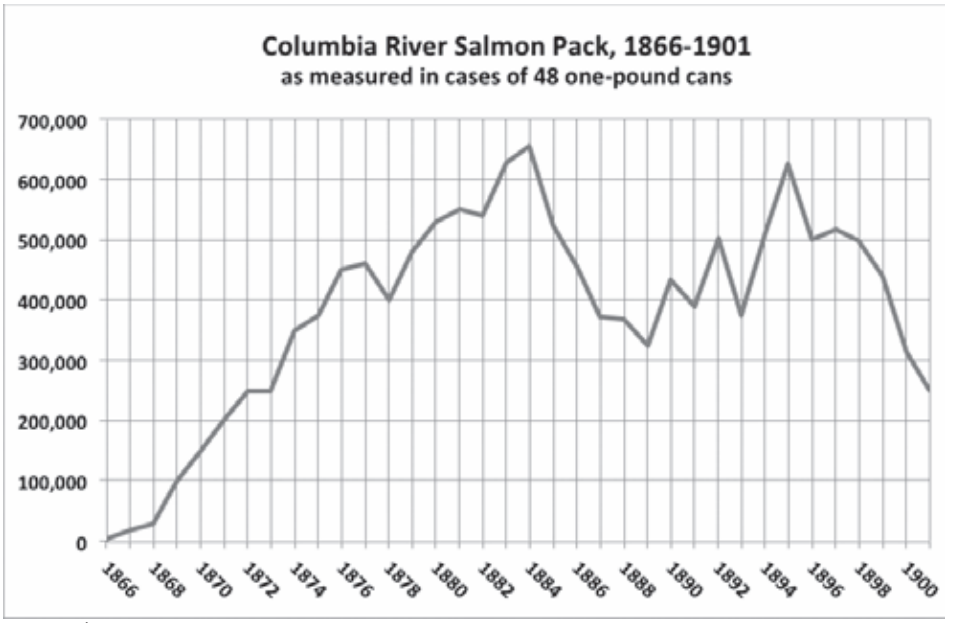
Shortly after the 1896 strike on the river, prominent industrialist A.B. Hammond completed the development of the railroad link connecting Astoria to the Northern Pacific Railway via Goble, Oregon. This effectively opened an eastern shipping route for Astoria canned salmon. The strike in conjunction with the newfound eastern markets had broad and transformative effects in the industry. Recognizing that the cannery owners held redundant assets (and were in a poor position to negotiate individually with an increasingly collectivized workforce), Columbia-Pacific cannery owners acknowledged a need to combine their assets and organize into their own, more cohesive corporate entity. Such an umbrella organization would create economies of scale in fish purchasing, shipping, sales, marketing, and almost every other facet of their business.

With A.B. Hammond leading the charge, many of the river's most prominent cannery owners agreed to combine forces and assets under a single corporate umbrella. Founded in 1899, the Columbia River Packers Association (CRPA) would serve as a significant galvanizing force in the later years of the canning industry. The original CRPA consisted of seven Astoria canning companies with ten canneries located on the Columbia. They included many of the key cannery owners associated with the larger history of LEWI lands, such as Kinney, Seaborg, Hammond, and others.[74] New York native Samuel Elmore, a Columbia River cannery owner and onetime partner of Joseph Hume, was a key figure in these early years of the CRPA, acting as the first vice president and general manager of the organization.[75] Elmore was fundamental in uniting the cannery owners to take part in the CRPA, and was widely heralded for his early success in the organization as a man that *"puts more Chinooks in tin cans and salt barrels than anybody on the river, who is salmon king of Tillamook, Coquille, Alsea, Umpqua and Siletz, who operates Tillamook's boat line and who is the newspaper power of Astoria"* (Morning Oregonian 1908:3). At the onset, the interests of each cannery owner that agreed to join the CRPA were entirely bought out, or cannery owners were given stock that equaled the value of their cannery, land, and other disposed assets (Bumble Bee Foods, LLC. 2012; Martin 2009, 1994; NPS n.d.).

In truth, the rise of organized labor may have been the least of the cannery owners' concerns. Among the ranks of these early industrialists, there was a growing realization that the fish supply was in peril. When canning operations on the Columbia River began in 1866, 4,000 cases were packed that first season and sold at an average of $16 per case. By 1872 the total pack reached 250,000 cases, and the price had declined to $9 per case. From 1866 to 1884, each successive year (with one

exception) saw an increase in the quantity of the salmon caught and processed. Salmon canning on the Columbia reached its peak in 1884, when more than 650,000 cases were packed for the season. Literally millions of pounds of salmon were being taken from the river each year. Following 1884, the catch declined sharply, to roughly half its peak. So began a cycle of similarly-sized peaks and valleys that would make fishing unpredictable until the salmon fishery entered a period of steady decline 40 years later as dams began to appear up and down the Columbia, with the catch never again reaching historic levels (Lichatowich 2001; Taylor 1999a, 1999b). In its 1894 bulletin, the US Fish Commission warned that over-fishing was imminent:

Up to 1888, practically the entire pack consisted of the king or chinook salmon, and the fishing season did not extend beyond the first of August. In 1889 the packers began canning bluebacks and steelheads to make up the deficiency in the supply, and extended their operations to the first of September...It is certain that the continuation of these fisheries under present conditions will eventually result in rendering them unremunerative. It concerns alike the whole people of the State, as well as those directly interested in the fisheries, that such regulations of the times, methods, and apparatus of these fisheries should be established and enforced as are necessary to maintain supply" (McDonald1894:



156, 165).

Source: *Pacific Coast Fisheries* 1903b: 7.

While the profits of cannery owners may still have been astounding, some in their ranks began to express concern about the sustainability of the industry—quietly at first, but with growing urgency as early and dire predictions were borne out by catch numbers. By the mid-1870s, lower Columbia cannery operators were already expressing concerns internally about the long-term viability of the industry. In 1877, a number of these cannery owners helped to organize and fund the Oregon & Washington Fish Propagation Company, which built a salmon hatchery on the Clackamas River—a tributary of the Columbia, via the Willamette River—that was then operated largely by the U.S. Fish Commission. (At around the same time, R.D. Hume—having developed secondary cannery capacities on the Rogue River—began to develop hatcheries on the lower reaches of that river Basin for similar reasons.) In the late 1880s and early 1890s, the industry became increasingly involved in early fish conservation efforts on both sides of the river, including the development of state hatcheries as well as state fish commissions and early fish wardens.

The earliest hatchery effort on the lower Columbia, and within the state of Washington, was founded near Chinook in 1893 amidst this foment, with the significant involvement of Station Camp cannery owner P.J. McGowan. In 1898, a special session of the Oregon legislature introduced a sweeping set of salmon protection measures, establishing a licensing system for industry to start developing hatcheries, imposing prohibitions on salmon fishing in many Columbia River tributaries, and requiring a wide range of specific conservation measures. By the early 1900s, these conservation measures were having little measurable effect. In 1908, the *Morning Oregonian* headlines announced a thirty to forty percent decline in salmon catches, for example, stating that the salmon supply was *"still going from bad to worse"* (Morning Oregonian 1908:3).

In a rare show of self-regulation, the CRPA intervened, calling for shortened fishing seasons, halting Sunday fishing, regulating mesh size, and restricted salmon fishing above the mouth of the Willamette. However, these measures were not enough to curb the diminishing salmon supply. Huge salmon harvests had taken their toll, surely, but a steadily growing proportion of the Columbia Basin was being urbanized, its forests felled and its grasslands converted to farms, with complex but often negative consequences for water quality and the integrity of spawning areas throughout the Basin. Modest salmon harvest limits alone would prove insufficient to turn the tide. By the time extensive dam construction began in the Columbia River Basin—especially as an outcome of Depression-era federal hydroelectric projects—the salmon population was only a small fraction of its mid-19th century numbers. (Depression-era dam building, undertaken as part of the Work Projects

Administration would ultimately produce some of the most imposing dams, such as the Rock Island Dam (completed 1932), Bonneville Dam (completed 1937) and Grand Coulee Dam (completed 1942), contributing to the final descent of salmon numbers.) With more than 400 dams ultimately being built on the Columbia, 11 monumental ones on the main river alone, it would in time become the most developed river, in hydroelectric terms, on the planet (Lichatowich 2001; Taylor 1999; White 1996; Martin 1994; Smith 1979; Dodds 1959; Morning Oregonian 1908).

By 1900, national and state exclusion laws had drastically reduced the Chinese labor pool in the Pacific Northwest—perhaps satisfying the racially-driven political activists of the region but undermining the entire economic model on which the salmon industry was predicated. This opened the door to Japanese contract labor. Though Japanese immigration to the Columbia-Pacific region occurred in much lower numbers than Chinese immigration, the two were interconnected. The first known Japanese immigrants to Oregon arrived in 1880 and, when direct steamship service was established between Portland and Kobe, Japan in 1887, Japanese immigrants began to arrive in Oregon in increasing numbers (Johnson 1996; Azuma 1994; Yausi 1976). Japanese seasonal workers were sent from Portland to salmon canneries and sawmills in Oregon, Washington, and Alaska. As the region's Chinese population rapidly decreased, often Japanese assumed the jobs they formerly held. And in the summer of 1909, with the involvement of Portland's contract labor services, 500 Japanese were sent from Portland to work in salmon canneries (Azuma 1994; Yasui 1976: 238).

Yet Japanese immigration was not sufficient to compensate for the decline of the region's Chinese population. Though the canning industry had largely avoided mechanized innovation through the end of the nineteenth century, the industry now sought out a fish-butchering machine partly to replace Chinese salmon cutters who were so scarce (and, where they persisted, increasingly expensive due to special technical skills). The industry was at a turning point—and for reasons other than declining fish numbers and the CRPA. It became increasingly clear that canneries and their supporting infrastructure along the lower Columbia were out of date and in need of costly upgrades.

In 1903, Canadian E.A. Smith developed an iron fish butcher, the only such machine invented specifically for salmon canning since the industry's birth 40 years earlier. It was given an unfortunate nickname, the "Iron Chink," because the machine butchered and cleaned fish at the astonishing rate—100 fish per minute, *"doing the work of 30 or 40 Chinese and doing it in a much more uniform manner"* (Pacific Coast

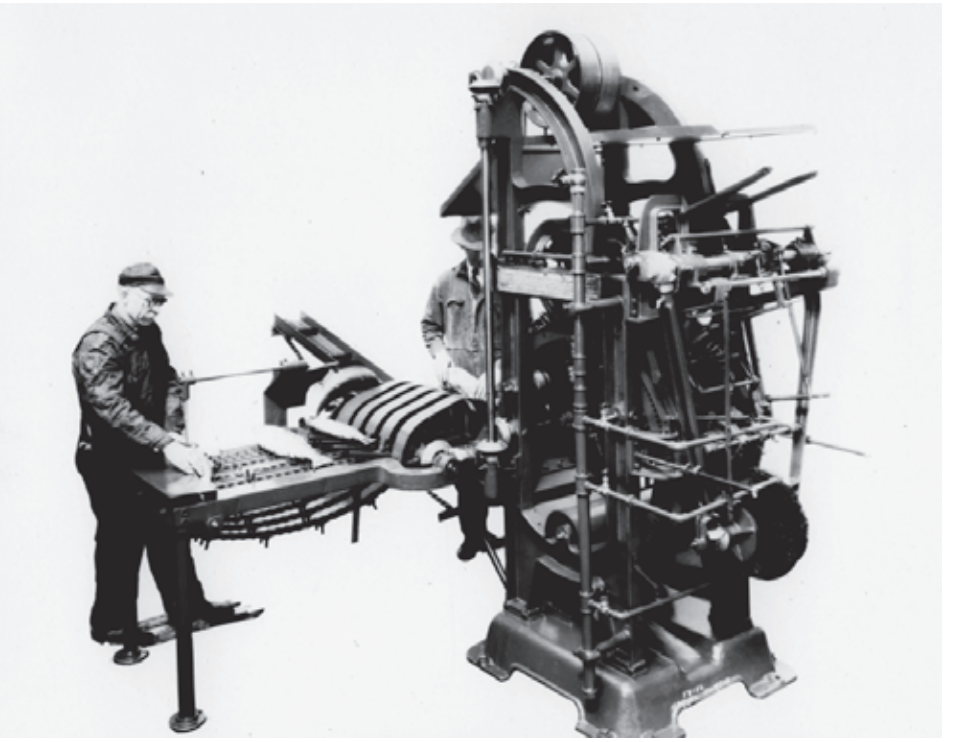


Figure 7.13 – The iron butcher or "Iron Chink"–a machine that allowed canneries to increase their productivity even as Chinese labor became increasingly scarce along the lower Columbia River. Photo courtesy Washington State Historical Society.

Fisheries 1903a: 13). Advertisements for the iron butcher capitalized on concerns about the declining labor pool, *"1909, the big year, the big opportunity. Are you prepared? Chinese labor will be scarce. Contract prices will be raised. The iron chink is your only relief*" (quoted in Newell 1988: 649). Most canneries that survived the period adopted the new iron machinery, or its close successors.

Gasoline powered boats, too, began to replace the sail-rigged "butterfly" gillnet boats in the early twentieth century, but the transition took a number of years. Those canneries that leased gillnetter boats to fishermen were hesitant to invest the capital needed to retrofit vessels with gas engines in light of broader economic realities on the lower Columbia. Independent fishermen, adopting the new motorized boats, soon outpaced the cannery fleets, forcing cannery owners to adopt gasoline engines under a certain amount of economic duress. By the 1930s, the butterfly fleet boats had by and large disappeared on the lower Columbia River,

Figure 7.14 – A Columbia River gillnetter (location unknown), pulling salmon nets by hand into his small wooden boat. Photo, fish5722, from National Oceanic and Atmospheric Administration Archives, Historic Fisheries Collection.

larger motorized netting boats began to ply the river's mouth and the open Pacific. True, as the 20th century began, the salmon industry's labor requirements were generally deceasing, so that bunk houses, mess halls, and other facilities were being mothballed in the first decades of that century. But simultaneously, canneries were forced to maintain fuel tanks, oil tanks, machine shops and other infrastructure to accommodate motorized boats and the equipment associated with increasingly automated canning facilities (Martin 1994).[76]

These events also played out on the margins of what are today park lands. The Columbia River Packers Association had acquired lands and an old cannery on Hungry Harbor, roughly a mile east of Megler Cove during their consolidation in the early 20th century. By the late 1910s, they had converted the cannery to a fish receiving station that functioned somewhat like Megler's original operation inside Megler Cove. This receiving station was later called the "Northshore" facility in Columbia River Packers Association reports. The CRPA continued to use the facility as a fish receiving station through the early decades of the 20th century, but also increasingly as an equipment and storage facility, and a place where CRPA nets were dried and repaired—reflecting the increasingly mechanized and capital-intensive direction of the canning industry, as well as the growing consolidation of CRPA cannery operations on the lower Columbia.

During World War I, as they shuttered cannery operations on the site, a large steel tank was assembled on the docks to hold an emergency reserve of fuel oil to support the various CRPA cannery operations on the lower river. This tank was dismantled by 1940. A few temporary "bunkhouses" were reported adjacent to the site as well, serving as housing for transfer station operators and boat crews staying temporarily between sets, or for repairs and inclement weather (Gunderson 2005; CRPA 1943). Cryptic references in certain documents imply there may have been a small boat repair shop at the site, and that Chinese laborers may have lived there briefly prior to the 1920s. By 1943, an insurance assessment of CRPA properties provided a detailed description of the site at that time, noting that:

"this is a very old cannery site, but for the last twenty-five years it has been used only as a fish receiving station and for living accommodations of a few local fishermen...The property at Northshore comprises two large net-rack docks 600 feet long and 240 feet long with an interconnecting tramway between them and a tramway 700 feet long leading to the shore. The fish receiving station building is a small structure 25x50, located on the other end of the dock" (CRPA 1943: 13).

With all of these challenges—declining fish stocks, antiquated machinery, dwindled and increasingly organized labor, and a host of other issues on the lower Columbia—the cannery owners of the region began to look north, to the productive waters of the far north Pacific. By 1900 Alaska was already becoming the salmon industry's new locus, with British Columbia not far behind. Growing efficiencies in shipping technologies were making this possible, as sailing ships were being replaced by steamships, which would soon be replaced by diesel ships of even greater speed.

Figure 7.15 – An early 20th century aerial photo of the Dismal Nitch area shows the Megler Cove fish transfer station piers and infrastructure on the left, the Northshore facilities in the background on the right, and the "Clamshell Railroad" wharf, sitting on what is today the Dismal Nitch parking lot, on the point in the middle of the frame. At this time, the only access to the shoreline was by rail or boat. Photo courtesy Washington State Historical Society.

Troubled by unpredictable and gradually declining numbers, cannery owners began to explore options for the development of canneries in Alaska—especially to take advantage of the abundance of sockeye salmon in the rivers of Southeast Alaska, the Alaska Peninsula, and Bristol Bay. To facilitate the movement of Columbia River cannery operations into Alaska, a number of lower Columbia cannery owners—led by two heirs to the Hume cannery legacy, Elmore and George Hume—founded the Alaska Packers Association (APA) in 1891.[77] This organization sought to aid in the remobilization of Columbia River fishing assets to Alaska, but also to sequence this process judiciously, so as to avoid creating temporary supply gluts that could depress the price of Columbia River fish. When the CRPA was formed in 1899, the organization took up this cause. They almost immediately began moving Columbia River assets northward—initiating the construction of a large cannery plant in Bristol Bay, Alaska, as well as the purchase of a small fleet of ships to carry Alaska canned fish as early as 1900.

Figure 7.16 – A CRPA cannery on the Astoria waterfront, circa 1941. Photo by Russell Lee, U.S. Farm Security Administration, Lot 338, courtesy Library of Congress.

Indeed, the CRPA came under increasing criticism in its early years as it seemed to be moving so much of Columbia River production swiftly north and out of the region. Some also suggested it was moving cannery administration (and profits) out of the Northwest and into the purview of East coast investors.[78] Sometimes with the institutional backing of the APA and the CRPA, and sometimes moving independently, many of the Columbia-Pacific's key cannery owners began to develop canneries in parts of Alaska, as well as on the mouths of major British Columbia rivers. Marshall Kinney founded canneries associated with Skagway and Ketchikan, Alaska, for example, while Samuel Adair and his brothers used profits from their Astoria waterfront salmon packing operations to capitalize canneries in Steveston's cannery row on the Fraser River estuary, in what is now greater metropolitan Vancouver B.C. Through the 1920s and 1930s, the CRPA moved a significant amount of their production from the lower Columbia to Alaska. Reflecting this monumental relocation, by 1937, at the height of the Great Depression, there were 177 salmon canneries operating on the Pacific Coast, 116 of them (over 65 percent) in Alaska, followed by 37 (some 21 percent) in British Columbia (Newell 1988: 633). As the canneries closed on the Columbia, many moved their equipment and capital north. A certain number of local laborers and boats often followed. Slightly modified Columbia River "butterfly fleet" boats ironically

became the standard gillnetting boat among the growing fleets of gillnetters in such places as Bristol Bay, Alaska—in some cases being maintained well into the mid-20th century (Martin 2013, 2009; Newell 1988; Barker 1909).[79]

As cannery operations drifted northward to Alaska beginning in the 1890s, accelerating thereafter, so too did lower Columbia fishing families who had been part of the Columbia cannery boom. While some fishermen moved directly to Alaska ports, many maintained families and homes on the lower Columbia, while traveling to Alaska waters during the fishing season—a long and dangerous trek, involving extensive periods away from home. These fishermen understandably sold most of their catch directly to Alaska canneries, though they often returned to the Columbia with a full hold of salted fish for local markets and personal use. Beginning in 1894, residents of Astoria chose to celebrate the annual return of Astoria fishermen from the Alaska fishing grounds with a formal regatta. Featuring celebrations and special events along the waterfront, as well as boat races and fishing derbies, the regatta quickly became one of the West coast's premier boat racing events. The event has continued almost uninterrupted since 1894 into the present day, being cancelled only during the two world wars and for a decade after the devastating 1921 Astoria fire. In recent times, the Oregon Heritage Commission named the Astoria Regatta as one of only four "Oregon Heritage Traditions" within the state, reflecting its unique time depth and importance among Oregon celebrations.

Those who stayed on the lower Columbia during this period made many efforts to adapt to the downward spiral of salmon numbers on the Columbia, and to the migration of the industry to distant, northern Pacific waters. For example, as salmon fishing declined, many Scandinavians stayed in the area and continued fishing for other catches. By the early 1940s in Washington and Oregon, Norwegians dominated the dog fish and soupfin shark fisheries, and were the majority fishermen in the small but growing tuna and sardine industries (Arestad 1943: 4, 7-8).

With such highly developed cannery infrastructure, and a pool of specially trained labor, there was little reason to let boats and canneries sit dormant. As early as the 1920s, Columbia River cannery owners and fishermen began to explore other catches. First, they moved away from the production of dwindling Chinook salmon to less numerous and popular catches including sockeye. Then finding these secondary species in decline, they began to experimentally transition away from salmon altogether. A number of canneries tried to market alternative species with

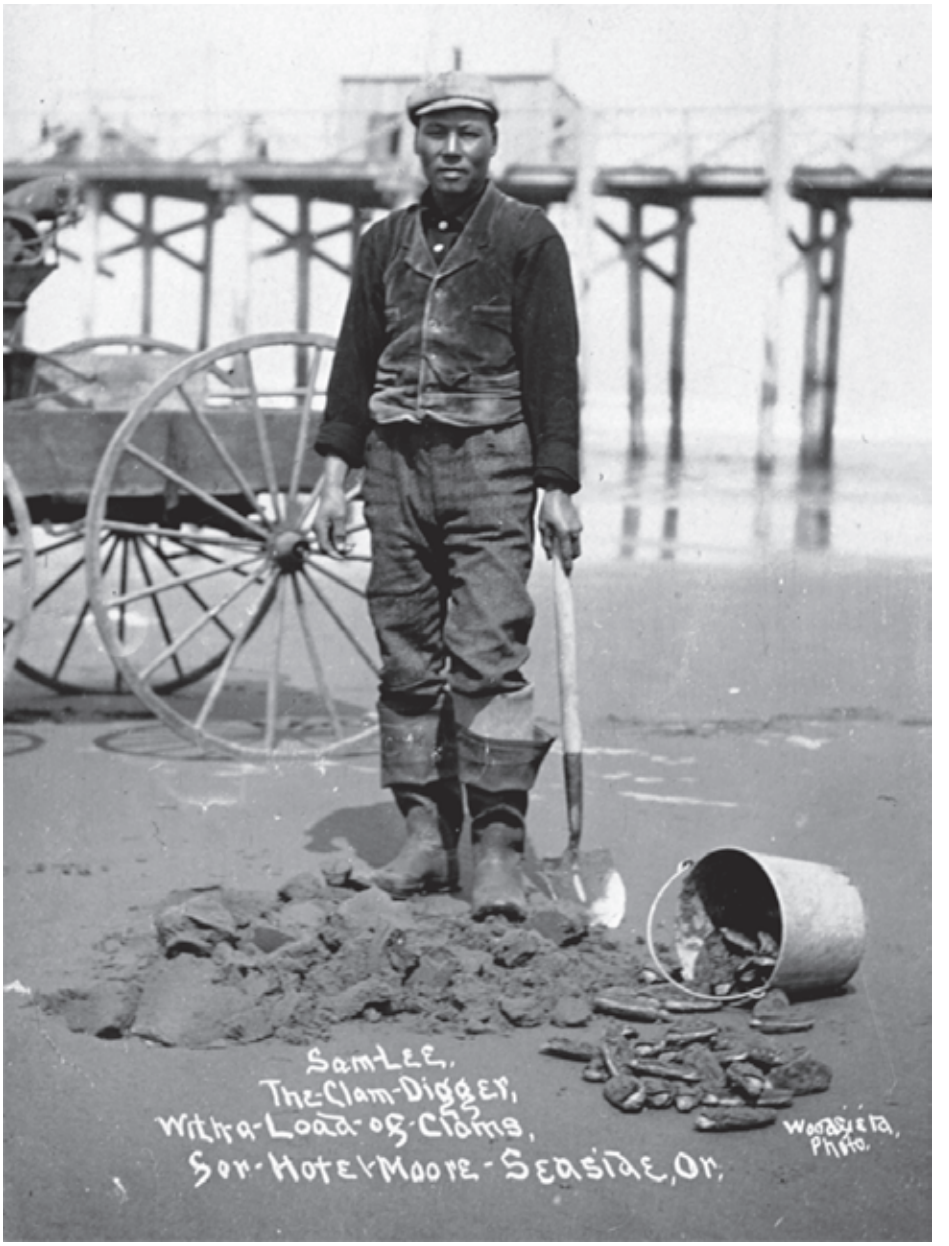


Figure 7.17 – Razor clams for the ocean beach were sometimes canned and shipped to distant markets, but were also harvested for sale to local tourists. Sam Lee, shown here, was one of several clam diggers providing clams for Seaside's early hotels. For Asian immigrants and Native Americans, this was an important, if small cottage industry that could be pursued with relative independence and without factory conditions. Photo courtesy Oregon Historical Society.

limited success. Some, including the McGowan company facilities, began to catch and can American shad (*Alosa sapidissima*) as an alternative to salmon. An introduced fish, shad had found their way to the Northwest from fish populations originally planted in the Sacramento River Basin from Atlantic coast waters in the 1870s, the population growing steadily on the Columbia in the decades that followed. Canneries replaced their preexisting salmon can labels with new iterations, placing images of shad where salmon had once been featured.

Likewise, the CRPA and other area canneries began to experiment with other catches, such as sardine and crab. Today's relatively robust Dungeness crab industry, sustained by small-scale boat operators working just beyond the ocean surf, being a partial outgrowth of this effort to keep idled salmon cannery infrastructure and labor occupied. Certain fishermen and fish packing operations experimented more broadly, developing small fisheries for soupfin shark and dog fish especially focused on the harvest of shark livers for their oil (Arestad 1943). Some sought to retool salmon cannery infrastructure to the time-honored tradition of oystering. Individual fishermen sometimes supported themselves with the harvesting of clams—most notably the razor clams on the sand beaches, which were canned but also sold fresh in lower Columbia towns (a common cottage industry for Native American families displaced from commercial fishing a generation or two earlier by Chinese and Scandinavian workers). There was even a whaling station in Warrenton managed for a time by Bioproducts Incorporated, as well as other ports just beyond the study area, processing the meat and oil of humpback and sperm whales for various commercial uses. Later in the century, other fish would be tapped too—herring, rockfish and lingcod, and pollock, a nondescript whitefish used in such products as fish sticks and artificial crab.

Among these experimental efforts to revive the Columbia-Pacific's flagging fishing industry, tuna may have been the most successful. By 1937 fishermen from the lower Columbia encountered and began to fish large schools of tuna in offshore waters, bringing new life to local CRPA operations. The CRPA began to retool their cannery facilities in order to process tuna. By the end of that decade, the tuna industry outgrew the salmon industry of the lower Columbia, with both salmon and tuna canned under the CRPA's "Bumble Bee" label. The CRPA's activities were increasingly split into two halves—one, centered on Alaskan salmon production, and the other, much smaller, focused on tuna production on the lower Columbia and many other places around the globe. By the end of World War II, the CRPA was acquired by large holding companies and its assets reorganized to eventually become "Bumble Bee Seafoods, Inc.," a company most popularly associated with canned

tuna. By the 1970s, Bumble Bee Seafoods' offices had moved to southern California, drawing away much of the company's remaining administrative positions from Astoria.[80]

The canneries of the great salmon boom largely fell into disuse over the course of the mid-20th century. Some remnant canneries, such as Kinney's cannery in Uniontown, Astoria, were later converted into storage facilities for grain and other products shipped up and down the Columbia. Many others were demolished for scrap and to limit owners' exposure to liability (Steen 2009). When the McGowan cannery was finally closed in 1947, it was then reported to be the oldest fish processing plant in the state of Washington (Appelo 1966; McDonald 1966).The Northshore CRPA fish transfer facility became part of the Bumble Bee operations, fell into disuse, and was partially dismantled during the construction of State Route 12B along the Columbia shoreline in 1956, with remaining offshore facilities largely dismantled by the 1970s (CRPA 1943).[81] By 1970 the Columbia River canning industry was only a vestige of what it had been, with just six canneries left on the river. The last major cannery on the Columbia, the Bumble Bee facility in Astoria, closed in 1980. Since then, a few small canning operations have persisted, but outputs are modest and oriented toward specialized niche markets, scarcely comparable to production levels that once outpaced all others on the lower Columbia. Certain structures from this great canning history persisted, even as they no longer continued to operate commercially. Such structures as the Samuel Elmore Cannery

Figure 7.18 – A label for P.J. McGowan & Sons canned shad, reflecting early 20th century efforts to maintain the solvency of the lower Columbia River canning industry in spite of increasingly volatile salmon numbers. Image courtesy Columbia Pacific Heritage Museum, Ilwaco, Washington.

on the Astoria waterfront—also closed in 1980—served as a prominent landmark of this history— being listed as a National Historical Landmark until it was consumed by fire in 1993 and ultimately delisted from the National Register of Historic Places (Harrison 2011).

Though emerging in New England and California, salmon canning grew to become the major industry of the Columbia River in only two decades. It peaked in the 1880s with 39 canneries on the lower river (some sources suggest up to 42, using inclusive definitions), but declined almost as quickly as it had emerged—with some of the industry's founding families moving to more productive waters in the northern Pacific (Harrison 2011). The River is much changed since the days the Hume brothers recruited Chinese labor to begin cutting fish at their Eagle Cliff plant. Once considered to be the world's most productive salmon river, some of the constituent runs of the Columbia now receive protection under the Endangered Species Act. Watershed councils and nonprofits work earnestly on both sides of the river to sustain salmon runs that remain. In spite of these changes, fishing has been an enduring and central part of Columbia-Pacific community identity into recent times. Smokehouses sell their products to tourists, and a small and resilient fleet of gillnetters still work in their short season. Columbia-Pacific families come together annually to celebrate the Astoria Regatta and new festivals such as the "Fisher Poets" gathering, hosted in Astoria since 1998. Fisher Poets brings together fishermen from Alaska to the Columbia-Pacific to reflect, emote, and commiserate about the conditions of the modern industry.[82]

8 Cutting the Forests, Reshaping the Land

The Historical Development of the Columbia-Pacific Timber Industry

The sprawling damp forests of the Columbia-Pacific region and the massive scale of its coastal trees stretched the limits of pre-industrial lumbering technologies. So too, the imagination of the region's early settlers. For early loggers accustomed to using physical labor to clear forests, with only the power of muscle, oxen and horse, and with little more than crosscut saws and axes on hand, the commercial potential of the vast forest could be envisioned but scarcely realized. Labor requirements were high; the fuels required were food and feed. The earliest logging practices on this coast would have been familiar to pre-industrial European woodcutters. Yet in the few generations that followed, timber harvesting was revolutionized, becoming a highly efficient, mechanized and petroleum-intensive industry that bore little resemblance to its earlier historical incarnations.

The Pacific Northwest generally, and the Columbia-Pacific in particular, is one of a few places globally that was first logged during the arc of this technological revolution. And while the bulk of the landscape was public domain at the beginning of this history, by the mid-20th century, corporate-owned industrial forests occupied the majority of the study area's lands. This transition reflected both the dealings of land barons and the objectives of federal land policy in the American West. Today, the majority of the study area is occupied by industrial forest, with logging history woven through the broader history of the Columbia-Pacific region in myriad ways. It's not surprising that considerable interest in, and nostalgia for, the "logging history" of this region still exists. Logging has literally shaped the landscape of the region. It intersects in many ways with the history of Lewis and Clark National and State Historical Parks.

The Native peoples of the Columbia-Pacific region were highly skilled woodworkers, who maintained a sort of "timber industry" of their own—involving the production and exchange of a vast assortment of wood products. Planks, removed individually from logs or sometimes living trees, were used in the production of houses, while

entire logs, hollowed out with meticulous skill, were used to produce canoes, the region's most important mode of transportation into the 19th century. Every manner of object was produced from wood products, the western red cedar in particular: wooden boxes and tools, root baskets and hats, bark mats and clothing. Wood products, interpreted in this sense, were central to all Native material culture, and were actively traded with people along the coast and into the interior Northwest. Entire books could be, and indeed some have been, written about the place of wood in the lives of Northwest Coast Native peoples (Stewart 1984), though some locally unique technologies and practices remain poorly documented in writing. No doubt, considerable Native American wood procurement and processing took place on most, and perhaps, all of the sub-units of Lewis and Clark National and State Historical Parks, though the only clearly visible remains are to be found in subsurface archeological deposits in places like Station Camp (Wilson et al. 2009).

While the North West and Hudson's Bay Companies participated in timber production on the lower Columbia, their results were mixed and modest. With significant involvement of Native Hawaiian and French-Canadian labor, the Hudson's Bay Company maintained a sawmill at Fort Vancouver and intermittently participated in the cutting, storage and shipping of wood at Fort George. Woodcutting allowed the Company to supply the local lumber needs of its employees and early American settlers, as well as supporting a modest ship-borne export business to Hawaii and other places where the HBC operated. This lumber was commonly shipped along with other goods, such as furs and barreled salmon, and it is unclear whether lumber "export" would have been profitable independent of these combined cargoes. The geographical reach of this early logging was negligible, timber being felled very near the forts and on shorelines where they dropped to the water and could be floated to fort mills and ships.

The earliest American commercial mill on the lower Columbia, in turn, was constructed by Henry Hunt and Ben Wood near modern Cathlamet, Washington in the early 1840s. As the HBC began to move operations out of the region and into uncontested British territories such as British Columbia, this new mill took up much of the slack. Drawing on locally knowledgeable labor, including a number of Native Hawaiians and Indians familiar with the HBC mills, the Hunt and Wood mill sold lumber harvested on the Columbia River shoreline to growing settlements of the northern Willamette Valley. They also temporarily hijacked certain HBC markets in California and Hawaii. After most Native Hawaiians left the region with the departure of the HBC, the Hunt and Wood mill increasingly hired arriving settlers as temporary labor, while continuing to hire local Indians for mill and tree-cutting

work—the Native portion of the workforce often being compelled to take high-risk jobs unpopular with other workers.

The late 1840s and early 1850s, however, were transformative throughout the Columbia-Pacific, as the promise of free land brought a wave of settlers to the Northwest and the promise of gold brought a more itinerant wave of settlement to California. Tidewater timber within the Columbia estuary was some of the first to be logged commercially anywhere in the Pacific Northwest, linked to these early events (Erickson 1965). Just as the California gold rush of the mid-19th century spurred early commercial innovations in fishing, oystering, and other fledgling natural resource industries, so too did California's explosive growth prompt the birth of the modern timber industry on the lower Columbia. With the objective of providing wood for burgeoning California markets, a number of small-scale logging and lumber shipping enterprises popped up along the shores of the lower Columbia in the early 1850s, most organized by arriving settlers from logging centers in the American East. As before, logging and wood processing were centered on the slow-moving Columbia tidewater, where trees could be felled directly into waterways and towed by boat to mills, or could be dragged to waterways across level terrain by oxen or draft horses with relative ease. Several small mills appeared on the shores of the Lewis and Clark River, including the Harold Lumber Mill, built in 1851 by Chief Coboway's son-in-law, Solomon Smith. One of the largest of these Lewis and Clark River operations, and indeed one of "the largest sawmill[s] then in Oregon" sat within what is now Lewis and Clark National and State Historical Parks, sitting on the waterfront of what is today the Fort Clatsop section of the park (Gillette 1896).[83] Early in the Shane family's ownership of the land, they allowed for the occupation of a portion of their claim by a mill under the proprietorship of Richard M. Moore. Largely to accommodate California market demands in 1851-54, loggers cleared a significant portion of the native vegetation from the fort area for this mill, while the margins of the new clearings were planted in orchards (Gillette 1900a).

Originally from Ohio, Richard Moore had moved as a young man to the Mississippi River town of Port Gibson, Mississippi. In that town, he had operated a small sawmill and married into a local family. By 1851, he and his family were eager to explore the economic prospects of the West and, apparently, to escape the growing threat of civil war in the East. In that year, Moore moved to Oregon with his wife, Permelia, their children, their nephew William Irwin (an apprentice woodmill operator who would one day become governor of California) and apparently the family's two African-American slaves—both women. Moore had shipped sawmill

machinery ahead of the family, with the intention of starting a mill near Astoria (Smith and Moore 1963). As recounted by Gillette,

"R. M. Moore came there to build a large saw mill, and the lines of the Shane claim were moved north so as to make room for Moore, giving him the old Lewis and Clark land…where he erected his mill. Fort Clatsop soon became a lively place, with 35 or 40 people, all busy clearing land, cutting sawlogs, sowing lumber, etc. For two or three years there was hardly a week that did not find one or more ships the crew loading with lumber for San Francisco. I have seen five there at one time" (Gillette 1900a).

After establishing the Fort Clatsop mill, Moore later founded mills to service California markets in South Bend, Washington and Greenhorn, California. As Moore discovered, the California lumber boom would be somewhat short-lived, as larger operators, closer to California markets and with much lower shipping costs, were usually able to edge out small-scale operators in the Pacific Northwest. California wood demand also came in infuriating booms and busts, reflecting the chaotic nature of early migration to that state. Many timber operations along the lower Columbia came to an abrupt end by the mid-1850s, including the Moore mill which closed by roughly 1854. Again, quoting P.W. Gillette (1900a), *"In 1854 the milling business became so unprofitable that the mill closed down, and Fort Clatsop's prosperity came to a final end."* Some portion of the milling equipment at the Fort Clatsop site—rare and coveted materials in that era – were apparently relocated to other mill operations in the region. By the end of the decade, Moore moved away, taking his family to Eugene, Oregon, where they permanently settled, maintaining a farm and still owning mill interests around the West (Smith and Moore 1963). Meanwhile, the docks and facilities idled at the former Moore mill site were briefly used as a convenient place for ship repairs. As recalled by P.W. Gillette,

"In the summers of 1860, '61 and '62, Captain Shattuck, of the United States revenue cutter Joe Lane, stationed at Astoria, took his ship to Fort Clatsop each year to overhaul, repair, paint and clean her. But then came the great civil war and the Joe Lane was ordered away, and Fort Clatsop soon grew into a wilderness as silent and gloomy as when Lewis and Clark found it" (Gillette 1900a).

In spite of occasional downturns, though, logging persisted and even expanded in the region in the decades ahead, supplying lumber for growing local markets—especially in the northern Willamette Valley—while a modest ship-borne trade

continued with California markets. The technology of these early operations was simple, and progress through the dense coastal forests was slow, involving crosscut saws and handaxes taken up against giant and ancient trees. When trees could not be felled directly into a navigable waterway, they had to be pulled by teams of horses, mules and oxen, often over networks of corduroy "skid roads" made of logs laid parallel to one-another. Covered with grease, these log roads allowed downed timber to be pulled more efficiently across the forest floor to tidewater.[84] Confronted with the broad, buttressed bases of ancient trees, often rotten and riddled with a complex grain, early loggers were required to set "springboards" into the side of the tree at chest level and sometimes much higher. Standing on these boards, they could cut into the trunk with crosscut saws and axes (and in later times, hefty oversized chainsaws designed to cut old-growth trees while operated by two-man crews). While stumps of spruce, Douglas-fir and hemlock from the early days of logging are very few in number, the rectangular notches made to hold springboards can be seen in many stumps of the western red cedars, with their tannin-rich, rot-resistant wood, and are popular objects of public interpretation today (Cox 1974).[85]

The logging history of the region was defined by certain geographical fundamentals. While the largest mills and shipment facilities sat on the tidewaters of the Columbia estuary, surrounded by dense and dripping Spruce-hemlock forests, the more marketable and rot-resistant Douglas-fir timber, which fetched the highest prices as dimensional lumber, often stood some distance inland, much of it inaccessible to early tidewater logging. In truth, market demand for tidewater trees seldom matched the market for Douglas-fir, and the coastal species never matched Douglas-fir's popularity as dimensional lumber. This prompted the development of diverse specialty markets with specialized mills to match. The rot-resistant, rich orange wood of the western red cedar made the tree popular for outdoor uses. Shingle and shake mills began to appear along the coast, using local cedar and catering to local markets. Hemlock and alder wood were light but often fragile, while spruce was so solid as to be a challenge for everyday woodworking. In specialty mills, these woods were often cut into simple furniture, or doors and sashes. Several small mills manufactured specialized thin-dimension lumber from the sturdy spruce. There were cabinet mills and box factories—the boxes used specially in industrial shipping of fish, produce, and other goods along the lower Columbia. Wainscoting and other types of patterned "bead board" of spruce or hemlock were sold on local and regional markets, manufactured by small operators such as the Morrison mill in Seaside. These specialized ornamental-wood products still adorn the interiors of older homes in the Columbia-Pacific region. There were

mills constructing railroad ties, and others producing planks for the construction of plank roads—a standard method of early road construction on the rough, uneven and usually muddy backcountry of the Columbia-Pacific. In later times, spruce wood would be used for the construction of musical instruments such as guitars and violins. In spite of a general preference for Douglas fir, the larger plywood and dimensional lumber mills of the region sometimes used these woods too. In sum, there was an impressive number of mills in the second half of the 19th century, large and small, some long-lasting and some fairly ephemeral. Alongside these operations was a complex assortment of supporting and subsidiary businesses, such as machine and tool shops, mechanics, specialized retail stores for logging and milling equipment, and any number of other operations catering to the variegated timber industry of the coast (Kamholz et al 2003; Miller 1958: 214-25).

Only in the 1880s did innovations in industrial forestry begin to accelerate beyond what was a slow and arguably ancient mode of timber production. Inventions such as the Dolbeer Logging Engine or "steam donkey" revolutionized the timber harvest, allowing for logs to be dragged by cable to water-, rail- or road-side loading areas with steam-powered gears that pulled cables and attached trees across the forest floor. Such donkeys arrived in the study area by the mid-1890s, sometimes bought from nationwide manufacturers, but often assembled in places like Astoria and Portland from industrial scrap. Not only were they much more efficient than teams of oxen, but they were less expensive to maintain. Furthermore, they allowed for operation during wet months when animal-based operations were otherwise mired in mud. Early loggers such as Ed and Pete Malone, who had overseen logging in the upper reaches of the Lewis and Clark River by hand and ox team, eagerly expanded their operations by adopting the steam donkey and other revolutionizing technologies of the day. These steam donkeys were moved from one harvest area to another in the forest atop vast "sleds" assembled from large logs, pulled by cables attached to standing trees and other sturdy parts of the landscape. The remains of many such sleds can still be found rotting below the second- and third-growth forests of the Columbia-Pacific region (Adams 1961; Miller 1958).

Allowing for larger and more centralized harvests, the advent of donkeys fostered the growth of temporary "logging camps" established near harvest areas to house loggers—a practice that would persist in some form until the widespread availability of personal cars in the middle 20th century. Especially at large logging base camps, these were sophisticated operations, often with bunkhouses, a mess hall (often with women or Chinese men working as cooks), a pen for livestock and a livestock keeper,

Figure 8.1 – The L.G. Isaacson mill supply store in Raymond, Washington – one of several retail outlets that filled the towns of the Columbia-Pacific region in the late 19th and early 20th centuries as part of the larger logging economy. Photo courtesy Washington State Historical Society.

impromptu small towns, these logging operations often appeared and then disappeared in the course of a single season. They were found widely throughout the low-elevation forests of the Columbia-Pacific region.

As early logging moved away from the tidal waters of the Columbia estuary, upslope and inland, early industrial loggers developed innovative ways to transport logs to tidewater mills. Among these were the "splash dams," temporary dam structures built in creek valleys to produce log ponds filled with logs. Once the pond was full, the dams was demolished—sometimes with constructed floodgates and sometimes by cruder means like dynamite—allowing a torrent of log-laden water to surge to the tidewaters downstream. Splash dams of this type sometimes operated on the upper reaches of the Lewis and Clark River, upstream from Fort Clatsop, and on small rivers and streams in the Columbia-Pacific. While effective, and no doubt entertaining to behold, these methods of log transport had costs. Riparian and stream habitats were often significantly compromised, scouring out fish spawning grounds and compromising riverine habitats in ways that compounded the effects of beaver extirpation a few generations before. In other places, steam networks were

Figure 8.2 – Logging crews with "choker cables" (visible overhead) attached to steam and later gasoline-powered donkeys allowed for the transport of the huge logs of the region without the use of horses or oxen – a considerable improvement in the speed and efficiency of early logging operations. Photo courtesy Oregon Historical Society.

a tool shop and various types of mechanics and equipment specialists. Like entirely redesigned. On the low-gradients of Clatsop Plains, for example, forester N.B. Bain oversaw the reconfiguration of several lake and stream drainages, straightening and simplifying them to produce a canal so trees could be floated from as far away as Seaside to mills in the Warrenton area. This left an enduring and distinctively geometric pattern to the surface hydrology on the western edges of what is today Fort Clatsop (Miller 1958).

The great industrialization of the timber industry occurred as Scandinavian laborers were entering the local work force en masse. Many of the men arriving from Scandinavia were familiar with logging practices from the old country, and able to assume positions in the woods and mills of the Columbia-Pacific quite readily. Norwegians and Finns were especially well represented, as were Swedes and to a much lesser extent Danes. Many moved to the Columbia-Pacific as part of a two-step migration involving a stint logging in the Great Lakes region. They

Figure 8.3 - The Clerin Hamilton Lumber Company of Raymond, Washington, circa 1911–one of many small mills to appear on the tidewater of the Columbia-Pacific region in early 20th century, as rail access improved shipping options to the Pacific Northwest interior. For the next half century, these mills largely processed large-dimension trees from virgin forest. By the second half of the 20th century, all equipment and operations had to be retooled to accommodate smaller trees from the region's second- and third-growth forests. Photo courtesy Washington State Historical Society.

thus arrived with a working knowledge of American industrial forestry. Indeed, many were recruited, formally and informally, by the mill owners of the region, bringing a succession of early immigrants' friends and family to augment the ranks of local timber industry labor.

Almost all the early Scandinavian immigrant men of the lower Columbia area who were not fishermen logged at some time during their lives. Many worked in the woods in various logging professions, but others worked directly in the mills or in the operation of boats and equipment that transported logs and lumber throughout the region. In these roles, they provided the backbone of the timber industry during the period. They also contributed significantly to the early unionization of lumber operations, with the Finns particularly instrumental in labor organizing on the lower Columbia. In time, a number of Scandinavian immigrant families established small logging firms in Pacific and Clatsop Counties, including Wirkkala Brothers, Keko and Kendell, the Andrew Nygaard family, and the Penttila Brothers (Hummasti 2002).

While small-scale milling and lumber shipping thrived at the Columbia's mouth, the earliest and most innovative industrialization of lower Columbia logging was centered on those portions of the river immediately upstream from the study area. And, suitably enough, this revolution was led by figures such as Simon Benson (1851-1942), a Scandinavian-born logger turned industrialist who sought to consolidate and streamline what had heretofore been a diffuse industry on the lower Columbia. While an exceptional person, Benson's experience provides a window into the Scandinavian-American experience on the lower Columbia, as well as the forces that transformed the region into a center of industrialized lumbering.

Born Simon Berger Iversen in Norway in 1851, Simon Benson immigrated with his family to the U.S. in 1867, and by the following year had moved to Black River Falls, Wisconsin, where he worked in logging camps and sawmills. In 1879, Benson and his family relocated to the Northwest, following the general trends in Scandinavian immigrant migration, capitalizing on the timber skills he acquired in the Great Lakes. Shortly after his arrival in the region, he began to use his accumulated capital and his knowledge of the industry to acquire strategically placed forestlands along the Columbia estuary. He spent the next decade buying and selling lands along the Columbia River. In this way he developed major holdings in such places as Tide Creek in Columbia County, Oregon, and Colfax, Cathlamet, and the Deep River Basin in Washington. By the beginning of the 1890s, Benson was prompting an "industrial revolution" within his own operations, replacing ox teams with steam donkeys as quickly as his resources allowed. Thus he quickly became one of the best known timber industrialists on the Columbia River, and in 1895, founded the Benson Logging & Lumber Company (Abbott 2013a, 2013b; Munro 2008; Tucker 2002; Ficken 1982; Allen 1971; Sunday Oregonian 1916).

Benson had arrived in the Columbia-Pacific at a critical moment in the region's logging history. By the late 1880s, the readily accessible tideland forests had been largely logged over, increasing demands for the region's interior, forested lands (Tucker 2002). Logging railroads, introduced in this period, would revolutionize logging in the Columbia-Pacific. Most critically on the coast, perhaps, these railways allowed the old-growth Douglas-fir forests of the interior Coast Range to be linked directly and expeditiously to the mills and shipment facilities of the tidelands. First introduced nationally in the 1880s, logging railroads relied on steam-powered locomotives that used coal, scrap wood, or sometimes oil for their propulsion. The Shay engine, first introduced nationally in 1882, set the standard for logging engines. (Shay was a national leader, producing over 2,700 logging locomotives nationally, though there were many competing brands that

sought to emulate or slightly improve upon the Shay design in years that followed.) Here too, Benson was an innovator, introducing large-scale logging railroad networks to the lower Columbia, beginning with the 1891 construction of a logging railroad that delivered logs from the interior of Wahkiakum and Pacific Counties to the Columbia at Cathlamet, Washington (Allen 1971: 27).

The interior lands of the region, being of little interest heretofore, were cheap for Benson to acquire as timberlands, beating the market. He was one of the few industrialists poised to make use of the lands. Throughout the Columbia-Pacific networks of logging railroads were quickly developed through the 1890s and early 1900s, sometimes funded by Benson and sometimes by his competitors, linking the upland portions of most river-scale watersheds to tidelands on the Columbia, and to a lesser extent Willapa Bay tidewaters. As will be discussed below, one significant rail line extended up the Lewis and Clark River from tidewater. A separate network of logging railroads centered on the Youngs River drainage, including the Crown-Willamette Paper Company Railroad, the Tidewater Timber Company Railroad, and at least two other unidentified logging railroads. The John Day Forest Railroad, meanwhile, had a terminus near Svensen and operated in the hills to that community's south. On the Washington side of the river, the Deep River Logging Company Railroad and H.B. & A. Logging Company Railroad operated in the Grays Bay area, with terminuses on Rosburg and Deep River in Wahkiakum County, while the Portland Lumber Company had a terminus in Skamokawa. All of these railroads were active in the years between 1885 and the 1930s. Logging train engines continued to be produced commercially, and would largely dominate the lower Columbia's logging practices until the end of World War II, at which time they became specialty items, eclipsed by log trucks (Oregon Historical Society 2009; Adams 1961; O'Neal forthcoming).[86]

In 1906, Benson made another substantial contribution to the timber industry of the Northwest with his creation of cigar-shaped, ocean-going log rafts, allowing for large-scale waterborne shipping both within the Columbia and to distant markets (Oregon Historical Society 2009; USNPS 2010:22). As an October 1906 issue of the *Oregon Daily Journal* suggested at the time, "*Simon Benson…is believed to have solved the problem of marketing lumber at a minimum cost in southern California, by transporting sawlogs by ocean raft and sawing them at San Diego*" (Oregon Daily Journal 1906: 9). These rafts, which could ship 4.6-6 million feet of lumber in rafts of up to 1,000 feet long, allowed Benson to take advantage of the lucrative California market without suffering high shipping costs in the process. Timber could now be towed directly from his extensive logging camps at Clatskanie in Columbia County, Oregon,

Figure 8.4 - While Simon Benson dominated railroad logging on the lower Columbia, many other companies were rapidly following his example, developing logging railroads to tidewater, where logs were deposited directly with mills or dumped in the water to be towed to tidewater mills nearby. Here, the Ilwaco Railway and Navigation Company Railroad brings hefty logs to its wharf in Ilwaco in the early 20th century – logs so large that a flatcar is required for each one. Photo courtesy Oregon Historical Society.

1,100 miles to the Benson Lumber Company mill in San Diego, California (Abbott 2004; Binus 2004; Crawford 2008; Oregon Daily Journal 1906).[87] Eventually, the rafts became widespread, an industry standard on the lower Columbia, and were referred to as "Benson log rafts" (NPS 2010:22).[88]

The Privatization of the Columbia-Pacific's Interior Lands

The fundamental elements of early 20th century industrialized forestry were all in place on the lower Columbia River. A scramble was soon underway between competing milling interests for timber and land rights in the interior lands of the Columbia-Pacific. The lowland forests provided most of the region's timber supply up to this time, yet were quickly abandoned for what was the largely unoccupied, densely forested inland of the region, its ancient forests still largely intact and its

industrial potentials still largely unrealized. Ownership of these interior lands and their timber had long been in a kind of limbo, more of hypothetical than practical importance. Now, with Benson boldly moving into these areas with his logging railroads, and many competitors quickly moving in behind him, the ownership in the Columbia-Pacific's interior lands became an issue of critical importance.

Looking at a map of land ownership today, one sees that the interior lands of the region are an amalgam of private timberlands, in large contiguous blocks, with less public timber land than one sees elsewhere in the American West. Most of what became private timber land in the region was acquired during a speculative boom, reaching its peak within the decade of 1900 to 1909, which corresponds with purchases by large owners in all three counties of the study area. Yet in the mid-19th century, almost all of these interior lands were effectively in the public domain, and not yet disposed of by the United States federal government. Somewhat incongruously, the region's pattern of land ownership, consisting largely of private timber company lands, reflects a legacy of federal legislation authorizing grants to aid in the development of railroads during the 1860s. The most important of these was the Northern Pacific grant, which was meant to subsidize construction of a transcontinental railroad from the Great Lakes to the Pacific Northwest. This, plus the use of public land laws by speculators and agents of the largest timberland owners, largely accounts for the concentration of private timberlands in the Columbia-Pacific. Even today, only a small number of timber companies hold title to the majority of the study area, reflecting this historical legacy.[89]

This pattern is rooted in the mid-19th century, when the U.S. Congress made land grants to railroads as a way of providing their investors with income from land sales—the logic being that this would serve as a *de facto* federal subsidy for rail line construction, while also serving indirectly as a catalyst for regional development. Congressional reasoning was based on the idea that railroads like the Northern Pacific could help to strengthen and unify the expanding, young nation. These rail lines would link an expanding network of private lands in newly admitted states and territories to the nation's expanding industrial base located east of the Mississippi River, provided there were financial incentives for railroad companies to build. Critical to the history of the Columbia-Pacific region: the proposed Northern Pacific rail route connected Lake Superior to Puget Sound, and along the entire route, Congress gifted the Northern Pacific with alternate every one-mile by one-mile sections of land. A wide swath across Minnesota, the Dakotas, Montana, Idaho, Washington and Oregon was thus donated to private investors as the Northern Pacific Railroad Grant, totaling some 44 million acres, as authorized by the Act of

July 2, 1864 (13 Stat. 365). The legislation granted odd-numbered sections of 640 acres for 20 miles on either side of constructed railroad in states, and 40 miles in territories—producing a vast checkerboard-like pattern of railroad company land ownership across the American West.[90] Congress made the grant conditional in two respects; first, that the rail line be completed by a certain date and, second, that the granted land be sold to settlers in 160-acre tracts at a fixed price of $2.50 per acre. The Northern Pacific failed to meet either condition. More than three-quarters of their 2,138 miles of subsidized rail line was built after the grant's expiration date, so that the NPRR finally reached Tacoma and Seattle by way of Yakima in 1888. And instead of quickly conveying their grant lands to settlers, the Northern Pacific, like other railroads of its day, retained the granted sections for speculation in timber, mining, agriculture and real estate. Other lands were routed to Northern Pacific subsidiaries that developed such resources. The Northern Pacific Improvement Company, one of these entities, owned the hillslopes above the National Park Service Dismal Nitch parking lot well into the early 20th century (Hedges 1930; Metzger 1930).[91]

This 1864 Northern Pacific Railroad grant affected all three counties in the study area, especially the two located in Washington. The northern half of Wahkiakum County fell into checkerboard ownership of the NPRR, which then sold the land—not to settlers—but to Weyerhaeuser Timber Company in 1900 for a price of $6.00 an acre. And, apart from the Long Beach Peninsula, which lay outside the 50-mile indemnity limit (as measured from Tacoma), this pattern of speculative redistribution was even more pronounced in Pacific County. Most was sold to Weyerhaeuser. The few sections not otherwise purchased by Weyerhaeuser were transferred to Weyerhaeuser through various holding companies (U.S. Dept. of Commerce 1913: 27-29). From this period forward, Weyerhaeuser maintained an almost monopolistic control over timberlands in southwestern Washington. As was said in official testimony on the matter of Weyerhaeuser founder, Frederick Weyerhaeuser's influence in Pacific County, made to the U.S. Department of Commerce (1914a: 14) in the early teens, *"Weyerhaeuser controls the price of stumpage in this county, in fact, he owns most of it."*[92]

It should be noted that Weyerhaeuser—a company still very prominent in Columbia-Pacific logging and land ownership—was first formed almost entirely through Northern Pacific land grants. Frederick Weyerhaeuser, a German born immigrant to the U.S., began his career in the sawmill business on the banks of the Mississippi during the Civil War. In the 1890s, he became interested in the timber potential of the Pacific Coast, and by 1898, had formed the Coast Lumber Company

whose primary goal was to market Washington shingles in the Midwest and potentially develop a mill business on the Pacific coast. Learning of an opportunity to acquire Northern Pacific Railway interests, he saw the potential for a more ambitious operation. He wanted to effectively "corner the market" on Northwestern timberlands. At the height of timberland speculation in January of 1900, in what was the largest private land transaction in U.S. history up to that point, Frederick Weyerhaeuser and 15 partners purchased 900,000 acres of timberland in Washington State from the Northern Pacific Railway.

With three employees in a Tacoma-based office, Weyerhaeuser along with his investors transformed the Weyerhaeuser Timber Company into the second largest private holder of timber in the country almost overnight. Though the Weyerhaeuser Timber Company initially operated as a timber land holding firm, they soon sought to develop their manufacturing capacity. Just two years after it was formed, in January 1902, the company acquired the Bell-Nelson Lumber Company of Everett, and by September of that year Weyerhaeuser began salvage logging on lands burned in large fires earlier that summer. By 1903, the Company expanded its Pacific Northwest holdings with a second purchase, acquiring 261,000 acres from the Northern Pacific Railway, giving the Company roughly 1.3 million acres in land. This figure would continue to expand in coming years, in part from the consolidation of claims on Northern Pacific Railway lands (Ficken 1979; Jones 1974).

Owning much of the "checkerboard," Weyerhaeuser and other timber companies in the region acquired the intervening lands through various mechanisms. During the great timber-buying boom of 1890 to 1910, land acquisition by large owners followed, owing to several methods. First were duplicitous uses of the Homestead Act—the legislation allowing every man and woman to acquire 160 acres of public domain land at no cost, provided they "proved up" the land. The law could be subverted in two ways, either through "dummy entries" or by "commutation." Dummy entries were technically illegal and could be prosecuted as fraud. In these cases, timber companies paid individual men and women to take out a homestead claim, which they then transferred in title to the timber company for a fee. A "commuted" homestead, by contrast, was perfectly legal. It made use of a provision in the law allowing an occupant to buy his homestead for a fee of $1.25 per acre after residing there for 14 months. In practice, these homesteads were often sold immediately to lumbermen or timber land brokers by townspeople who often lived in the same county. Occasionally, these investors purchased defunct homesteads from families who had tried and failed at homesteading in the forests of western Oregon and Washington. Taken together, this harvesting of Homestead Act interests

provided timber companies with powerful mechanisms for acquiring lands in the Columbia-Pacific region and beyond. During the timber boom decade of 1900-09, the Homestead Act was used to acquire some 6.9 million acres of land from the public domain in Oregon—almost twice the rate of the preceding decade, much of the difference attributable to the acquisition of private timber lands.

The second method for private acquisition of timber lands involved use of the Timber and Stone Act of 1878, legislation permitting purchase of timber from the public domain in 160 acre tracts within Oregon, Washington, California, and Nevada for a minimum price of $2.50 an acre. There was no pretense of occupation, and a sizeable portion of the private lands acquired during the timber boom of 1900-09 were obtained through this method (O'Callaghan 1979).[93] A third way to transfer timber lands from the public domain was through the so-called "scripper" acts. Among these was an 1898 appropriation act that gave the Northern Pacific Railroad the right to freely acquire any odd-numbered sections of land the company chose in the states transected by its rail line, if the federal government required use of any part of its original land grant. The Northern Pacific could also receive "scrip" for these lands, which were, in essence, coupons that could be used to acquire free public lands elsewhere. In practice, this allowed the Northern Pacific Railroad to acquire prime resource lands to "fill in" their checkerboard lands in exchange for any federal parks, Indian reservations, military lands, or other federal properties established along its original rail corridor. The Northern Pacific could then sell these additional lands or scrip to private companies, in turn, just as the company had sold their original "checkerboard" lands.[94]

What transpired in Clatsop County demonstrated how all of these methods of public land alienation could work in combination, despite this part of Oregon being beyond the reach of the original Northern Pacific grant of 1864. A large portion of that County's private timber land base was originally conveyed to private owners through a railroad subsidy, this one stemming from passage of an 1866 Congressional act authorizing an Oregon to California railroad, linking Portland and Sacramento. Two sets of promoters angled to build the Oregon section, with the loser being consoled with another grant authorized by Congress on May 4, 1870. This latter legislation awarded ten sections per mile to a newly formed railroad company initially called the "Oregon Central," if they could build a rail line from Portland via Forest Grove to Astoria through the Oregon Coast Range. To subsidize the development of this railroad, the company was granted a checkerboard of lands, consisting primarily of undeveloped timberlands in Columbia and Clatsop Counties.

Under the terms of the act, lands granted to the railroad had to be sold to actual settlers for no more than $2.50 per acre, with tracts not exceeding 160 acres in size. The company built a line from Portland to Forest Grove in 1871–72, but from there turned south about 47 miles and so surrendered the uncompleted portion of the rail easement to forfeiture in 1885 (Corning 1956: 182).[95] Though no tracks were built along this route, a number of the grant lands had already passed to private timber companies, profiting Oregon Central's investors. In the course of the 15 years of Oregon Central operations, the Northern Pacific Railroad had acquired a number of "lieu selections" in the southern and eastern parts of Clatsop County within the Oregon Central's checkerboard holdings, some of which it conveyed to Weyerhaeuser and associated holding companies. The loss of so large a portion of the "public domain" in Clatsop County to private investors, in the absence of a completed product produced a minor scandal. Yet the issue was eclipsed by a much larger scandal surrounding fraudulent disposition of public domain lands along the whole of the "Oregon and California Railroad" to which the northwest Oregon venture was linked. The Oregon and California lands would ultimately be returned to the public, in part, as the "O & C Lands," today owned by the Bureau of Land Management. However, no comparable repatriation of public lands was attempted in the Oregon Central lands of Clatsop and Columbia Counties (Puter and Stevens 1908).

A second group of investors acquired a portion of Clatsop County roughly equal to that of the railroad companies—they consisted of five individuals including A.M. Smith as well as Hammond, Oregon namesake and mill owner, A.B. Hammond. Like Smith, Hammond boasted holdings in a number of states other than Oregon, and these investors held many billions of board feet of timber on lands throughout the West (U.S. Dept. of Commerce 1914b: 104-05). Throughout the West, rail development, timberland acquisition and milling were linked enterprises, and here the situation was no different: Hammond in particular was noted for his diversified financial interests in all three of these sectors within Clatsop County. He purchased the Astoria and South Coast Railroad (the "Seashore Road Company") that linked Astoria with Seaside in 1897, renaming it the Astoria & Columbia River Railroad. He then forged a rail connection to the Northern Pacific by building a line from Astoria to Goble, in Columbia County, providing the first through train from Portland to the coast in 1898.[96] This linkage to the transcontinental railroads gave the timber interests of the lower Columbia new shipping options and unprecedented access to American regional markets, allowing for lumber sales to the East Coast in particular, and increasing the demand for local timber and timberland. These events were perfectly timed for the investors as they acquired their expansive timber holdings on the Columbia-Pacific.

Figure 8.5 – Frontier industrialist, Andrew Benoni "A.B." Hammond, as he looked during his days in Missoula, Montana before moving to the Columbia-Pacific region and forever transforming the industrial landscape and land ownership maps of the region. Having achieved considerable financial success in Montana and Oregon, he would later move, along with many of his business interests, to California. Special Collections, Mansfield Library, University of Montana-Missoula – Courtesy Wikimedia Commons.

Together, these investors used a variety of mechanisms to acquire their vast holdings, including (but not limited to) the acquisition of homestead claims and Timber and Stone Act claims. There were also deals with the region's rail companies, involving the exchange of lands and scrip, that were only thinly documented at the time. Among his other accomplishments, Smith was notable for having attempted to short-circuit a proposal to develop a Saddle Mountain National Park in 1908, in spite of considerable public support for such a park. He accomplished this by presenting railroad company scrip, seeking to claim part of the 1,920 acres the federal government was prepared to set aside to create the new park (U.S. Dept. of Commerce 1914b: 57). [97] In many parts of the County, their shared interests were owned through an umbrella company, the Hammond Lumber Company. Much of the rest of the County was acquired by a range of smaller business interests through similar mechanisms.[98] A patchwork of ownerships is therefore clear on 1910 maps of the County, with such names as the Dubois Lumber Company, Oregon Timber, Western Oregon Trust Company, Crossett Timber Company, Willamette Pulp and Paper Company, and Gladstone Oregon Timber Company (Metsker 1910).

Soon, this speculative bubble would burst. The feverish pace of timber land acquisition in the beginning of the 20th century had been fueled in part by an expectation that development in the hinterlands was necessary, but also that entrepreneurs like Benson and the arrival of the transcontinental railroad would result in localized shortages of timber, causing land values to continue moving upward. But following the rampant speculation and timberland acquisition on the Columbia-Pacific in the first decade of the 20th century, it soon became clear that the cash value of timber land was flat-lining. The companies that had entered the

speculation market solely for investment began to drop out of the region, their lands being acquired by the large companies actively involved in timber production. Land holdings became increasingly concentrated in a small number of companies, including Weyerhaeuser on the north side of the river, and Crown-Willamette. In the years ahead, the latter gradually acquired many of Hammond's holdings and other lands throughout Clatsop County. The speculative land acquisition of the early 20th century had left an enduring mark—permanently rearranging land ownership patterns and land use practices in the Columbia-Pacific region, and conveying the majority of the region's lands to timber company ownership, with corporate inheritors and descendants still managing the lands to this day.

The U.S. Army Spruce Production Division

At the same moment speculative mania began to wane in the early 20th century, the attention of the timber industry ironically shifted away from the interior. Unforeseen events in Europe rearranged timber markets and brought lumbering back down to tidewater. Initially hesitant to commit to a war raging in Europe since 1914, the United States officially joined Allied forces in the World War I war effort on April 6, 1917, thus entering the foreign conflict with unprecedented commitment and zeal. At this point, the Allies were deadlocked in trench warfare, struggling to stay on par with the Germans' formidable air forces. they did found themselves in dire need of light yet durable lumber to construct airplanes. Prior to U.S. involvement in the War, Allied forces attempted to use European timber to produce combat aircrafts, but were unable to maintain adequate levels of production—in part due to the loss of timber industry manpower to military pursuits. By 1916, wood from the Pacific Northwest was already entering the military airplane market.

As America entered the war, however, the timber shortage became America's problem too. As noted by Brigadier-General Brice P. Disque, *"it was represented to me that our successful termination of the war was largely dependent upon an immediate and very great increase in production of lumber suitable for aircraft purposes"* (1920:I). The Sitka spruce of the coast, with its uniquely light and durable wood, adapted to the coastal storms spiraling off the Pacific, proved to be the military's wood of choice. As a result, in 1917, the United States Army established a subsidiary Spruce Production Division (SPD) to provide Allied forces with high quality spruce for combat aircraft, as well as Douglas-fir for ship manufacturing during the War (Tonsfeldt 2013; Military Order 2011; Crossman 2011).

Figure 8.6 – Workers from the U.S. Army Spruce Production Division in 1917 or 1918, harvesting an old Sitka spruce tree near Seaside. Well into the early 20th century, muscle-powered logging was the norm, with axes and crosscut saws. Springboards protrude from the sides of the tree. The wood from these trees were shipped by rail to a number of log dumps, including Netul Landing. Gerald W. Williams Collection (postcards), via Oregon State University Archives, Courtesy Wikimedia Commons.

Despite the large quantities of timber in the region and the increased production of spruce in area mills, the Pacific Northwest timber industry struggled to meet the needs of the Allies—roughly ten million board feet per month by October of 1917 (Williams 1999:2-3). The timing of this spike in demand was terrible. On July 16, 1917, the lumber, logging, and sawmill divisions of both the Industrial Workers of the World (IWW), as well as the American Federation of Labor (AFL) had initiated a strike against the nation's lumber companies, seeking better work conditions and an eight-hour workday for laborers in the rough-and-tumble mills of the era. There was also limited industrial capacity for Sitka spruce development and, some sources suggest, certain lumber companies maintained a cap on production to keep market values elevated, contributing to the lumber shortfall. Together, these events created unwelcome ambiguity in spruce markets and added to anxieties clear to Washington D.C. and beyond. In the summer of 1917, France, England and Italy's governments sent a delegation from their military aviation units to the forests of Oregon and Washington to persuade regional mills to increase their spruce output to meet the production needs of the Allied forces (Tonsfeldt 2013; Williams 1999).

During that summer, the United States government began to consider the need for direct government intervention in the Pacific Northwest's lumber industry, and a number of temporary boards were developed to address the spruce supply question.[99] On May 7, 1917, General John J. Pershing and chief-of-staff General James G. Harbord brought former Captain Brice Disque to Washington, D.C. to seek his assistance in evaluating the spruce production problems in the Pacific Northwest. Disque then traveled to the region and spent several months meeting with both mill owners and IWW representatives, attempting to understand the extent of the issues. He concluded his evaluation with a report back to Washington that labor disputes could not be overcome without U.S. government intervention. He believed soldiers should be placed in the forests of the Pacific Northwest to boost production of Sitka spruce (Military Order of the World Wars 2011:9; Williams 1999:3-4).

Reacting to Disque's report, the Army Signal Corps was placed in charge of rectifying labor issues in the lumber industry and seeing to the efficiency of spruce lumber production. On September 29, 1917, the army reinstated Disque as lieutenant colonel and placed him in charge of creating a plan for a unit of soldiers to work within the woods producing aircraft-quality lumber for the war (Military Order of the World Wars 2011:9). At this point, Disque travelled to Portland, Oregon to meet with both

leading loggers and mill men to attempt to understand and rectify labor and supply issues. Disque was decidedly unsympathetic to the demands of labor at this time of national crisis. He noted,

"At that conference I learned that the entire lumber industry of the Northwest was in a chaotic condition. The IWW seemed to be running away with things; there had been strikes and sabotage rampant for six months. Summer development of logging operations had been prevented and the industry was going into the winter totally unprepared for normal business, to say nothing of the supreme effort it had to make because of the war" (1920:I-II).

By November 6, 1917, Disque had been promoted to Colonel and was named Commander of a new military unit to take federal control of spruce production, aptly named the Spruce Production Division (SPD) of the United States Army (Evans and Williams 1984:6). Disque's first order of business was the recruitment of new labor to bypass striking workers and increase production of aircraft-quality spruce lumber. According to Disque, when he arrived back in the Pacific Northwest, labor was scarce—not only because of the strike, but because of the mobilization of many young men into other aspects of the war effort:

"Loyal and skilled woodsmen had left the woods in large numbers through the draft, voluntary enlistment, and distaste for strikes and agitation, or to secure the more attractive wages and conditions in other war industries. It was estimated that there was a shortage of seven thousand in October 1917" (1920:II).

In light of this, Disque requested that a modest "army" of soldiers, especially those with prior timber experience, be mobilized to take work in the forests of the Pacific Northwest coast. The Department of War, the Department of Labor and Samuel Gompers of the AFL hastily devised a plan: by December 4, 1917, 5,000 men (of a total of 10,000 authorized) arrived at the Vancouver Barracks for duty.[100] The SPD men were assigned to independent squadrons either logging or working in mills, working on construction jobs with the SPD Engineering groups or with contractors, or working at the Vancouver Cut-up Plant. While many in the IWW took this to be an act of "union-busting," Disque sought to portray the SPD forces as neutral third parties who would work with local labor and timber companies on even terms (Tonsfeldt 2013; Williams 1994; United States Spruce Production Corporation 1920).[101]

With the labor issue largely resolved, Disque and his new SPD recruits turned to the difficult task of removing spruce timber from the woods and transporting it to mills in the absence of significant infrastructure. While railroads were being built enthusiastically into the Douglas-fir region by the likes of Simon Benson, comparatively little attention had been directed at developing comparable infrastructure for accessing the spruce forests of the outer coast. As Kaminsky (1989: 33) noted of Sitka spruce production on the eve of the war, *"Logging companies had not constructed any camps nor figured out how to remove the huge sticks, as prior to the war it was of low value."* To make matters worse, the Sitka spruce that was most accessible, lining the shores of the Columbia River estuary, had been among the first trees harvested by early settlers, requiring that more remote patches be sought in heretofore undeveloped areas up and down the coast. As the Spruce Production Division opined,

"The spruce family seems to have been an early fugitive from justice. At least its habitat is fixed in the remotest, most inaccessible portions of the whole coast country. That part of the Coast Range which faces the Pacific Ocean...It is scarred deeply with great canyons and ravines. It is covered with an underbrush impenetrable to man without the use of tools" (United States Spruce Production Corporation 1920:33).

So too, the milling of wood for spruce airplanes was to take place in Vancouver, many river miles away from the outer coast, where Sitka spruce was found. In short order, it became clear that the SPD would have to build an entirely new infrastructure to link undeveloped spruce forests to the Columbia estuary. Originally, the SPD sought to use trucks to ship logs to milling operations, but this proved difficult. Few roads were developed in some of the prime spruce lands, and the roads that were developed were marginal in quality and scarcely passable in the approach winter of 1917-18. In this era, railroads were seen as the only plausible solution to transportation challenges (Kaminsky 1989; Evans and Williams 1984).

The SPD almost immediately began a railroad construction program to install rail lines throughout the Spruce-hemlock zone of the outer coast. Rail lines were proposed especially for areas where grades were moderate and would allow access into large harvestable drainage basins. These were configured in places where the logs could be brought to tidewater and from there shipped in rafts—reminiscent of Benson's 'Cigar rafts"—to large spruce mills. This included the Spruce Division facilities in Vancouver, Washington and Toledo, Oregon. Very quickly, the SPD developed thirteen principal railroads within Washington and Oregon, accounting

Figure 8.7 – The construction of rail lines by hand was arduous, wet work – especially for the many Spruce Production Division recruits who had little or no prior experience with the work, or with the climate of the Columbia-Pacific region. Here, a SPD crew clears a mudslide from a freshly laid section of track on the Lewis and Clark Railroad, some distance upstream from the Netul Landing log dump. Photo courtesy Clatsop County Historical Society.

for 173 miles of main line and 181 miles of tributary lines and spurs. Of these thirteen lines, six were in coastal Oregon and seven were in coastal Washington.[102] The Lewis and Clark River basin was one of the 13 places proposed for the development of such rail lines. By late 1917, the Spruce Division recruited local firms to begin laying track for the new rail line—Spruce Production Division Line 9—with its log dump site at Netul Landing, now sitting within Lewis and Clark National and State Historical Parks (Kaminsky 1989; Evans and Williams 1984).

Local rail cars and engines were used on these rail lines, including the Lewis and Clark track, but more capacity was needed. During the height of World War I, the nation's rail capacities were being overtaxed by wartime demand for troop transport and the shipment of military and industrial goods. President Woodrow Wilson established United States Railroad Administration (USRA) to oversee efforts to streamline rail activities, while William McAdoo was appointed Director General of

the new agency. Under McAdoo, a call was put out nationwide for all unused rail cars to support military efforts, including those of the Spruce Division. The Colorado Midland was one of the rail lines that replied in the affirmative, offering twenty obsolete locomotives—two of which would become the cornerstone of the Lewis and Clark Railroad operation. These were older, geared locomotives—crude compared to modern locomotives of the period, but "could take the rough, hastily laid track" through the uneven terrain up the Lewis and Clark River Basin (Kaminsky 1989: 36). These surplus engines were operational on the Lewis and Clark River by March of 1918, and linked the Lewis and Clark River operations with those further to the south. This included timber operations around Seaside then harvested by the large lumber camp called "Camp Clatsop." As far south as Cannon Beach, spruce camps operated in large numbers—indeed, the abrupt construction of camps prompted the beginning of downtown Cannon Beach, where a mess hall and other facilities were hastily constructed on what is today the middle of that town's commercial district (O'Donnell 1996).

The large quantities of Sitka spruce brought to Netul Landing were dropped into the Lewis and Clark River, sorted, bundled into rafts, and hauled away—most, apparently, to the Vancouver Barracks facility for processing. While spruce was the most crucial timber for the war effort, railroads carried other types as well, and the Lewis and Clark Railroad was no exception. In addition to spruce, it carried fir, hemlock and cedar to Netul Landing for processing—all of the wood being used for the war effort in Europe (Army Air Force SPD 1920: Exhibit 10). While SPD soldiers were involved in most aspects of these operations, local businesses and laborers were as well. They provided mechanical support, construction, and a wide range of services to support the Lewis and Clark Railroad and its spruce production mission. Other connections were also forged between SPD forces and the local community. For example, SPD soldiers were assigned to work in private lumber and logging companies in the lower Columbia River region deemed essential to the war effort. In Astoria, for example, the Astoria Box Company and the Oregon Pacific Mill & Lumber Co. retained some sixty-two SPD soldiers (Evans and Williams 1984: B-3).

Yet this was a short-lived effort. At eleven in the morning on November 11, 1918, Germany and the Allies signed an armistice to end World War I. With the end of the war came the near immediate end of the Spruce Production Division, which disbanded under the issuance of General Order #34 just one day after the Armistice was signed (Tonsfeldt 2013:140). In accordance with the Spruce Production Corporation's charter and telegraphed instructions from the Commanding General, Disque issued the General Order. Logging was halted. Trees cut in the days before

the armistice were left on the ground where they slowly rotted away. Some are visible in the study area to this day. Disque also ordered that construction related to the war effort cease, and called for contract mills to send remaining timber to the Vancouver mill to be cut into commercial lumber. So too, the General Order reappointed officers immediately to a new "Sales Board" for the sale of Spruce Production Division properties and a "Catalogue Board" to prepare a sales catalog for liquidated SPD assets (Tonsfeldt 2013:140–41; United States Spruce Production Corporation 1920:93). With these final measures, the SPD was effectively disbanded after roughly one year of service to the war effort.

Most of the lands and equipment of the Spruce Production Division in the Columbia-Pacific region were put up for auction, and much of this was sold between 1919 and 1920. The Lewis and Clark rail line continued to be used, and some portion of its equipment obtained by the Saddle Mountain Logging Company.[103] This company continued to refer to the rail line as the "Lewis and Clark Railroad," which extended up to the head of the Lewis and Clark drainage, connecting with the Spruce Corporation Railroad near the banks of Cullaby Creek, and linking the Netul Landing site to logging camps as far away as Seaside's Camp Clatsop and small-scale logging as far south as Cannon Beach (PNRBC n.d.). This Company maintained its own logging railroad for a few years and continued use of the Netul Landing log dump. In the early 1920s, the Saddle Mountain Logging Company was acquired by the Eastern & Western Lumber Company, but operations continued largely as before. The Netul Landing site appears to have reverted to the County at the onset of the Great Depression (a common situation with companies in financial distress).[104] Soon thereafter, the assets of the Eastern & Western Logging Company, including Saddle Mountain Logging Company assets, were obtained as a division of the Crown-Willamette Company at roughly the same time the company merged with Zellerbach Corporation to become Crown Zellerbach.[105] Netul Landing was also posed for acquisition by this new company. In Depression-era Clatsop County, the County had acquired over 100,000 acres of foreclosed timberland and other timber company assets. During World War II, pressure mounted to sell these lands back to private loggers. By 1945, Crown Zellerbach had capitalized on this trend, buying up significant tracts of lands, and other assets of timber companies that had not survived the Depression (Robin et al. 1980:13). Apparently in the course of these transactions, the company also acquired the Netul Landing site, which remained a cornerstone of log-shipping operations on the Lewis and Clark drainage (Kaminsky 1989; Metsker 1930).[106]

Netul Landing would continue to serve as a log dump and a "wet sort yard" or "high water log boom" even after the tracks were removed, with log trucks still bringing timber to the site into the late 20th century. It served as a dumping ground for unsorted logs where they could be sorted by species, size and quality for shipment to appropriate mills. These "sort yards" were numerous along the Columbia River estuary, but the Netul Landing yard was one of the larger and more active in the region. As O'Neal, Osburn and Williams point out,

"Eventually Oregon had at least seventeen wet sort yards and seven of those were in Clatsop County. The largest sort yard in Clatsop County was at Netul Landing on the Lewis and Clark River where it flows through what is now Lewis and Clark National and State Historical Parks" (O'Neal et al. forthcoming).

Figure 8.8 – Giant Sitka spruce logs on flatcars along the newly-constructed Lewis and Clark Railroad – at or close to the Netul Landing log dump where they were dumped into the water for shipping to the mill at Vancouver Barracks or other milling facilities. Photo courtesy Clatsop County Historical Society.

Many pilings are still visible in the water at Netul Landing, which were used to stabilize and secure log rafts produced at the site through the late-20th century. These log rafts were largely (though not exclusively) constructed of logs harvested on the lands of Crown Zellerbach, which owned the site and indeed most of Clatsop County's timberlands through this period. National Park Service volunteers have recently produced an overview of this history, including oral histories of loggers and other workers who used the site, that deserves more attention than it can receive here. The source is available from Lewis and Clark National and State Historical Parks (O'Neal et al. forthcoming).

Logging into the Late 20th Century

In the period immediately following World War I, the spruce forests of the outer coast returned to old patterns. The market for Sitka spruce was flooded as mills sought to liquidate inventory compiled for wartime use. Specialty mills' use of spruce and hemlock rebounded with new force, responding to the economic surge of the 1920s, buoyed somewhat by the vast new infrastructure of logging railroads, roads and other facilities hastily built on the coast with military dollars. Yet especially on the tidewater, more conventional types of milling boomed. Around this period, there was a great upswing in demand for large-dimension wood, as the final commercially available pockets of old timber in the American South and upper Midwest were depleted, causing logging companies, and the equipment and labor used to fell these forests, to migrate westward. The ancient Douglas fir forests of the Northwest, especially those close to tidewater and train stations, were next in line.

Throughout this period of Columbia-Pacific history, large mills were centered on the tidewater, often located close to today's park lands, in adjacent communities such as Ilwaco and Hammond. Among the largest mills in the area during this boom was the "Hammond Mill," for example, constructed in 1903 by the brothers George and William Hume—part of the Hume family that also constructed the Columbia's first salmon cannery—but soon sold to A.B. Hammond. As land baron A.B. Hammond built his land holdings in interior Clatsop County through the first two decades of the 20th century, he began acquiring facilities such as the Hammond Mill to accommodate production for logs cut from his vast and growing holdings of timberlands. Logs cut along the entire Columbia estuary could be towed to the site by boat, then milled and loaded onto ships or—with Hammond's rail link to the Northern Pacific now in place—transported throughout the United States. If Hammond, the man, was the central figure in the growing timber economy of

Clatsop County in this period, his mill in the town of Hammond was the epicenter of its production facilities.

Meanwhile, competing mills appeared at upstream sites, closer to the Douglas-fir zone, with facilities in places like Westport and Wauna in Oregon, and Raymond in Washington, constructing large spars, large-dimension lumber and planks. In time, these upstream facilities—closer to the Douglas fir and fronting rail lines and deep and relatively placid river channels—would eclipse the mills at the mouth of the river. Even today, these upriver sites continue to have the region's largest operating mills, while the Columbia mouth has relatively small operations, increasingly devoted to specialized products or log exports.

The lumbering boom came to an abrupt halt during the Great Depression, however, as construction largely ceased across the United States and globally. The abrupt decline in global demand for lumber silenced timber operations throughout the region. A sizeable portion of small mills closed for good. The value of timber lands plummeted in 1929-30, and many landowners abandoned timber lands, especially cutover lands, wishing to avoid taxes or other financial responsibilities. In other cases, counties foreclosed on lands in lieu of taxes. Lands that had been transferred from the public domain to private ownership just two decades prior were returned to public ownership. A portion of these lands—especially those acquired by counties with good stands of merchantable timber—would be resold to private entities, including Weyerhaeuser and Crown-Willamette companies, at the end of the Depression. Other lands—those that were swampy, rocky, or had been cleared of merchantable timber—commonly remained in public ownership after the Depression, becoming part of the Clatsop and Tillamook State Forests in particular. On the Washington side of the river, some portion of these abandoned lands found their way into the management of the Willapa Hills, Skamokawa, and Elochman state forests, alongside numerous sections already set aside to produce timber revenue for schools (U.S. Dept. of Commerce 1914a, 1914b; O'Callaghan 1979).

During the Depression, other private lands were abandoned and returned to public ownership after the catastrophic fires of the 1930s—most notably the "Tillamook Burns" of 1933, 1939, and 1945. These fires consumed 311,000, 190,000, and 180,000 acres respectively, together incinerating vast portions of forest in the interior of Oregon's Coast Range, including a sizeable portion of the private land holdings in southeastern Clatsop County, as well as northern Tillamook County, western Yamhill and Columbia Counties, and far northwestern Washington County. The first two fires were started by sparks from equipment at logging operations, the third by

an incautiously tossed cigarette (though some speculated that the third was caused by a Japanese incendiary balloon launched in the final moments of World War II to pull men from the Pacific front, as was attempted here and there along the Oregon and Washington coasts). These fires occurred during the summer months, when dry winds propelled by high pressure systems blew across the region from the east, burning trees up to the end of the outer coast's fog belt before losing momentum and being extinguished by fire crews. Firefighting involved a broad spectrum of the community, including CCC crews in the first two fires, and the impromptu recruitment of local volunteers. Manpower was so limited and the scale of the fires so big that crews even stopped random motorists along the highways of the region to recruit potential firefighters (the lead author's grandparents among them).

Some effort was made to salvage dead timber. But in the economic climate of the time, with much of the economic value of the lands lost in an instant, private landowners largely walked away from their interests in these lands. Much of the burned land was obtained by the State of Oregon or county governments in lieu of taxes. Following the passage of a reforestation bond bill in 1948, the land was replanted largely by state-supported foresters. They were aided in highly publicized volunteer replanting efforts, involving children from the region—school groups, scout troops, church organizations and others all joining the effort. Even today, one encounters charred remnants of timber under the regrown forests of the Tillamook Burn, as well as considerable pride among Northwest elders who helped replant the land as children (Wells 1999; Kemp 1967).[107]

The Tillamook Burn lands weren't entirely unique in being replanted, though the replanting of timber lands in the timber-rich Northwest had been a novelty up to this time. The region's timber companies, now decades into the experience of land ownership, began to reflect on long-term land management issues, raising questions about timber supply for the first time. Their response drew heavily on agricultural modes of production. Weyerhaeuser's "Timber is a Crop" campaign, launched in 1937 with an emphasis on replanting its logged-over southwest Washington lands, was hugely influential among timber companies of the time. Furthermore, planting allowed the company to employ laborers, largely idled by the Depression, with unconventional tree planting in a way that mirrored Civilian Conservation Corps projects. On June 21st, 1941, Weyerhaeuser dedicated the country's first "tree farm" on 130,000 acres near Montesano in Grays Harbor County, Washington, just north of the study area. Within a few years, similar ventures were underway on the Oregon side of the border, notably led by Crown Zellerbach Corporation on Clatsop and Columbia County lands (Wilma 2003).

Figure 8.9: Over the course of the 20th century, large mills near the head of tidewater, such as the Willapa Lumber Company mill in Raymond, Washington, came to dominate wood processing in the Columbia-Pacific region. With rail and wharf access, these mills on the eastern edge of the region and beyond sat closer to the Douglas fir zone – as transportation, tree-cutting and milling became more efficient, and would largely eclipse milling on the outer coast. Photo courtesy Washington State Historical Society.

Just as the Great Depression largely silenced timber companies in the Columbia-Pacific, the conclusion of World War II increased demand for timber products explosively. Returning soldiers, their spouses, and their baby boom children prompted a burst of new construction and other wood product demands, while American industrial forests were tapped for the rebuilding of war-torn cities of Europe and Asia. As logging railroads and steam donkeys had brought an initial industrial revolution to the forests of the Columbia-Pacific, the technological developments of the mid-20th century brought a second revolution. This revolution was even more impactful. It involved the introduction of power chainsaws, log trucks, and networks of logging roads reaching into remote parts of the region. Ironically, the Great Depression stalled timber production just as technological innovations appeared that would have transformed lumbering into a modern, industrial enterprise. Yet even as the forests fell silent, the elements of industrial transformation were falling into place, allowing the Columbia-Pacific to spring into action with unprecedented reach and efficiency. For the most part, early log trucks in the region had been military, converted to use for timber transport for the Spruce Production Division. After the First World War, these trucks entered civilian use in

support of logging, but had proven clunky and unsuited to the task. A number of independent inventions were made, converting these trucks into the vehicle we know today. This included the development of an articulated, trailered back half, allowing vehicles to turn tight radiuses, thus navigating narrow and winding forest roads as well as tight spaces on public streets and at milling facilities. Some sources suggest that the articulated log truck was a technological innovation first made by logging equipment mechanics in the Columbia-Pacific during the 1930s (Miller 1958: 213). A long list of independent log trucking companies appeared by the end of World War II alongside a growing "gyppo" logger workforce, both working for timber companies on a short-term contractual basis.

The entry of log trucks into the forest was aided by the rail grades of the Spruce Production Division and smaller private rail networks, which were decommissioned by the 1930s and largely gone by the mid-1940s, converted into "mainline" roads leading into the forest. Meanwhile, the growing availability of "bull-graders" and other early bulldozers was making logging road construction more plausible by the late 1930s. The machines allowed companies at the beginning of the post-War boom to develop a maze of rock-bed logging roads throughout the region, linked to mainline points of access. Over the preceding century, mills consolidated as operations became more efficient and centralized. With improving road networks and the rise of log trucks, single mills could now service a vast hinterland of logging operations, resulting in increasingly large and automated mills consolidated in fewer coastal communities (Cox 1974; Erickson 1965).

So too, timber-cutting technology made great strides since the axe and crosscut saws of the early 20th century. While a workable chainsaw prototype had been available since the 19th century, it was not until the late 1920s that portable chainsaws were commercially manufactured by companies like Dolmar and Stihl. But production at these companies stalled almost as soon as it started when the Great Depression eliminated much of the market. It was only in the late 1940s, as demand for timber products surged, that American companies such as McCullough Motors Corporation began large-scale industrial production of commercial chainsaws. Wartime technological innovations, America's growing industrial capacities, and an abundance of cheap electricity from Depression-era hydroelectric projects made lightweight aluminum components available for the first time. In turn, this allowed chainsaws to become light enough for widespread and efficient use in commercial forests. The McCullough Model 5-49, for example, one of the first gas-operated chainsaws light enough for a single operator, first appeared in 1948-49 and was widespread in the industrial forests of the Columbia-Pacific by the early

1950s. With timber cutting becoming increasingly efficient and the economics of logging becoming highly profitable with the rebound of lumber and plywood markets, timber companies scrambled to acquire timberlands. Large companies like Weyerhaeuser and Crown Zellerbach bought up smaller holdings, as well as former timberlands that had reverted to state ownership for taxes during the Depression. This included lands once owned by the likes of A.B. Hammond and his fellow land barons of the early 20th century (Crown Zellerbach 1958; Adams 1951b).[108]

By the mid-1950s, the readily accessible ancient forests had largely been cleared from areas accessible along the old rail grades and along the most accessible "mainline" logging roads. Road-building and logging proceeded into the highest mountains of the Columbia-Pacific, into the most inaccessible parts of the Willapa Hills and the mountains of southern Clatsop County. Portions of southern Clatsop County were still swathed in virgin forest until the 1970s and early 1980s, even as lowland forests comprised second or third rotations. Ancient forests were finally, and fairly completely, cleared from the private lands of the region. Only a few old stands remained, mostly in parks and other public lands. The advent of expansive logging in the high country had diverse and often destructive effects, sometimes prompting landslides and accelerating erosion in certain settings. In turn, fine sediments drifted downstream, settling when they reached slow water. In many estuaries, the Columbia and Willapa Bay estuaries prominent among them, intensified industrial logging was matched by an expansion of mud flats and other deposits, often filled with sediments more characteristic of high mountain regions. In many places, salt marsh vegetation expanded onto these new sediment deposits, creating vast lateral expansions of the tidal flats and reducing the width of navigable channels. To this day, the phenomenon can be seen on tidal flats of the Young's Bay and Lewis and Clark River estuaries.

The region having been so thoroughly logged by the mid-20th century, the federal environmental legislation of the following decades such as the Endangered Species Act would have little bearing on timber practices relative to other parts of the Pacific Northwest—the impacts of such sedimentation on threatened coastal fish populations being among the few points of relevance. More salient were the Forest Practices Acts of both states, which demanded the replanting of harvested lands and eventually set upper limits for clearcut size, requiring buffers on fish-bearing streams and the like (Pyle 2001; Dicken et al. 1961).

The region's mills began to retool their operations to accommodate the changing nature of the forest, and even as they intensified production by the mid-1950s, some

Figure 8.10 – The Crown Zellerbach log dump and sort yard at Netul Landing, seen here in the 1970s, continued to operate into the late 20th century. Its railroad tracks were removed and replaced by roadbeds long ago, as was true throughout the region – many of the old rail grades becoming the "mainline" logging roads of the late 20th century. At Netul Landing, the area was accessed by log trucks into the 1980s. Logs were lifted with a boom and could be deposited in the water for sorting, then towed by boat to a number of local mills. Photo courtesy National Park Service, Lewis and Clark National and State Historical Parks.

of the region's largest mills downsized their equipment to accommodate only second-growth logs. The industry saw other major changes as well. The production of pulp for paper—often for export to mills outside the immediate area, such as in Portland or California—had been part of the Columbia-Pacific's economy since the late 19th century, growing quickly with the emergence of the Crown Willamette Paper Company and other paper manufacturing interests able to use less marketable tree species for paper production (for example, the Western hemlock). Yet an explosion in chemical engineering in the post-War era brought access to new laminates and resins, allowing for the region's plywood and pulp and paper industries to expand. By the 1950s, spruce and hemlock, always difficult trees to sell on conventional lumber markets, were increasingly used along with other species in the production of cardboard, laminate plywood, and even toilet tissue. Vast mills, such as the Georgia-Pacific pulp mill in Wauna, Oregon that processed trees from throughout the Columbia-Pacific region, appeared or were expanded to produce such consumer

products on an unprecedented scale. Ironically, the rise in paper production, coupled with the growing concentration of lumber milling capacity in the upper Columbia River estuary, just beyond the study area, resulted in an aggregate decline in lumber milling in the region. Even in post-War years, the quantity of milled lumber never quite reached its pre-Depression peak on the lower Columbia River estuary (ODF 2005).

In recent decades, the economics of the timber industry have changed yet again. Especially since the 1980s, speculation on timber land has rebounded in a manner reminiscent of the land booms of the early 20th century. Throughout the study area, and especially in Clatsop County, there have been many rapid exchanges of timber land between companies that often do not log, or log much, but simply hold the land as assets in their portfolios before passing them on to another investor. Many portions of the Clatsop County tree farm owned by Crown Zellerbach in the mid-20th century—originally comprising more than 150,000 acres of the County, and including lands acquired by the National Park Service in the 2004 expansion of Fort Clatsop—have been exchanged between no fewer than eight companies since the early 1980s.[109] Though certain employees have carried over between companies, the management philosophies guiding the fate of these lands vacillate with surprising speed—a partial explanation for why the 2004 expansion of the Fort Clatsop sub-unit of the Lewis and Clark National and State Historical Parks into adjacent timberlands was vehemently opposed by one owner (Cavenham Industries) only to be enthusiastically assisted by two of that company's successors (Willamette Industries and Weyerhaeuser Company). The fate of the Columbia-Pacific's timberlands is still in flux, its history still being written.

Meanwhile, the industry's products are in flux too. With the commercially available ancient forests of the coast having been logged a generation ago, large-dimension lumber is in short supply. Similarly, the quality of the wood has changed, as the tight-grained woods of the ancient forests is replaced by relatively pithy wide-grained wood of trees grown quickly in direct sunlight. New cottage industries have emerged, centered on the salvage of what old wood is still available in the Columbia-Pacific region. Buildings built before mid-century were typically constructed of high-quality woods irrespective of their origin. Thus, the buildings are commonly salvaged for large beams. Large-dimension wood is even milled from the unblemished centers of old piers and pilings. Yet this new industry ventures into the forest as well. Even when Western red cedars were toppled decades ago, lying submerged under carpets of moss, their tannin-rich wood can lie intact. Wood and

shingles salvaged from these downed trees, for use as shingles or for specialized, often ornamental lumber, exceeds the quality of products from freshly cut second-growth cedars. The Larson mill sitting just south of the Fort Clatsop boundary at the time of this writing, as well as the related Larson salvage operation to the north, are supported in no small part by the sale of old woods as part of a growing specialty market—an adaptation of the historical circumstances of logging in the Columbia-Pacific region.[110]

9 Navigating the Bar

Early Lifesaving and Aids to Navigation at the Mouth of the Columbia River

No matter the period or the dominant industry of the day, shipping has been the lifeblood of the Columbia-Pacific region. Fur trading vessels, ships heavy with canned salmon, or barges of bundled lumber have come and gone from the mouth of the Columbia, sustaining the towns that line its banks, just as the canoes of Chinooks, Clatsops, and visitors from coastal tribes traveled the waters for unknown generations beforehand. Yet traversing the mouth of the Columbia is no simple task. Here, the Columbia enters the open Pacific directly and in full force, without the gentle transitions afforded by protected waters and sleepy bays. The Fraser to the north and the Sacramento to the south both enter vast and protected interior waters before entering the sea. The Strait of Juan de Fuca is vast and wide, admitting ships in all but the roughest weather, but among the major shipping port rivers of the West, the Columbia stands apart.

Mariners often found, as Lieutenant Charles Wilkes did when surveying the mouth of the Columbia in 1841, *"breakers extending from Cape Disappointment to Point Adams, in one unbroken line."* Breakers sometimes exceeding 30 feet as Pacific Ocean waves meet surging river waters full force, the river often entering the sea at the rate of a quarter million gallons—and sometimes over a million gallons—per second, racing westward, picking up speed on the ebb tide, and making the entire bar deadly and impassible. So too, the channels at the great river's mouth were notoriously dynamic—the heavy sediment burden of the entire Columbia Basin meeting tidewater, which slowed as the river approached the river bar and dropped the suspended load. Islands and sandspits appeared and disappeared just inside the river's mouth historically, adding to the turbulence and uncertainty of an unforgiving waterway. The earliest non-Native navigators entering the river sometimes wrecked at its mouth. In 1798, the brigantine *Hazard* dispatched a small boat to take soundings of the river's mouth, and was lost along with its crew of five men. The British bark *William and Ann*, carrying supplies for Fort Vancouver, wrecked

on Clatsop Spit in 1829, and all 29 men aboard lost their lives —an event that precipitated one of the few violent conflicts between Native and non-Native peoples in the history of the Columbia-Pacific region. Returning to Wilkes:

"Mere description can give little idea of the terrors of the bar of the Columbia: all who have seen it have spoken of the wilderness of the scene, and the incessant roar of the waters, representing it as one of the most fearful sights than can possibly meet the eye of the sailor. The difficulty of its channel, the distance of the leading sailing marks, their uncertainty to one unacquainted with them, the want of knowledge of the strength and direction of the current, with the necessity of approaching close to unseen dangers, the transition from clear to turbid water, all cause doubt and mistrust" (in Barry 1938: 153).

Charles Wilkes knew all too well the dangers of the river. Today, a broad bar of sand off the western tip of Cape Disappointment is named Peacock Spit after the Wilkes expedition ship the U.S.S. *Peacock* that wrecked on the spit trying to enter the river in July of 1841 (Elliott 1917: 232).

In some ways, the notorious river bar has come to define aspects of the Columbia-Pacific economy and culture. Since Robert Gray's arrival at the mouth of the Columbia in 1792, roughly 2,000 large vessels have been lost at this river's mouth, along with perhaps 700 lives. Bar pilots and river pilots have been recurring, heroic figures in the regional lore, as have the members of the U.S. Coast Guard, helping ships navigate churning and unfamiliar waters, saving ships, cargoes and lives. Through the 19th and 20th centuries, the residents of the Columbia-Pacific and the shipping and fishing interests of the larger river made ambitious efforts to tame the mouth of the river for the sake of public safety. So too, economic boosters often became some of the earliest and most eager proponents for jetty development, dredging and other navigation improvements, as they envisioned Astoria and other towns as shipping ports of national significance.

The loss of so many ships has had numerous effects on the region, bringing a succession of personal dramas and tragedies to the early coast, delaying projects and changing history. Even the landmarks bear the names of the ships that have foundered on the coast—Desdemona Sands on the Oregon side of the Columbia mouth, named for the American bark *Desdemona* that ran aground there in 1857 and sank; Peacock Spit off the mouth from Cape Disappointment, where the Wilkes Expedition's ship the U.S.S. *Peacock* was lost in 1841. The town of Cannon Beach is named for cannons and other flotsam that washed ashore from the U.S.S. *Shark*,

Figure 9.1 – The British bark, Peter Iredale, wrecked on Clatsop Spit in 1906, its crew being rescued with the aid of the U.S. Life-Saving Service and given shelter at Fort Stevens. One of many shipwrecks on the Columbia-Pacific waterfront, the uniquely accessible wreckage of this ship remains a popular attraction in Fort Stevens State Park today. Courtesy Oregon Historical Society.

wrecked at the Columbia River bar in 1846. Shipwrecks can still be found in fragmentary form along the shores of the Columbia–Pacific region, perhaps nowhere so prominently than at the wreck of the British bark, the *Peter Iredale*, wrecked on the shoreline near Fort Stevens in 1906, where its slowly deteriorating hull remains a prominent tourist attraction today (Shine 2008; Gibbs 1973).[111]

As with other aspects of history discussed in this document, this aspect of the region's history is vast and rich, deserving more attention than allowed here. Yet the story of Columbia–Pacific navigation and lifesaving has sometimes played out on the lands of LEWI parks. It is this narrower story that we turn our attention to here.

Lighthouses and Lightships at the Mouth of the Columbia

From the earliest written maritime history of this coast, it is clear that mariners have sought to reduce the dangers of navigation at the Columbia's mouth through the use of markers and other devices. The three most prominent landmarks at the river's mouth—Cape Disappointment, Chinook Point/Scarborough Hill, and Point Adams, were all used from earliest times to navigate a course through the river's treacherous entrance from the sea. In 1812, members of the Astor Party placed a white flag on the summit of Cape Disappointment and burned several trees on the cape at night to signal their supply ship, the *Beaver*. Three decades later a notch was created on the summit of the cape by cutting the tops of tall trees on its crest, so as to serve as a bearing for vessels steering toward the river's mouth—a landmark that was still mentioned in 1850 United States Coast Survey sailing instructions for the Columbia River mouth. For a time, Governor George Simpson of the Hudson's Bay Company had attempted to acquire a portion of Cape Disappointment for a navigational lookout to augment this simple marker. With the beginning of the Oregon Territory as a political unit of the United States, the need for bolder, more enduring ways of marking the river's entrance using lighthouses and other devices became apparent to all the region's travelers. When Congress passed an act in 1848 to establish the Oregon Territorial Government, there was not a single lighthouse along the 1,300 miles of rugged coastline from Puget Sound to the California-Mexico border. This legislation, which effectively designated Oregon as a U.S. territory, authorized in the same instant some $15,000 for lighthouse construction at two places now within the state of Washington—Cape Disappointment and New Dungeness, as well as for the placement of navigational buoys at Astoria harbor and the mouth of the Columbia (Noble 1989; Hussey 1957; *9 Stat. 323-331*).

Less than a decade after Wilkes' fateful visit to the lower Columbia, and with the territories of Oregon and Washington now in the undisputed control of the United States, surveyors began to assess the Columbia's mouth and contemplate strategies for its navigation. To this end, Lieutenant William P. McArthur, with the assistance of Lieutenant Washington A. Bartlett, plied its waters as part of the 1849–50 Pacific Coast Survey. McArthur arrived in San Francisco in October 1849 with the intention of assembling a survey crew in the booming new city. He was initially stymied, finding that the wages he offered could not compete with those offered by crews heading to the gold fields. But after six months, McArthur finally pulled together a crew, noting, with some apparent relief,

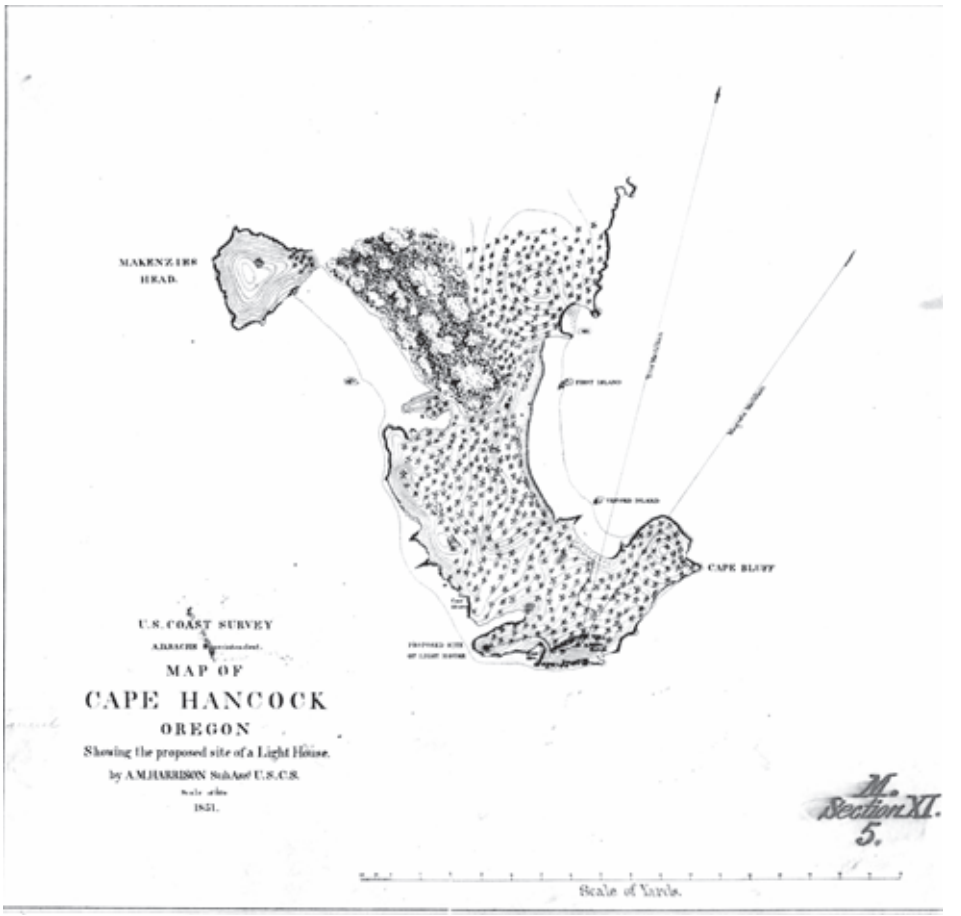


Figure 9.2 – One of the survey maps of Cape Disappointment resulting from the initial Columbia River surveys, showing elevation, vegetation, and survey meridians. From U.S. Coast Survey 1851. *Map of Cape Hancock, Oregon, Showing the Proposed Site of a Light House.* Washington, D.C. Photo courtesy National Archives and Records Administration.

"In a few days I go to the mouth of the Columbia River and shall make a reconnaissance of the coast both on my way up and returning. I propose also to choose Points for a Light house, Buoys, etc., at the mouth of that river" (McArthur 1915: 254).

Ironically, witnessing the bar during calm weather, McArthur would initially conclude that the river's dangers had been exaggerated by past mariners:

"We have been successful in surveying the mouth of the Columbia River and up the same as far as Astoria. You will be surprised when I tell you that the dangers of the navigation of this

truly magnificent river have been vastly exaggerated. We have crossed the bar sometimes as many as ten times a day for weeks together. More vessels have visited the Columbia within the last year than perhaps ever before and not the slightest accident has occurred" (McArthur 1915: 258).

McArthur acknowledged, though, that the mouth of the Columbia in 1850 had changed its configuration significantly since Wilkes' visit in 1841, with sandspits and islands having already migrated within the river's mouth. On this basis, he reported back to Washington D.C. that the bar would need to be made safe for navigation:

"[It] *is best under all circumstances to have a pilot…When comparing our chart with that of the [Wilkes] Exploring Expedition, the changes of the channels and shoals at the mouth of the Columbia river will be found to be numerous and considerable. Sand Island is nearly a mile further to the westward now than it was in 1840-'41. The north channel seems to be gradually filling up, whilst the new south channel is becoming both larger and deeper. This change will go on until some violent storm will throw up the sand again, and upon subsiding leave the water of the river to find a new channel. To these changes in the channel is to be attributed the great dread which navigators have had of the Columbia…I have recommended a Lighthouse on Cape Disappointment…The greatly increasing commerce of Oregon demands that these improvements be made immediately. The more especially since the Columbia is the most important portion of Oregon for the pursuits of commerce"* (McArthur 1915: 266-68).

McArthur's recommendations for the development of a Cape Disappointment lighthouse and other navigational improvements would be repeated, with equal or greater urgency, by those early surveyors who followed. Of no small significance, the amount of ship traffic at the river's mouth was increasing dramatically. While the gold rush may have bedeviled McArthur's efforts to raise a survey crew, these same events brought an economic boom to the sparsely settled Northwest. Mining operations and the explosive growth of the new city of San Francisco created large markets for lumber, salmon, oysters, and other Northwestern goods. Yet as seaborne commerce increased, so too did shipwrecks at the Columbia's mouth. It was during these years of frequent shipwrecks—three in 1849, five in 1852, and five in 1853—that mariners are said to have dubbed the region "the Graveyard of the Pacific" (Gibbs 1950: 28).

Also contributing to the pressures for Columbia River lighthouses, the United States government was under intense national pressure to modernize the nation's lighthouse system at the time of McArthur's survey. Just as the Oregon Territory had a mandate for lighthouses from its beginning, the United States government too had been responsible for constructing lighthouses along the coastlines of the country since 1789, only a few years after the founding of the nation. Located exclusively on the eastern seaboard, the numbers of lighthouses had grown from 70 in 1822 to 256 over the next 20 years, to 331 by 1852. Yet the development of the system was often haphazard, leaving some areas (especially those with powerful shipping lobbies and congressional delegations) well protected, and others much less so, and commonly leaving lighthouses in the care of untrained and volunteer staff. Complaints about the nation's "system" for aiding navigation had become intense enough that Congress ordered an investigation in 1851. A nationwide campaign to expand the number of lighthouses ensued—key to this effort being the application of new technologies such as light-intensifying Fresnel lenses, and the training and hiring of professional personnel.[112] The types of federally supported "aids to navigation" would expand rapidly over the next sixty years to include not only lighthouses, but lightships, buoys, fog signals, small lights of various kinds, and jetties. (By the time that lighthouses and functions like lifesaving were centralized under the U.S. Coast Guard in 1939, the number of navigational aids under federal control reached some 24,000 facilities nationwide. Most of the functioning lighthouses have since been automated and ownership of many of the older structures have been transferred to organizations specializing in historic preservation.)

The report of the McArthur Coast Survey recommended the development of no fewer than 15 lighthouses along the Pacific Coast of the United States, in addition to the Cape Disappointment light. The southern tip of Cape Disappointment was designated as a "lighthouse reservation" and plans by the U.S. Lighthouse Service to construct a Cape Disappointment lighthouse moved forward by April of 1853. Construction was delayed, ironically, when the bark *Oriole*, carrying the lighthouse's Fresnel lens and other building supplies, wrecked directly below the cape. Additional supplies arrived and construction moved forward, though, with another Fresnel lens, relocated from a New Jersey lighthouse, reaching the site by 1855.[113] The lighthouse was fully operational on October 15, 1856.

The Cape Disappointment lighthouse, the oldest still standing on the Northwest coast of North America, is a 53-foot structure with a focal plane set 220 feet above the sea. The lighthouse was accompanied by a 1,600-pound fog bell, though the bell proved ineffective as its tolls from the high cape's top were lost to the sounds of the

sea. Built in 1856, the bell was removed by 1881. An "ox-team road" built by the Coast Survey in 1851 provided access to the lighthouse, but the steep terrain dictated that the keeper's residence be constructed downhill from the tower, about halfway to Baker Bay. Completed in 1854, this dwelling deviated from the original plans, which called for a combined lighthouse and residence. Situated on the more sheltered side of the cape, the house was expanded in May 1865 to provide room for the keeper's two assistants, while a new residential structure was built some 1,300 feet north of the lighthouse in 1871. The vessel *Shubrick*, the first steam-powered lighthouse tender, brought supplies to the Cape Disappointment lighthouse and served as a revenue cutter from its earliest operations, while also installing and maintaining some of the Columbia River's first navigational buoys beginning in 1859 (Lighthouse Friends 2013; Lucero and Hobbs 2009; Nelson 1994).

Yet even before the Cape Disappointment lighthouse was being constructed, President Millard Fillmore declared the same lands as a military reservation, prompting the construction of Fort Canby. Lighthouse and military functions at Cape Disappointment remained intertwined throughout the nineteenth century, and were sometimes at odds, though separate reservations had been approved for each. Both federal outposts developed side-by-side, often with contradictory functions and mandates. Cannons built adjacent to Cape Disappointment were seldom fired, for example, for fear of shattering the lighthouse's glass. Fort Canby's commanders requested the relocation of some of these functions (usually involving the relocation of the lighthouse) on more than one occasion without success. This odd relationship—sometimes collaborative and often not—linking the fate of the two facilities, arguably persisted until the decommissioning of Fort Canby in 1947.[114]

Construction continued on other Pacific coast lighthouses in subsequent years. Between 1852 and 1858, all the lighthouses recommended by the Coast Survey were erected and manned in turn by the U.S. Lighthouse Service, one of five predecessor agencies of the U.S. Coast Guard. The early lighthouses along the Oregon and Washington coasts all had the same Cape Cod style structure, with the lighthouse tower emerging from the center. The Coast Survey, meanwhile, continued to chart the estuaries of the region—until then, most were poorly and incompletely surveyed—and to compile information in the *Coast Pilot*, an annual publication with data on landmarks, rocks, buoys, and anchorages (Oregon Secretary of State 2013; Nelson 1994; Noble 1989).

Congress appropriated funds for the design and construction of additional navigational aids in the region on a case-by-case basis, as well as the appropriation

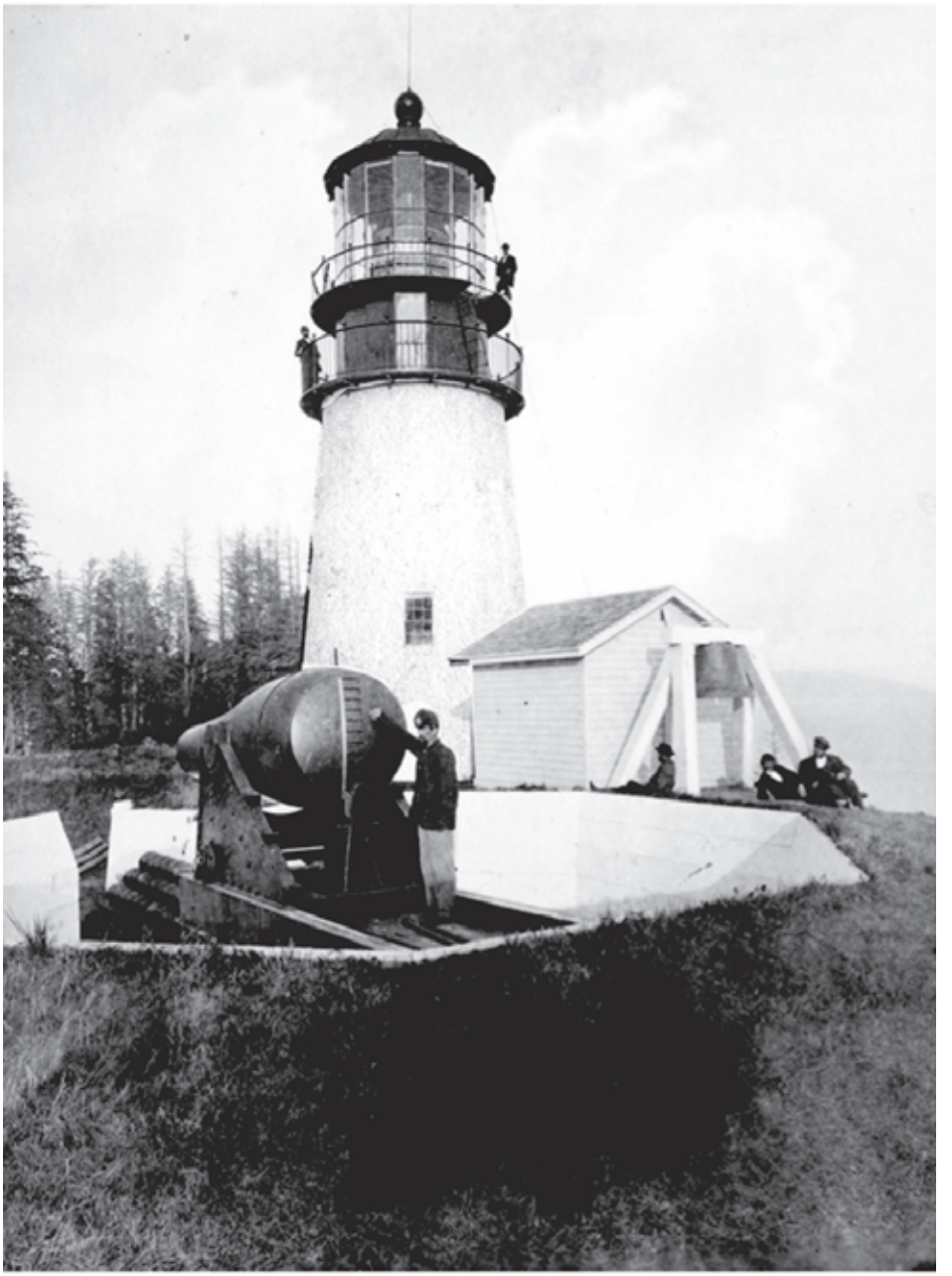


Figure 9.3 - The Cape Disappointment Lighthouse, sitting beside a cannon from the Fort Canby artillery battery – photographed by Eadweard Muybridge in 1871 or 1872. From National Archives and Records Administration; War Department, Fourth Army and Western Defense Command; Coast Defenses of the Columbia (03/17/1941 - 1946). Photo courtesy Wikimedia Commons.

of lands to develop such facilities. An overarching goal of the U.S. Lighthouse Service was to create a system of stations that might produce a continuous line-of-sight to light stations, so a mariner at sea could hold one light in view at all times moving along the coast. (Fog signals, built in this period and powered by steam engines, blasted warnings from a number of the stations to warn ships away from rocks and other navigational hazards.) With the goal of developing a continuous system of lighthouses, lands were placed in special "lighthouse reservation" status through various federal authorities. In the West, where settlement was sparse, this was a comparatively simple process, often involving the rededication of lands already in the public domain. Lighthouse reservations were established from the public domain in a number of places in the Columbia-Pacific region, some ultimately being developed as lighthouses, and others not.

A lighthouse was also added to Point Adams, at Fort Stevens, in 1875, sitting a short distance south-by-southwest of the military fortifications. This was an integrated facility with a two-story keeper's quarters built directly into the base of the light tower. With the construction of this light, the mouth of the Columbia was effectively framed by the river's two sentinels—the Cape Disappointment lighthouse and the Point Adams lighthouse. The light was plagued by shifting sands, requiring the construction of sand fences and other infrastructure, but was not undermined by the infamous erosion that plagued other parts of the Fort Stevens military reserve. This tidy arrangement did not last for long, however. The 1892 commissioning of the lightship *Columbia* replaced the functions of this light, and the 1899 extension of the south jetty at the Columbia River's mouth placed it some distance inland from the sea. Together, these events all but eliminated the need for the facility. After years of disuse, the light was burned to the ground in early 1912 by order of the Secretary of War, an effort both to eliminate fire hazards and create space for new gun emplacements at Fort Stevens' Battery Russell (Munson 2005; Nelson 1994; Miller 1958).

After a spate of shipwrecks on the northern approaches to the Columbia, Congress also approved funding for the construction of the North Head Lighthouse on a separate lighthouse reservation sitting on Cape Disappointment's northern end. Work began in 1897 and proceeded slowly thereafter, with the contractor eventually incurring so many late penalties that he scarcely "broke even" on the project. When completed in April 1898, the tower stood 65 feet high, with its base atop the basalt cliff situated almost 200 feet above sea level. The Cape Disappointment lighthouse's original Fresnel lens and five-wick oil lamp were moved to the new light two months later, and the light was operational one month hence. The contract included erection of a workroom attached to the tower, two oil houses located east of the

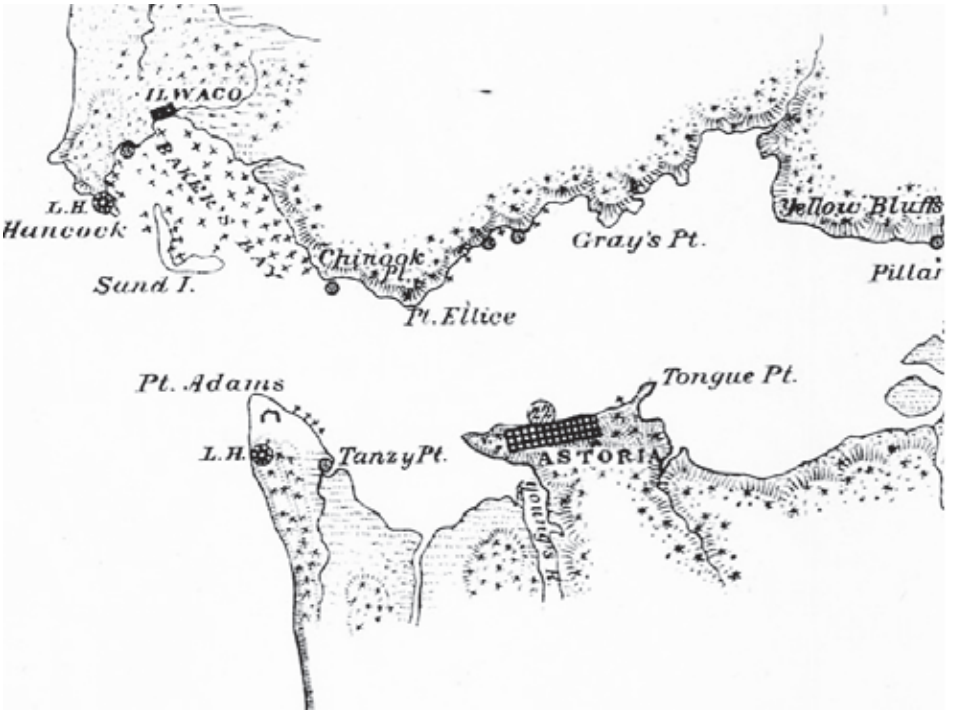


Figure 9.4 - A U.S. Army Corps of Engineers map of the mouth of the Columbia River in 1887, showing the symmetrical placement of the Cape Disappointment and Point Adams lighthouses around the Columbia River mouth. From U.S. Army Corps of Engineers, 1888. *The Columbia River from Celilo to the mouth showing locations of the salmon fisheries.* U.S. Army Corps of Engineers, Engineer Office, G.P.O. Photo courtesy National Archives and Records Administration.

main structure, a keeper's residence, a duplex to house assistant keepers, a barn, and smaller outbuildings. The original buildings in this well-preserved complex survive, the only real changes coming in the form of two lens replacements. (Electrification in 1937 allowed for substituting a fourth-order lens for the first-order Fresnel, so that mariners could identify North Head through a signature of flashes and eclipses; the U.S. Coast Guard fully automated this lighthouse in 1961 [Lucero and Hobbs 2009; University of Oregon Historic Preservation Program 2008]).

Lights were also developed in other sites around the Columbia-Pacific region. One of the earliest, the Willapa Bay Light, was established in 1858 on the north entrance to that bay—being undermined many years later by erosion that continues to tear away at the bay's north entrance. Other lighthouses were established at points up the Columbia River beginning with Tongue Point (1876) east of Astoria. A light was also constructed at Desdemona Sands in 1902, in part to account for the reduced visibility

Figure 9.5 – The North Head Lighthouse, shortly after its construction in the late 1890s, showing the main tower, as well as the attached workroom. Photo courtesy Oregon Historical Society.

Figure 9.6 – The North Head Lighthouse in truth involved a complex of structures, seen here from the air in 1937, including an attached workroom attached to the tower, two oil houses immediately to its east. On the bluff further to the east were the keeper's residence, a duplex to house assistant keepers, a barn, and smaller outbuildings. Most of these structures remain on the site today. Photo courtesy Washington State Historical Society.

and ultimate decommissioning, of the Cape Adams lighthouse. This lighthouse sat in the shallow intertidal waters at the entrance of the river, east of the bar. One of the latest lighthouses in operation, it was discontinued in 1964 (Nelson 1994).

To guide navigation around the entire Columbia-Pacific region, as well as its southern approaches, a number of lands were set aside for the construction of lighthouses and related facilities on Tillamook Head, in what is today Ecola State Park. The navigational and lifesaving potentials of this prominent headland were a subject of considerable debate, so that land acquisitions happened at different times and places, resulting in a patchwork of federal lands fringing the ocean edge of the headland. A lighthouse reservation was proposed in 1866, on the westernmost summit of Tillamook Head. U.S. Congress then appropriated some $50,000—a princely sum at the time—for the development of a lighthouse reservation in 1878 "on the bald hills on the south side of the head," which included certain lands on the southern flanks of Tillamook Head, proper. The U.S. Lighthouse Board initially

promoted the development of the Tillamook Head site rigorously, in spite of the technical challenges of constructing a lighthouse perched atop this isolated headland, at an elevation of roughly 1,000 feet. As one of its early reports on the matter noted, "*The construction of the Lighthouse at Tillamook head, on the isolated rock, will be attended with many difficulties, but the great advantage that will accrue to navigation will more than balance the cost*" (U.S. Lighthouse Board 1879: 7). The site was contentious, however, often being concealed by fog—even in summer, when upwelling and orographic fog banks hover over the ridgeline—and surveyors found that the most suitable building sites on the south face were almost entirely concealed from the river mouth by the hulking Tillamook Head summit.

Even as these negative findings made their way to the Lighthouse Service, Congress was appropriating additional funds for the project on the apparent strength of the original proposal (including an 1881 appropriation of $25,000) and additional lands were acquired along the rocky headland. Ultimately, lands were set aside in several locations, including the westernmost tip of the headland, and a narrow parcel occupying several relatively unforested areas (former Native American village sites and likely burned prairie areas) from Indian Beach to the vicinity of Chapman Point. Another piece of land, encompassing roughly a quarter section was set aside "for public purposes" on the north side of Tillamook Head in the 1880s, encompassing lands close to the modern park trailhead in Seaside.[115] Though never developed, these lands appear on maps as "lighthouse reservations" or "public purpose" lands for much of the late 19th century. They would later prove pivotal to the development of Ecola State Park, as some of these "surplus lands" were redirected to other agencies or purchased by affluent Portland philanthropists with bold visions for the public good (U.S. Lighthouse Board 1879; GLO n.d.)

Instead of Tillamook Head, the U.S. Lighthouse Service began to promote a more visible alternative site atop Tillamook Rock. Completed in 1881, Tillamook Rock Light still sits offshore from Ecola State Park. Oregon's only offshore lighthouse, it proved to be one of the most difficult lighthouses to construct or to operate along the Pacific coast. A little over a mile offshore from Tillamook Head and modern Ecola Park, the rock is often swept by huge swells. The rock had long been known by a place name translated "Dangerous Place" in the Nehalem language—Na'yigôsh—and events surrounding the lighthouse construction demonstrate the veracity of the name. In the summer of 1879, John R. Wheeler, District Superintendent of Lighthouse Construction, managed to make it onto the rock after two failed attempts. The swiftly rising seas made it impossible to land his measuring equipment on the outcropping, and he was forced to rely on a single tape measure to

take measurements for lighthouse construction. Wheeler hired John R. Trewaves, a lighthouse mason of almost celebrity status, to oversee construction. But stepping ashore on Tillamook Rock for the first time, Trewaves was swept away by a surging wave and his body was never recovered. The growing reputation of the rock, nicknamed "Terrible Tilly," made it initially difficult to find survey and construction crews in the months that followed. A large boom was finally installed that helped to land men and supplies safely on the rock. The Army Corps of Engineers worked from October 1879 to January 1881 to build the lighthouse, with the aid of private contractors. Native American observers of the time noted that the rock had been an important sea lion rookery and that lighthouse construction displaced the sea lions to rocks below Ecola Point. They noted that construction crews shot many sea lions to keep the rock clear during construction (Noble 1994; Harrington n.d.).[116]

On the night of January 3, 1881, just weeks before the Tillamook Rock light went into operation, the construction crew experienced a dramatic incident that illustrated the need for the light, as retold by David Nobles,

"*The usual bad weather had set in around the rock, when the construction boss entered the dwelling and stated that he saw the running lights of a ship coming toward the rock…So close did the ship pass the rock, workers heard the shouted command, "Hard aport!" The laborers began to kindle a large fire and lanterns were placed about to help outline the rock. The ship, which later proved to be the British bark Lupatia, missed the rock, but her skipper made the wrong turn and slammed into the shore of the mainland causing the loss of the entire crew [16 men]"* (Noble 1997: 76).

Finally lit in 1881, the Tillamook Rock light station took 575 working days to complete at a cost of $123,493, making it the most expensive lighthouse built on the west coast. The Tillamook Rock lighthouse served as an aid to navigation for more than 75 years, operated by the U.S. Lighthouse Service and U.S. Coast Guard. While this light effectively put to rest any plans to build a lighthouse on Tillamook Head, its presence did prompt the improvement of a rough road to Indian Beach, where a telegraph cable linked the lighthouse to the mainland for a time. The Tillamook Rock light was superseded by a signal-sending electronic buoy and decommissioned in 1957, being declared surplus property. The National Park Service, Oregon State Parks, and the U.S. Navy all refused to purchase the site, and it was ultimately sold for $5,000 to a private organization. A succession of owners developed proposals to use the site for any number of schemes, including a marine research center, a casino, and (most recently) a columbarium (Noble 1997).[117]

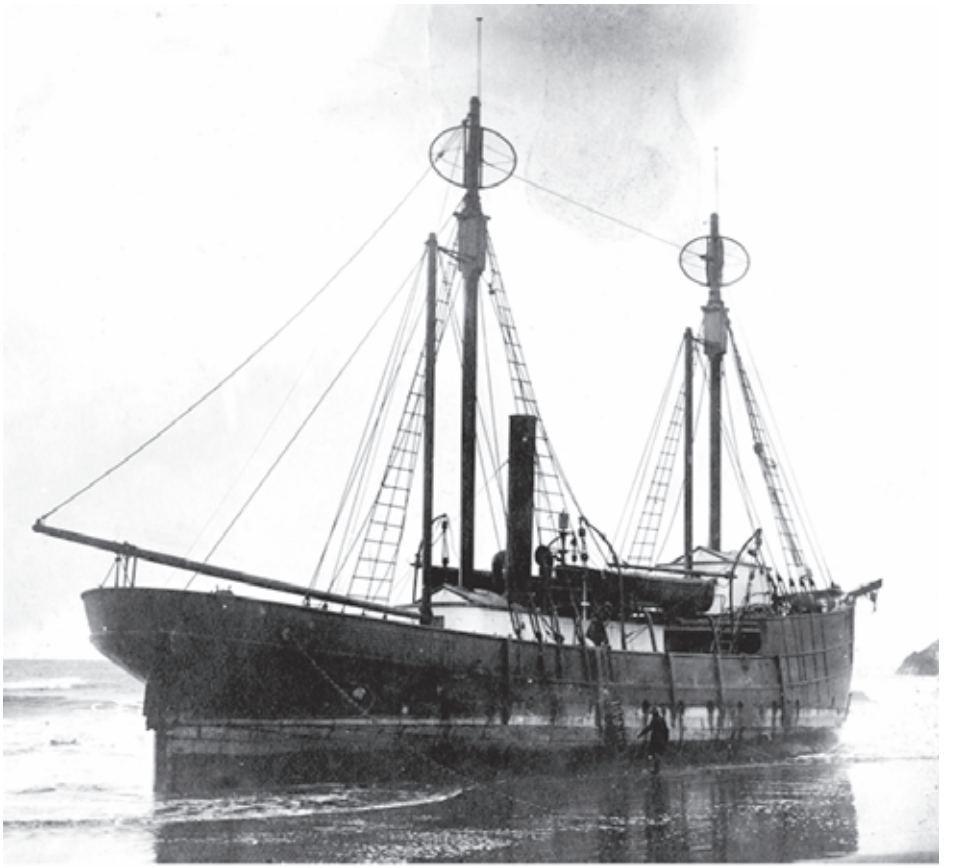


Figure 9.7 - Lightship No. 50, shortly after it was grounded on the western side of Cape Disappointment in November of 1899. Photo courtesy Washington State Historical Society.

Stationary lighthouses were not practical in some settings, and especially perilous or inaccessible areas were serviced by lightships. These were small specialized ships that patrolled waters along rugged and dangerous shorelines, effectively serving as floating lighthouses. A total of four lightships patrolled the Columbia River Bar from 1892 to 1979, when new technology rendered them redundant. To put their service into national perspective: 179 lightships were built between 1820 and 1952. In 1909, at roughly their height of use in the United States, 46 were deployed on the east coast, as opposed to only five on the west coast of the country.[118] In 1892 an appropriation of $60,000 funded construction of Columbia River Lightship No. 50, the first lightship stationed in the Pacific Northwest. The ship, built by Union Iron Works of San Francisco, measured 112 feet and had a crew of eight who for decades kept watch over the turbulent waters on the Columbia's approaches, maintained

Figure 9.8 – The Tillamook Rock Lighthouse offshore from Tillamook Head, in the 1940s. The Lighthouse Service originally received funds and acquired lands for a Tillamook Head lighthouse in what is now Ecola State Park, but the service ultimately opted to construct the beacon on the more visible, offshore Tillamook Rock in spite of imposing challenges of engineering and access. The light was operational from 1881 until 1957. From U.S. Department of the Treasury, Coast Guard, 13th District (ca. 1944 - 04/01/1967), National Archives and Records Administration. Photo courtesy Wikimedia Commons.

kerosene lights to signal ships, and fed coal into boilers to power a massive foghorn. In November 1899 Lightship No. 50 battled high seas and winds, running aground on the western side of Cape Disappointment. Unfavorable weather and difficult geography stranded the ship for months until it was put back into commission in April 1901. Three additional lightships followed in succession. Lightship No. 50 (1892–1909) was followed by steam-powered Lightship No. 88, which served the mouth of the river for thirty years from 1909–1939. Lightship No. 88 was followed by No. 93 (1939–1951), which served through World War II. Though modern technologies were making lightships increasingly obsolete, protection of the bar remained a high priority. Thus they were maintained at the Columbia River and in many other places along America's coastlines during the second World War. Lightship No. 604 (1951–1979) was the fourth and final Columbia River lightship and, in fact, the last lightship to serve on the Pacific coast. Lightship No. 604 was

replaced by a large navigational buoy, just one of the technological innovations that rendered lightships obsolete. This final lightship was moved almost immediately to the Columbia River Maritime Museum, where it is still toured by the public. The ship was listed as a National Historical Landmark in 1989, the first ship in Oregon so listed (Oregon Secretary of State 2013; Grover 2002; Nelson 1994; Delgado 1983; Stokes 1968: 322).

Despite all of these navigational aids, the mouth of the Columbia continued to be the site of numerous shipwrecks in the twentieth century. Among these incidents, the freighter *Iowa*, carrying lumber and other cargo, crossed the bar in January of 1936 to be caught in a winter cyclone with 76 mile per hour winds, smashing onto Peacock Spit. The Coast Guard cutter *Onondaga* reached the wreck but all men aboard perished, numbering thirty-four. Thus pressure mounted to modernize the capacities of the lighthouses. Later that year, a class C radio beacon was installed at Cape Disappointment lighthouse, and by 1937 the light was electrified. In 1939 the U.S. Lighthouse Service merged into the U.S. Coast Guard, which operated under the authority of the Department of the Navy. With this new status, the lighthouses served as lookout posts and signal stations throughout World War II.[119] The light at North Head was automated in 1965, and the Coast Guard planned to discontinue the Cape Disappointment light at the same time, claiming the Columbia River lightship and entrance range lights were sufficient to mark the river. Columbia River bar pilots—licensed specialists possessing more than a passing familiarity with the bar's dangers—protested the change, and the light remained in service.[120] The lighthouse at Cape Disappointment was automated in 1973 and, along with the North Head light, remains active today (Lighthouse Friends 2013; U.S. Coast Guard 2012b; Lucero and Hobbs 2009; Nelson 1994).

The Life-Saving Stations of the Lower Columbia

While the U.S. Lighthouse Service was beginning to develop aids to navigation along the coast, other agencies took responsibility for the practicalities of lifesaving, bringing other facilities and people to the mouth of the Columbia. The U.S. Revenue-Marine (eventually renamed the U.S. Revenue Cutter Service) had been established in 1790 to serve as an armed maritime law enforcement service operated under the U.S. Department of Treasury to prevent smuggling and enforce tariff laws. Beginning in the 1830s, the service was ordered to assist mariners in need, beginning the life-saving tradition for which its successor agency, the U.S. Coast Guard, would become well known. During the period when the Coast Survey of

1849-50 first determined a location for the lighthouse on Cape Disappointment, Congress was begging to provide funds for lifesaving equipment and training of the personnel who would use it, through the U.S. Revenue-Marine. This represented a significant advance from the precedent of the early 19th century, when east coast life stations had operated like volunteer fire departments, but with no one in charge, and without clear standards for training and rescue. By 1848, the U.S. Revenue-Marine began administering stations for the purpose of rescuing crew and passengers of vessels in distress, making the waters of the United States—at least those with nearby lifesaving stations—considerably safer (Noble 1997, 1989).

By the mid-1850s, the U.S. Revenue Cutter Service was becoming a force in the waters of the Pacific Northwest.[121] Astoria, Oregon received its first "revenue cutter" ship in 1856, the *Joseph Lane*, named for Oregon's first territorial governor and delegate to the U.S. Congress.[122] Until the ship was decommissioned in 1869, the *Joseph Lane* helped ships navigate the Columbia River bar, supplied lighthouses, and aided mariners in distress, but also inspected vessels for contraband. The ship was transferred temporarily to the service of the U.S. Navy in order to halt movements of Native Americans into the Puget Sound, especially repelling "Northern Indians" arriving from British Columbia and Alaska associated with the Isaac Ebey incident at what is today Ebey's Landing National Historical Reserve. Following the *Joseph Lane,* the cutter *Thomas Corwin* was stationed at Astoria from 1878 to 1890 (Nelson 1994).

The U.S. Life-Saving Service (USLSS), meanwhile, was established in 1848 as a nonmilitary division of the Department of Treasury. In the mid-19th century, the USLSS commissioned 19 life-saving stations along the West Coast from Nome, Alaska, to the Golden Gate of San Francisco Bay (Weathers 2001: 3). A lifesaving station has been associated with Cape Disappointment since November 1877, though it was originally built under the auspices of the U.S. Revenue-Marine in nearby Ilwaco. During the same period, lifesaving stations were also constructed on Willapa Bay and Neah Bay in Washington.

Prior to the development of a formal lifesaving station, rescue missions at the mouth of the Columbia depended upon volunteers, usually organized by Captain Joel W. Munson—head keeper at the Cape Disappointment Lighthouse from 1865 to 1877. When the bark *Industry* wrecked near Cape Disappointment on March 15, 1865, 17 of the 24 people on board did not survive. Captain Munson believed more people could have been rescued if a lifeboat had been available to the light-keepers at the cape. Perceiving significant limitations on the light station's ability to respond to shipwrecks and other life-saving missions, and recognizing the growing need for

such operations to support shipping and military operations, Munson became a vocal advocate for the development of lifesaving facilities. Munson raised the funds for such an operation by organizing dances in Astoria, and rebuilt a battered longboat into a lifeboat launched from the light station. Simultaneously, there were changes afoot at the federal level that would add momentum to Munson's campaign. In 1871, Congress appropriated $200,000 for the development of new life stations and the recruitment of surfmen who were to form an organization of boat crews.

Aided significantly by Munson's lobbying, a life-saving station was established at Cape Disappointment in 1877, when the Revenue Cutter Service constructed the Fort Canby life-saving station. The station was originally located on the Fort Canby army reservation. The Cape Disappointment lighthouse served, in turn, as the operation's lookout point. Stephen Davis was appointed the first keeper of the Cape Disappointment station in early 1878, but there were no apportioned funds to hire other staff. Davis attempted to raise a volunteer crew from among the soldiers at Fort Canby, but with little success. After his first effort at training, Davis wrote to his supervisor, Captain J.W. White, that their reliance on inexperienced volunteer crews was rendering the station dangerously ineffective:

"*I took the life boat out for practice with a picked crew from the enlisted men at this Post. The weather was pleasant with a moderate breeze from N.W. and smooth water. The men were without exception very awkward in the use of the oars. They would require more training than they could give time to before even ordinary oarsmen could be made out of them. They would not pull together or pay any attention to such instructions as I wished to give them. They behaved as if they did not care to learn. And I despair of even being able to make them available as a boats crew. The experiment was very unsatisfactory in every way*" (Davis 1878).

Life-saving operations continued from the Cape Disappointment station in a limited capacity due to lack of local volunteers. When wrecks did occur, success was mixed at best. Two years after organizing the life-saving station, Davis explained in a preliminary wreck report of the English bark *Dilaharee*,

"*There is no life saving Crew at this Station, and no men in the vicinity of this Station to makeup a Crew from. This Life Saving Station is on a Military Station [Fort Canby]. I applied to the Commanding Officer for leave to enroll a crew among the Soldiers and practice them in the Boats. He told me that it was against the Regulations of the service to use Enlisted men for such a purpose. Under these circumstances I am powerless to render assistance to a vessel in distress*" (Davis 1880).

Figure 9.9 – An early U.S. Life-Saving Service crew practicing their oarsmanship at the mouth of the Columbia River. Photo courtesy Oregon Historical Society.

The following station master, A.T. Harris, expanded the volunteer recruitment efforts, focusing not only on Fort Canby soldiers but on the citizens of Ilwaco and nearby communities, who were willing to brave the sometimes deadly waters of the Columbia bar to rescue fellow mariners. The number of men available and willing to volunteer began to increase, but it was still insufficient. As indicated in the wreck report of the bark *Rival*, written a year and a half later than Davis' report on the *Dilaharee*:

"*Surf boat was manned by a volunteer crew of soldiers and citizens. Strong head wind from S.W. prevented us from getting round to wreck before they had lowered their own boat. Wreck occurred when there was no regular crew [at the station], and of course no watch to give the alarm; and the vessel had been in the breakers sometime, before it was known at the station*" (Harris 1881).

By this time, however, the U.S. Life-Saving Service had become a separate bureau within the Treasury Department and was receiving a larger and more predictable stream of federal funding. The scale of shipping on the Columbia was only

increasing, and reports from the life-saving stations were receiving attention all the way to Washington D.C. Finally, in 1882, Harris was able to swear in the first paid, full time crew of the Cape Disappointment Life-Saving Service Station.

The USLSS soon activated other stations at the mouth of the Columbia. The Point Adams life-saving station at Hammond, Oregon, on the south side of the river, began operations in 1889, alongside Fort Stevens. The station was unusual for the time in that living quarters were located in a building separate from the boathouse. The Point Adams station was so badly affected by erosion in 1913-1914 that the boathouse was moved to another location. Sometime between 1905 and 1923 another boathouse was added to the station, built on piles in the Columbia River. The Point Adams life-saving crew earned the Gold Lifesaving Medal for actions taken during the rescue of the crew of the steamship *Rosecrans* in 1913. In Ilwaco in 1891, a life-saving station was built 13 miles north of Cape Disappointment. Renamed Kilpsan Beach life-saving station in 1912, it was discontinued in 1949 (U.S. Coast Guard 2012a, 2012b; Weathers 2001).

Until well into the 20th century, the life-saving stations were small, and the usual staff consisted of a keeper and a crew of no more than seven men called surfmen. Most trained to become highly proficient at the use of small boats in huge surf. As in most west coast life-saving stations, their boats included the self-bailing Jersey-style surfboat and the Dobbins self-righting lifeboat. Considered easier to handle in the Pacific surf, the surfboat measured 26 feet long and weighed 900 pounds, and was well suited to West Coast squalls. Surfboats were stored on a four-wheeled wagon that could be pulled by men or horses, and steered into the water where it was disassembled in order to launch the boat. They were manned by six men with 12- to 18-foot oars. Dobbins-type lifeboats were heavier than surfboats, and specialized deck structures at both ends made them self-righting when tumbled by large waves. By the 1910s, these boats were replaced by early gasoline-powered rescue boats that could move faster through the surf—most involving variations on these self-bailing and self-righting technologies, both essential at Columbia's turbulent river bar (Weathers 2001; Noble 1989).

All later developments of the Coast Guard (created in 1915, merging the functions of the Revenue-Marine Service and the Life-Saving Service) in the Columbia-Pacific centered on the station founded in the 1870s. During both world wars, temporary operations and facilities were established at the river's mouth, largely under the command of the Cape Disappointment station.[123] The Hammond station continued to support to the Cape Disappointment facility until 1967, when it was

decommissioned. Air Station Astoria was established at Tongue Point Naval Air Station in August 1964, and two HH-52A Seaguard helicopters were assigned to the station. Two years later, the air station was relocated to Clatsop County airport in Warrenton, and a number of new aircraft were added to the station's inventory through the early 1970s.[124] When the Hammond station closed in 1967, the U.S. Coast Guard consolidated all lifesaving activities at Station Cape Disappointment by building a new facility on the cape. Today, this facility is located just beyond the state park boundary and includes the only institution in the United States specializing in training for rough water surf rescue—the National Motor Lifeboat School. Operated by the Coast Guard since 1968, the school and station on Cape Disappointment are today part of a wider network that includes an air rescue facility in Warrenton, Oregon (Lighthouse Friends 2013; U.S. Coast Guard 2012a Lucero and Hobbs 2009; Weathers 2001; NPS 1975).[125]

The Creation of Jetties

Responsibility for a national response to McArthur's 1849-50 Coast Survey fell in part to the U.S. Army Corps of Engineers. The Corps oversaw the development of jetties and the dredging of shipping lanes. Due to their cost and the engineering expertise required to build them, the first jetties along U.S. coastlines did not appear until the 1820s—well after the initiation of lighthouse construction. The U.S. Army Corps of Engineers has administered evaluation, construction, repair, and maintenance of jetties and breakwater structures since the mid-nineteenth century, under authority granted by the General Survey Act of 1824.Throughout the 19th century, the U.S. Army Corps of Engineers, known then as the U.S. Army Engineer Department, had been called on increasingly to conduct large-scale civil engineering projects around the nation, such as improvements to shipping channels and harbors, and began to work for the first time on large projects in Pacific waters.

Based on the accounts of Wilkes, McArthur, and other surveyors reporting back to Washington D.C., the U.S. Army's "Board of Engineers for Fortifications for the Pacific Coast" recommended in an 1868 report that an annual survey be made of the mean high water shoreline around the river's mouth—in order to allow them to assess the rate and patterns of change in the shoreline. The Board recommended a comprehensive survey of lands on the Oregon side of the river from Tansy Point, continuing around Point Adams, and to a distance of one mile southward. In Washington, the survey was to focus especially on Sand Island, and would assess the position of Sand Island annually with reference to the three principal natural

navigational landmarks at the mouth—all part of the LEWI park system today—including Cape Disappointment, Chinook Point and Point Adams (Humphreys 1868).

Through these surveys and the observations of military personnel stationed at the river's mouth, federal authorities learned that the channels and shoals of the river were highly dynamic, reflecting not only the deposition of Columbia Basin sediments, but the active erosion and reconfiguration of the sand by high waves, storm events and changing currents. While these changes had always posed a significant challenge to ship traffic, the U.S. government's priorities at this point were strategic. Of particular concern to Washington D.C. was the threat posed to defensive fortifications at the river's mouth. In 1870 Capt. John A. Darling, Post Commander at Fort Stevens, wrote to the Chief of Engineers, "*The sea still continues washing away the main land from the points north west and west of the Fort…If it is your purpose to do anything to check these encroachments of the sea, I would respectfully suggest that the sooner it is done the better*" (Darling 1870). This, more than the reports of navigational hazards alone, seemed to capture the attention of the Corps of Engineers, whose mandate included the protection of military facilities. Three months after receiving Darling's message, the Chief of Engineers authorized $2,000 for repairs to the fort, involving modest revetments to the shoreline.

These changes were minor, and did little to halt the advance of erosion at Fort Stevens. The Post Commander's monthly inspection report two years later, in December 1872, sent out an alarm call to Washington D.C., indicating that erosion had not been contained, and that the winter now underway was likely to materially undermine the fort:

"The ocean during the past month has rapidly encroached upon the land of the reserve and taken away in places so much of the high land that bordered it a month ago that now any medium severe south west storm with a high tide would raise it over the banks. I estimate the gain of the ocean upon the land to have been this month about 15 yards…I do not think any steps are needed at once in regard to oceans encroachment, but it should be a matter of consideration before the coming of another winter" (Office of the Post Commander 1872).

This alert prompted some of the first concerted efforts to develop jetties at the mouth of the Columbia. Just two months after the Post Commander's warning, C. S. Steward, Sr. Level Engineer in the Office of the Board of Engineers for the Pacific Coast, recommended that the Army's engineers develop a system of jetties at the river's mouth. By Steward's description, these were to be modest jetties—similar in construction to those we know today, but on a much smaller scale:

"*a few piers or jetties of crib-work, filled with stone, placed at intervals between the point of the shore which seems for years to have remained stationary, and that where the greatest erosion has taken place, extending from the shore line beyond low water mark, might have a beneficial effect*" (Steward 1873).

In spite of Steward's proposal and apparently some basic design work to configure these early jetties, no action was taken for another two years. The commanders at Fort Stevens put out urgent calls to regional headquarters and to Washington D.C. indicating that Fort Stevens had less than a year before erosion would undermine the fort and, by extension, American military security at the mouth of the Columbia. Captain Miller, Commander at Fort Stevens, wrote to the Assistant Adjutant General of the Department of the Columbia in 1875,

"*The ocean and river have so much encroached upon the reserve the past winter, that I think it is fully time for the Engineer Department to do something to prevent further damage. I do not believe the Fort is safe from its encroachments for one whole year from this time. The river encroachment is a new thing of only the past year*" (M.P. Miller 1875).

The response, while imminent, was slow in arriving. In March 1876, nearly a year after Miller's urgent letter, Brigadier General and Chief of Engineers, Andrew A. Humphreys[126] ordered a $1,000 appropriation to re-survey the bar once again, in preparation for a significant revetment project that would protect defensive fortifications at the mouth of the river (L. Casey 1876). An appropriation of $10,000 was approved in September for a revetment of brush and heavy rock work on the river's southern banks (Elliot 1876). The Engineers also received reports that erosion threatened the north side of the river at the base of the Cape Disappointment lighthouse, though this news did not immediately prompt a response.[127]

The revetment on the south bank was initially reported successful in decreasing erosion and improving preservation of Fort Stevens' grounds along the waterline fronting the fort. Construction and surveying continued and, by the end of 1881, brush jetties extended out about 450 feet from high water mark into the mouth of the river (R.N. Holt 1881a). The brush revetment was no match for the highest tides, though, and was soon breached by the high waters and waves of late December, 1881.[128]

Concerns regarding erosion became so intense that the Army considered abandoning Fort Stevens. Yet the Fort's commanders and sympathizers were compelled to make a case for its retention.[129] As part of their case, they stressed not only the Fort's great strategic advantages, but the importance of navigation shipping safety at the river's mouth. This case, taken all the way to U.S. Congress, finally compelled the nation to act in a decisive manner. By 1882, under growing political pressure from both the military and the Northwest congressional delegation, Congress ordered the Army Engineers to embark on thorough surveys and to draw up a plan for permanent improvement of the Columbia River bar. After considering the voluminous survey data resulting from this multi-year investigation, the Board of Engineers proposed the development of a south jetty at the mouth of the Columbia. As later summarized by the Chief of Engineers, this was to be a project of ambitious scale and scope:

"*The project for this work contemplated securing and maintaining a navigable channel 30 feet deep across the bar at the mouth of the river by the construction of a high tide jetty 4 ¼ miles long the jetty to extend from the shore near Fort Stevens, across Clatsop Spit in a westerly direction, curving slightly towards the south to a point about 3 miles south of Cape Disappointment, and to be provided with four low groins or spurs on the north or channel side, two of them to be 1000 ft. long, one 600 ft. and the other 500 feet long... The project was approved 1884 and slightly modified in 1893 and the work was estimated to cost $3,710,000*" (Office of the Chief of Engineers 1899).

Congress authorized the south jetty project in July 1884, and the Secretary of War directed that the Post and Military Reservation of Fort Stevens be turned over to the Engineer Department for the purpose of facilitating construction (Drumm 1884). Assistant Engineer Gustave Hegardt, who served 14 years at the mouth of the Columbia, would be responsible for much of the detailed engineering. Work on the monumental jetty began in April 1885 and lasted no less than ten years. Construction began with the development of supporting facilities at Fort Stevens, such as construction offices, workshops, and a government wharf where stone from upriver could be loaded from ship to rail cars. The Army Engineers then constructed a narrow-gauge railway trestle (or "falsework") with double tracks into the water, and gradually extended this line as the project progressed, using a specially designed pile driver that operated from the end of the completed trestle section. Small steam locomotives and a fleet of flat-bed dump cars hauled out building materials, principally the rocks that were dumped in a growing line west-by-northwestward

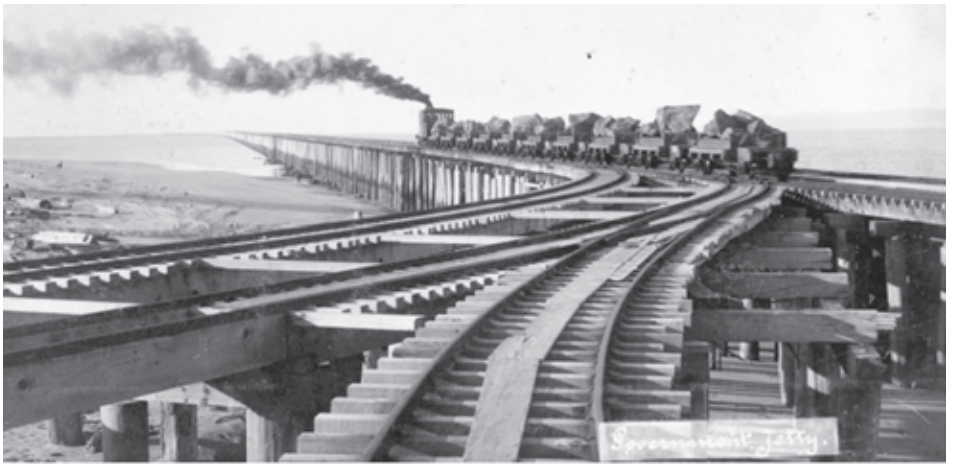


Figure 9.10 – The construction of the south jetty of the Columbia River through the late 1880s and early 1890s involved the development of a falsework of narrow-gauge railway trestles on pilings, extending into the turbulent Columbia River bar. There, huge basalt boulders were dumped over the side, where they were secured by a network of wooden pilings and fascines made of bundled brush. Photo courtesy Oregon Historical Society.

into the sea. Large basalt stones for the jetty were quarried roughly 100 miles up the Columbia and barged down to the wharf at Fort Stevens for transfer to the railway cars that carried them along the trestle and dumped them over the side. This method often left the rocks in haphazard placements and the rocks sometimes fractured, so that the ocean immediately began to pick the structure apart. Even before the jetty was completed, a good deal of effort went into repairs. Not only the trestle, but the jetty foundation itself, was prepared by driving pilings deep into the seabed. Fascines—bundles of brushwood 18 feet long and one foot in diameter—were secured on the sea floor to form a 40-foot-wide "mattress" to minimize erosion of the sea bottom on which the jetty would rest. Today's landscape still exhibits many of these structures. Not only the completed jetty, but the old rail trestle and other fragmentary infrastructure can be seen on the land, weathered by wind and sea for over a century.

By 1889, less than halfway into the initial construction, the new jetty had noticeable effects on the configuration of the river's mouth. As some had predicted, large deposits of sand began to build up around the jetty. This was vital to the security of the jetty, since the sand broke the force of waves that would otherwise damage the structure. Indeed, the Army Engineers augmented the jetty to retain such deposits, heightening portions of the jetty and adding four perpendicular rock groins on its

north side. The south jetty's extension intensified the river's scour of the main channel, so that the depth of that channel, where it transected the river's bar, increased from 20 to 31 feet in depth in the final years of construction. When completed in 1895, the south jetty was 90 feet wide across its base, 30 feet high, and projected about ten feet above mean low water (Malcolm 2002; Reckendorf, et al. 1985: 263).

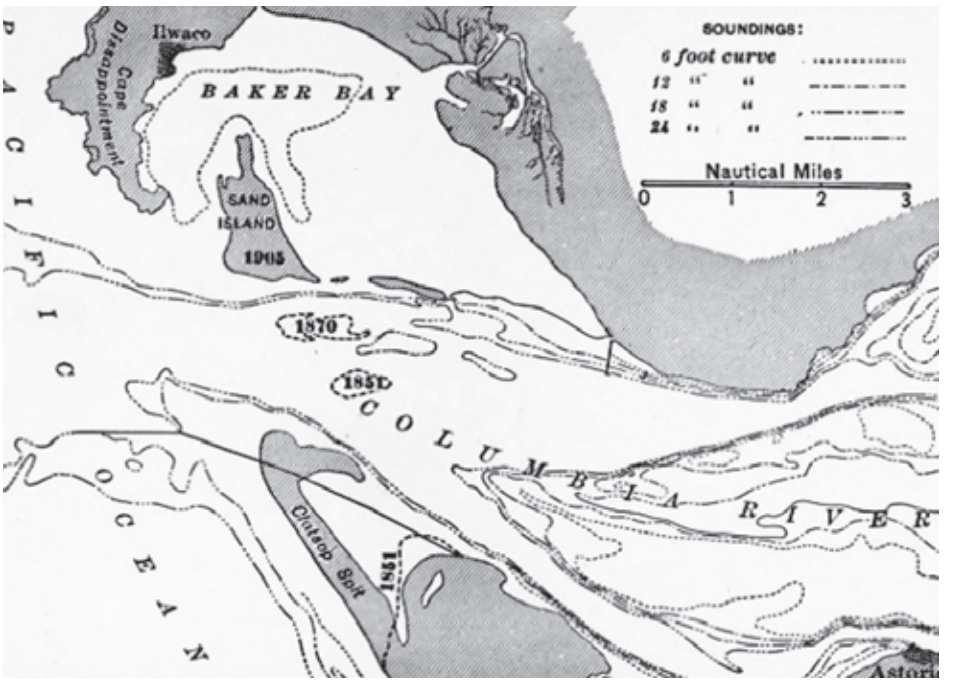


Figure 9.11 – A map of early changes in the configuration of the shoreline caused by jetty construction between 1851 and 1905. During this period, Clatsop Spit formed, significantly extending the northwestern reach of Point Adams, while Sand Island migrated to the far side of the Columbia River channel. Image CGS00114, National Oceanic and Atmospheric Administration.

The project was initially hailed as a success. The bar and channel, while not controlled, were at least more predictable, and the value of shipping entering the river roughly doubled in the decade from the start to finish of the project. However, the Columbia's mouth had not stabilized to the degree anticipated, and annual surveys beginning in 1897 showed a decrease in channel depth with each passing year. The Chief of Engineer's report of operations for November 1899 observed "*The survey of the bar having been completed, a report as to the desirability of continuing this improvement, with a view of obtaining a channel of 40 feet in depth was submitted under date of November 6, 1899*" (Office of the Chief of Engineers 1899). In March of 1903

the Board of Engineers adopted a new plan, designed to form a secure shipping channel some 40 feet in depth by extending the south jetty about two and a half miles further into the sea. The plan also provided for dredging for temporary relief, "*and the construction of a north jetty should this be necessary at some future time.*" The estimated cost, including the north jetty and dredging, was $3,715,000 (Office of the Chief of Engineers 1903a).

For the dredging work, the War Department transferred the U.S. transport *Grant* to the Engineer Department in 1903, fitting it in San Francisco for use as a dredge (Office of the Chief of Engineers 1903b). The ship's name was changed to the *Chinook*.[130] In addition to extending the south jetty and dredging the channel, the Corps developed a program to "reclaim" the sandspits at the mouth of the Columbia. Control of the blowing and mobile sand was of particular concern, prompting Army Engineers to reach out to the Department of Agriculture for assistance. In a 1902 letter to the Secretary of Agriculture, Captain W.C. Langfitt wrote,

"*For experiment on Clatsop Spit, it would seem that Fort Stevens would be the natural headquarters. As I have a force at work there continuously the necessary labor can be furnished by this office. If the seeds or sprouts of the grasses are furnished, with full directions for planting, I could have the work done without further aid…I noticed in the daily papers that a Mr. A.B. Leckenby had been conducting experiments at Clatsop Beach. I wrote Mr. Leckenby at Eastern Oregon Experiment Station, Union, Oregon, asking results and name of grass used. He replied that his experiments were successful with the grass Poa Macrantha, and that he would be glad to help this office so far as he might be able to do so*" (Langfitt 1902).

In 1903, under the direction of Professor A.V. Stubenrauch, Assistant Horticulturalist at University of California, a nursery for sand binding grasses was created on the Fort Stevens military reservation. In part of its initial operations,100 sacks of sand-binding live grasses, roots of the European beach grass (*Ammophila arenaria*), and one sack of seed were planted on the Fort Stevens reservation nursery, where the drifting sands would not cover them. In addition to this, a number of roots were planted on Clatsop Spit. The intention was to grow large numbers of sand-bearing plants and transplant them to the spits and in the vicinity of gun emplacements then under construction (Office of the Chief of Engineers 1903b). These efforts were guided significantly by prior experiments by A.B. Leckenby, as noted above, who

Figure 9.12 – The construction of falsework trestles on the north jetty, adjacent to the base of Cape Disappointment, in the 1910s. Photo courtesy Washington State Historical Society.

had been recruited by the Oregon Railroad and Navigation Company to help stabilize dune areas to facilitate extension of rail lines to Seaside and Gearhart a few years before the Fort Stevens effort.[131] The Soil Conservation Service would expand considerably on these efforts at Fort Stevens as part of a Civilian Conservation Corps project three decades later.

Extension of the south jetty continued, using the same rail grade and roughly the same construction methods as the original section. The south jetty extension was completed in 1913, extending the jetty to an impressive, and originally unanticipated, total of six and half miles in length. The cost was also of unanticipated scale: the south jetty and dredging had achieved a channel depth through the river's mouth of 37 feet depth, to the tune of approximately eight million dollars. The south jetty alone had cost as much as the Board of Engineers originally estimated for the construction of both jetties (Roesslar 1905).

Figure 9.13 – The rock for the Columbia River jetties was quarried roughly 100 river miles upstream from the construction site and carried on barges to wharves on either side of the river. Here, rock is removed by cranes at the north jetty wharf on Bakers Bay, to be loaded onto the narrow gauge railway that passed through Fort Canby to the north jetty construction site. Photo courtesy Washington State Historical Society.

On the north side of the Columbia, there was growing interest in revetments and other improvements. During extension of the south jetty in 1913, the channel traversing Bakers Bay and providing ship access to Ilwaco, Washington, was dredged to a depth of 11 feet. Ilwaco businessmen began lobbying for further improvements that they believed would increase shipping through their small port. In 1916 the Corps of Engineers made the case that since 1913 shipping had not increased as a result of dredging, further improvements could not be justified. The Ilwaco Commercial Club successfully petitioned for a hearing before the House of Representatives in 1917, but its request for additional improvements was denied (U.S. Congress 1917). Yet the Army Engineers determined to construct a north jetty along the lines of their 1903 plan. Anchoring the new jetty near the southwestern base of Cape Disappointment, the Army Engineers extended the north jetty southwestward into the river's mouth between 1914 and 1917. For a cost of roughly

five million dollars, the privately-owned Daniel Kern's Columbia Contract Company built a stone jetty two and a half miles into the river's mouth. The basic construction techniques were the same as had been used on the south jetty, including a piling foundation and the construction of a temporary narrow-gauge rail line on pilings into the water. Construction offices and workshops were added along the rails, while a government wharf was constructed on the waterfront of Bakers Bay, where stone could be loaded from barges to rail cars.

Hydrographic surveys in 1918 confirmed a minimum depth of 40 feet had been attained across the full width of the channel entrance, so that only severe conditions created the "*breakers extending from Cape Disappointment to Point Adams, in one unbroken line"* as seen by Wilkes some 77 years earlier. Sand began to accumulate rapidly on the western face of Cape Disappointment, as it had along the south jetty. Here, this process soon connected the land to Peacock Spit with level sand deposits and turning McKenzie Head into a hill instead of a rocky headland—developing broad sandy beaches south and also north of North Head. Together, these processes produced the entire level, sandy area now occupied by camping facilities and used as a recreational beach in the modern Cape Disappointment State Park. Indeed, sand redirected by the change in channel configuration was deposited along the coast on both sides of the mouth, augmenting the width of the ocean beach for several miles north and south of the river (Columbia River Channel Coalition 2012a; Carlson, et al. 1991; Dicken et al. 1961; Elliott 1917).

In 1938-39, an additional half-mile long jetty, dubbed "Jetty A," was constructed just inland of the mouth on the Washington side, extending from the southeast base of Cape Disappointment south-southeastward into the river's mouth. This final major jetty project helped to stabilize the river channels, especially the narrow channel extending to Fort Canby and Ilwaco, while also providing those locations with modest protection from surf during storm conditions. Yet the geographical outcomes of these structural changes were complex. For example, Sand Island—observed to be in motion by the Coast Survey in 1850—settled roughly a half mile offshore from Cape Disappointment by 1917, protected there by the new jetties' configuration, though the island had been located formerly on the south side of the deep water channel and connected at very low water to Point Adams, near Fort Stevens. For this reason Sand Island remains a political part of the State of Oregon, though it has gradually come to be connected to Cape Disappointment (Columbia River Channel Coalition 2012a; Elliott 1917: 233).

Figure 9.14 – An aerial photograph of Cape Disappointment, showing the sand that rapidly accumulated on the northwest side of the north jetty after its completion in 1917. The new beach became a centerpiece of the state park, occupied in part by campsites and popular for beachcombing. Photo courtesy Washington State Historical Society.

When the north and south jetties were completed in the early 20th century, they contained nine million tons of rock and were at the time the largest jetties on earth. They made it possible for the biggest ships then operating in the Pacific to cross the Columbia bar at all stages of the tide and in all but the worst weather. They have required frequent maintenance to maintain their structural integrity (which may have reduced their architectural integrity as "historical structures.")[132] As the Northwestern economy and the size of ships have grown, the channel across the Columbia bar has been dredged repeatedly, making the channel deeper. The Columbia-Pacific's larger ships—those that now transport bulk cargo and containers containing electronics, cars, clothing, and various other consumer goods—have drafts of up to 45 feet. In recent times, the Corps of Engineers and six Oregon and Washington ports collaborated on the Columbia River Channel Improvements Project to deepen the navigation channel between the ocean and Portland and Vancouver, increasing its depth from 40 to 43 feet. Today the Columbia River bars main channel is vast and placid by the standards of early mariners — approximately three miles wide and six miles long, with an entrance channel some 2,640 feet wide and some 55 feet deep. While not failsafe, these channel

improvements, plus the advent of modern boats, navigational capacities, and weather prediction facilities, have in recent times made accidents comparatively rare (Columbia River Channel Coalition 2012b; Columbia River Bar Pilots 2010).[133]

Clearly, the lighthouses, life-saving stations, and other navigational supports at the Columbia River's mouth were critical in the history and development not only of the Columbia-Pacific region, but of the Portland metropolitan area and the larger Columbia Basin. Along with dredging and the construction of two jetties, these developments allowed even the largest ships operating in the Pacific to cross the river bar, even in poor weather and at every tidal stage. Lighthouses and lightships, evocative and often romanticized as part of the coast's larger history, have been particularly central to historic preservation efforts. Both lighthouses in the Cape Disappointment Historic District are still among the 500 active (though automated) lights along U.S. coastlines. Few places can also supply a more dramatic view of ships crossing a river bar than can the Cape Disappointment Lighthouse, which is accessible by means of a trail following an old road to the light. Although not in the historic district, the Coast Guard's station on the cape still holds a preeminent role in maritime lifesaving efforts, mainly because of its position alongside a perilous shipping channel of regional significance and national reputation.[134]

10 An Arcadian Triangle of Fire

Landscapes of Militarization the Lower Columbia

Though the Columbia-Pacific region has not, at the time of this writing, experienced a war on its soil, the region's coastlines have been shaped by military concerns. Like many west coast ports, the Columbia's mouth holds the enviable position of possessing fine forts dating from the Civil War through World War II, but almost never having used them in battle. Almost the entirety of Cape Disappointment and Fort Columbia State Parks in Washington and Fort Stevens State Park in Oregon were occupied for military purposes. They have a military history of such depth and complexity that it can only be summarized here. Fortuitously, the former forts are the subject of such a characteristically rich written military record, and possess their own skilled interpreters and museums, that readers curious about this history can dig much deeper into the subject independent of this document.

Perched on three coastal landmarks, these forts experienced three bursts of fortification, with long and quiet intervals between. The forts were also stationed during four major wars: the Civil War, Spanish-American War, World War I and World War II. The first three had Pacific theaters, sometimes overlooked in conventional and abbreviated histories. While generally small, these conflicts contributed to a growing perception of the Pacific as a place of strategic complexity and vulnerability. Troops guarded and mined the harbors, making a very dangerous river bar even more dangerous for ships that might threaten American interests. There they presented a defensive "triangle of fire"—similar to what was developed on the entrance to Puget Sound at Forts Casey, Worden and Flagler, as well as at American ports at San Francisco, San Diego, and other sites around the nation in the 19th and early 20th centuries. The Army trained soldiers during these times as well, in response to broader national military needs. The militarization of the Columbia-Pacific region came to a dramatic finale in World War II, when the Pacific theater provided the first credible threat to coastal communities in modern times, prompting a redoubling of military infrastructure and a mobilization of even the coast's civilian

residents to aid in the country's defense. Declared surplus almost immediately upon that war's conclusion, the forts now sit idle, serving as prominent objects of historical interpretation and curiosity in three state parks.

Ironically, the most dramatic battles in the historical record tied to these military lands arguably predate acquisition by the United States. As noted elsewhere in this document, a gunship of the Hudson's Bay Company leveled the main Clatsop village situated in the middle of what became Fort Stevens. This occurred in 1829, in retaliation for the false rumors that the Clatsop had killed survivors of the *William & Ann*, a British ship wrecked on the beaches nearby. Fortifications of the site also have deeper precedents. Perhaps as an outcome of the HBC bombardment, the Clatsop people built their own defensive palisade around the village, "*made of thick planks and joists, about fifteen feet in length, set with one end in the ground*" as it was described by Wilkes in 1841 (Wilkes 1845 [4]: 322–23).

As a young nation borne of military conflict with the great naval superpower of Britain, the United States began to fortify its coastlines early in its history, beginning as soon as 1794. Each part of the nation placed in national control was promptly fortified, and the Northwest was no exception. The defensive posture of the United States was quite tentative, with the Oregon Treaty having resolved the question of international boundaries with Canada only five and a half years before, and with the British Hudson's Bay Company still moving its operations north of that new border. In this context, President Millard Fillmore approved a proposal by his Secretary of War, Charles M. Conrad, and a "joint committee for the examination of the Pacific coast" on February 26th of 1852, calling for the development of military forts at the mouth of the Columbia River. They were to include "*Cape Disappointment, at the northern side of the mouth of the Columbia River, Oregon, to include all the land lying within one and a half miles of the southern point of the cape [and] Point Adams, at the southern side of the mouth of the Columbia River, to include all the land lying within one and a half miles of the northernmost part of the point*" (Conrad 1852).[135]

At the time of Fillmore's order, only seven years had passed since British spies, Warre and Vavasour, proposed using Point Adams, Cape Disappointment and Tongue Point as fortified strongholds in a possible war to expel the Americans and defend the interests of Britain and its Hudson's Bay Company. The boundary remained tense. Boundary commissions continued to meet through the late 1850s to negotiate the configuration of the international border through the waters of Washington and British Columbia. Amidst all this, the "Pig War" erupted in the San Juan Islands of Washington in 1859, resulting in a bloodless standoff between American and British

troops over claims to those islands, still commemorated today at San Juan Island National Historical Park. The continued presence of British military vessels in the harbor at Victoria also gave pause to the fledgling American settlements on the Columbia, not to mention the U.S. military commanders stationed at what had recently been the British stronghold of Fort Vancouver. Observing the unsteady situation in the Puget Sound region, Oregon Department commander Colonel George Wright sent out an alert to Lt. General Winfield Scott, who had helped broker a peaceful outcome to the Pig War and was tracking the Northwest's international situation with much interest:

"*Our whole littoral frontier is without a gun for its defense…our main artery, the great Columbia river, navigable for steamships one hundred and fifty miles from its mouth, with many thriving towns on its banks, the military post of Fort Vancouver, the arsenal, and the beautiful city of Portland, at the head of steamship navigation, on the Willamette, all are at the mercy of a single hostile steamer. This state of things demands the immediate and serious attention of the government*" (in U.S. Secretary of War 1860; 428–29).

The area's remoteness, however, continued to stall appropriations. Despite President Millard Filmore's 1852 order, ten years elapsed before Congress approved a fortification bill in 1862, setting aside an impressive $100,000 to be put toward defenses at the mouth of the Columbia River. The Civil War had intensified their interests in Northwestern defense in the way that a few straggling British loyalists could not. The British, whose navy still plied the Pacific from Victoria and other west coast ports, maintained a strained diplomatic relationship with the United States and significant financial interests in the plantation economies of the American South. British intervention on the side of the Confederacy was seen as a legitimate threat.

Furthermore, the wartime allegiances of the Northwest were known to be ambiguous, with so many settlers arriving from both Confederate and Union States to this distant and insular outpost. And, as a largely undefended Union state, Oregon was deemed of strategic importance in part due to the recent discovery of gold in the southern and interior parts of Oregon, as well as Idaho, and other parts of the West. Accordingly, there was growing concern about Confederate privateers, who were beginning to raid the commercial ships of Union supporters to win cargoes and funds to support the South's war effort—a sort of wartime piracy with a long and venerable history within European military tradition. There were widely publicized (and perhaps exaggerated) examples of Confederate efforts to secure gold and silver

leaving the California coast in the course of raids on west coast ships. Indeed, the Union newspapers of the time spread word of a plot by Confederate sympathizers to hijack the *Shubrick*—reported to have been the first steamship to travel up the Lewis and Clark River in Oregon—that was foiled when written plans of the attack were captured by the North. San Francisco, the strategic heart of the gold country, set to fortifying its own harbor (Ironically, Confederate President Jefferson Davis had been a rare voice of support for the fortification of the Columbia River mouth in the 1850s, prior to departing from his role as United States Secretary of War under President Franklin Pierce.)[136] Meanwhile, the mouth of the Columbia remained all but undefended with the Americans' small military presence concentrated upriver, strategically oriented toward the Indian wars that rocked the Northwestern interior rather than the international threats of the coast. The prospect of Confederate collaboration with the British, who maintained a formidable naval presence on the Northwest coast of North America, was simply too much for American military commanders, or Congress, to bear (McArthur 2012; Winks 1999: 162-63; Gillette 1900a, n.d.).

With the 1862 congressional appropriation, the Army Engineers were promptly dispatched to begin plans for fortifying the Columbia River mouth. Their decision regarding fort location was not an especially difficult one. When considering the opportunities for the development of future defensive structures through the first half of the 19th century, both American and British officials identified Point Adams and Cape Disappointment as likely places for such facilities. In fact, reviewing the historical record of the area, historian James Ronda (2001: 111) concluded "*Virtually every explorer, traveler, and military observer who visited the mouth of the Columbia noted the strategic importance of Point Adams and Cape Disappointment for the defense of the Western United States*." Engineers with the U.S. Corps of Topographical Engineers ultimately selected three sites for the new fortifications at the river's mouth: Cape Disappointment and Chinook Point in Washington, and Point Adams on the Oregon side.

To begin, fort construction was planned for both sides of the river, in part because of the limited range of artillery at the time. Construction began by 1863, with Captain George Elliott overseeing construction of the "Fort at Cape Disappointment" (later renamed Fort Canby) and the "Fort at Point Adams" (later renamed Fort Stevens). The plans of Elliott and the Army Engineers reflected the military planning fundamentals of the time. During the Civil War, when the Columbia-Pacific was being militarized for the first time, fort design was evolving rapidly, reflecting a rapid pace of change in the nation's coastal defense strategy. Tall masonry

structures with tower-mounted guns became obsolete with the rising caliber and accuracy of gunboat weaponry, including the accurate and powerful rifled guns, so that forts were replaced by heavy earthworks with gun emplacements. Earthen forts proved to be more resistant to canon fire than their masonry predecessors, and were easier to build and repair. Most of the earthwork forts of the mid-19th century were built hastily and inexpensively during the Civil War period (but would be virtually abandoned by the mid-1880s when they were falling into disrepair and were themselves made obsolete by improved warship technologies). The two sites initially chosen to guard the Columbia River's entrance (Fort Canby and Fort Stevens) reflected the haste in which fortifications could be erected during the Civil War period, and were soon replaced with more elaborate and modern fortifications (Hansen 1997).

Receiving from his superiors the approval to proceed, Elliott stationed himself on Cape Disappointment to oversee development of the fort on the southern tip of the cape, on lands reserved for military status that encompassed the recently completed Cape Disappointment Lighthouse. Considered to be the most important of the three sites to fortify, with its commanding position above the river's mouth, Cape Disappointment was the first of the forts to be developed. Through 1863-64, Army Engineers raised earthworks on the ridge tops of the Cape Disappointment headland, forming three distinct, if small, gun batteries: the "Tower" (or Right), Center, and Left Batteries. Initially thought to be temporary, these earthworks persisted for many years to come. Within the protection of these earthworks, they installed Rodman cannons behind parapets. Yet finding that the Rodman cannons were difficult to fire accurately at the downward angle required from the cape, the Army experimented with alternatives, ultimately adding Parrott smoothbore cannons to the artillery array. Wood-framed garrison buildings, including enlisted and officers' quarters, were constructed below, fronting the water at Bakers Bay and nearby Lake O'Neil. Finally, Company A of the 9th U.S. infantry under the command of Captain William Jordan, formerly based at Fort Vancouver, was dispatched to occupy both forts. Cape Disappointment was the first fort activated, with Jordan and his men commencing operations in April of 1866 (Hanpf 1980; Hussey 1957).[137]

At Fort Stevens, construction on earthwork fortifications was also underway by 1863, but was somewhat lower in priority for the Engineers, who were competing for labor with the lure of the gold fields (indeed, the gold fields, plus the tedium of occupying a fort so far from the front, proved an obstacle to retaining military recruits for years

Figure 10.1 – The earliest gun installations at the Fort at Cape Disappointment, as they appeared in 1864 – the gun mounts pointing downward over a low earthwork, reflecting the cliff-top position of the fortifications. The Rodman cannons mounted in 1864 were augmented in 1866 with Parrott smoothbore cannons on their southeast side, due to the difficulty of firing at this odd angle with the former weapons. Firing of the cannons was kept to a minimum, because of the effects of the blast on sensitive lighthouse equipment, windows, and lenses. From War Department, Fourth Army and Western Defense Command; Coast Defenses of the Columbia. (03/17/1941 - 1946) – National Archives and Records Administration.

to come). First, Elliot found he had to clear the land of its prior occupants. In occupying both sites, but especially Fort Stevens, the military was confronted with the unusual appeal and strategic importance of the locations. By the time of construction, a number of officially sanctioned settlers, and a few "squatters", occupied lands on both fort sites. On Cape Disappointment were Elijah White and James Holman—introduced earlier in this document, though the fort ultimately included portions of Donation Land Claims filed by James Cameron and E.G. Loomis as well. All lost their lands in whole or in part. Across the river, Frederick G. Schwatka was still processing his family's Donation Land Claim to much of Point Adams as military officers asked him to leave. Adjacent Donation Land Claim owners B.C. Kindred and W.W. Raymond also lost large tracts of land.[138] Some portion of

Figure 10.2 – Fort Canby, ca. 1890s. Like all three forts, Fort Canby housed a number of wood-framed garrison structures sitting a short distance from the gun batteries. At Fort Canby, these buildings occupied the lowlands along Bakers Bay and Lake O'Neil. Photo courtesy Washington State Historical Society.

these settlers—including Schwatka and Holman—would later seek financial compensation from the United States government for their losses, but compensation came late when it came at all (Penner 1998; U.S. Senate 1878, 1877).

Yet this reoccupation had even more disruptive effects. While early non-Native settlement was ephemeral, these forts displaced sizeable Native communities from their traditional lands. By the time Elliott initiated fort construction, there were still perhaps 160 permanent residents of the village at Point Adams, though the population swelled to many times that during social events, trade, and peak salmon fishing in the Columbia (Frost 1934). Decades later, Native elders from adjacent tribes recalled that the Point Adams village continued to bustle until the moment fort construction began: "*[they] used to go there and have a big time and all go but 'the fort got that*!'" (Harrington n.d.: 386). Though the Clatsop people had been promised the lands of Cape Adams in their treaty over a decade earlier, the treaty had not been ratified and was superseded by (and perhaps because of) Fillmore's order. Elliott pressured the Clatsops of the Point to abandon their ancient village site. After some initial resistance, the Clatsops living there —now under the leadership of Coboway's nephew, Chief Tostom—relented, agreeing to move to an alternative location some

distance up the Skipanon River drainage. Elliott had many words of praise for Tostom and the Clatsops, who did not openly resist the development of the fort, which was built almost directly atop their former village and occupying traditional gathering sites and burial grounds. At the conclusion of their construction of Fort Stevens, Elliott wrote an open letter of endorsement of Tostom for his peaceful departure from the site:

"[Tostom,] chief of the Clatsop Indians has lived for many years at Point Adams, and his ancestors, his children and many of his tribe are buried here. He has an excellent reputation at the Mouth of the Columbia and while constructing the works here he has given me no trouble and has been entirely quiet and honorable" (Elliott 1867).

Tostom and his people continued to live on the periphery of the fort, their numbers in the Warrenton area shrinking with time as the fort continued to grow. Still, the forts would always be of interest to the tribes and to the other people who crowded so near the rivers' mouth. In this light, one can see that, through their entire history of operations, the forts competed for space and with abutting uses. For example, military personnel were forced to maneuver around lighthouses with fragile instrumentation and glass lenses that did not respond well to cannon fire, were pulled inadvertently into shipwreck rescues, and were partially isolated from the sea by the extension of jetties and other navigational aids.

The lands cleared of their prior occupants, Elliott was able to proceed with the development of the fort. It featured a single triangle-shaped Vauban earthwork, largely flat and featureless on its interior, designed to give protection to troops and artillery under siege and to provide clear lines of fire along the exterior walls in the event of a ground assault. The entire earthwork was encircled by a moat, which could be crossed by drawbridge to the "sallyport" entrance in the earthwork's exterior wall. Stone walkways linked gun emplacements inside the structure, while also leading to wooden garrison buildings outside the fortifications. Though Fort Stevens was not yet armed with cannons by November of 1864, the earthworks were in place. At that time, General Benjamin Alvord, District of Oregon Commander, directed Captain Jordan at Cape Disappointment to dispatch an officer and ten men to the new fort to guard against a possible escalation of Confederate military efforts "*if at the ensuing election Mr. Lincoln is reelected*" (quoted in Hanft 1964: 345). Construction continued until 1865, even as the fort was occupied. At the time, some 29 platforms were ready to mount artillery around the fort's perimeter. Rodman cannons and 200-pounder Parrott "rifles" were installed at these mounts on the

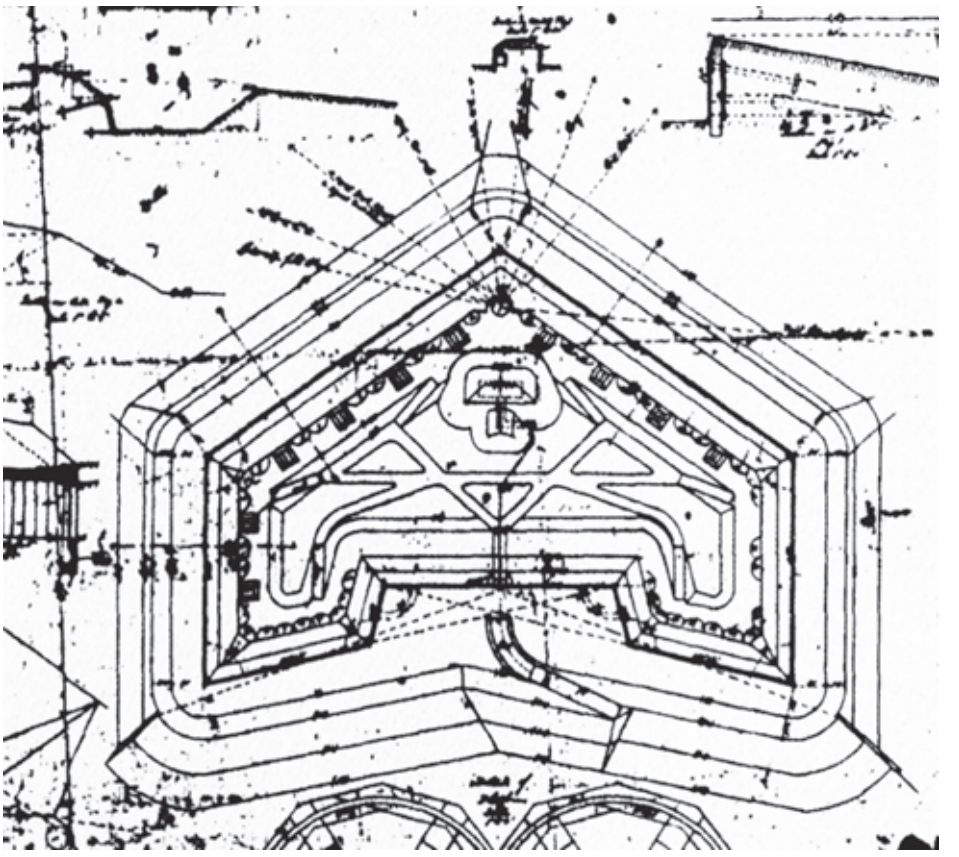


Figure 10.3 – A portion of the original 1860s plans for the Fort Stevens earthwork. From War Department, Fourth Army and Western Defense Command, Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

earthwork walls, and munitions structures and other buildings were added beside these emplacements. A portent of things to come, a number of buildings at the fort—a residential building, a stable, a blacksmith shop and storage space—were retained on site for the future use of Army engineers (Hansen 1997; Hanft 1980, 1964). As later described by Julia Gilliss, wife of Captain James Gilliss, it was "*a beautiful little earthwork bristling with guns and near as a model, the gravel walks as precise and the grass as green as if they knew they were supposed to do their best*" (Gilliss 1866). The fort was christened in honor of Isaac Ingalls Stevens, former Washington Territorial Governor and Congressman who had been killed in the battle of Chantilly in September of 1862. He had negotiated many of the treaties with tribes in what became Washington State, including treaties that shaped the future status of the Chinook and others tribes with ties to the Columbia-Pacific region (Hazard 1952).

Figure 10.4 – The "Sallyport" entrance into Fort Stevens' Civil War-era earthworks. Image courtesy Oregon Historical Society.

In spite of considerable national dread regarding the possibility of a "Pacific front" emerging in the Civil War, a Pacific theater never fully developed. What did materialize were a few, largely abortive Confederate efforts to raid Union commercial craft,and no part of that intrigue found its way to the Columbia-Pacific region. Since no foreign powers posed a credible threat to the region at the conclusion of the Civil War period, Fort Stevens and the Fort at Cape Disappointment (like others erected for coastal defense by the American military) received no further upgrades to armaments for the next two decades or more (Hansen 1997: 7-8). Instead, periodic appropriations were paid to modestly expand support facilities at both forts that had not been included in the hasty construction of either facility. With the advent of heavily armored warships and more powerful weapons of the 1870s, earthen forts of the previous decade no longer served as deterrents, and the forts at Cape Disappointment and Point Adams were no exception. Within a decade of the Civil War's conclusion, they could have been passed easily, with the cities beyond them being vulnerable to attack (Berhow 1999).

While neither installation could fend off the most modern of contemporary sea power, they presented an attractive appearance and a modest military deterrent. As noted elsewhere in this document, they were of some use to ships in distress, serving as lookouts and the venue for mobilizing ocean rescue efforts, especially in the years before the establishment of a lifesaving station at Cape Disappointment in 1877. It was also during this period that the name "Fort Canby" was applied to the fort at Cape Disappointment, through an order from Army command at the Department of the Columbia in Vancouver. This came as a tribute to the only American general killed in the various nineteenth century Indian conflicts, E.R.S. Canby, who died in the Modoc War on April 11, 1873, an event still commemorated at Lava Beds National Monument on the California side of its border with Oregon.[139]

The growing obsolescence of these forts was compounded by other, natural forces. The harbor defenses, Fort Stevens in particular, occupied a uniquely changing environment, where shifting sands would threaten to undermine military forts, only to accumulate in a way that certain gun batteries were partially landlocked and in need of replacement. As noted earlier, Fort Stevens' commanders reported concerns as early as 1870 that the fort was undermined by erosion of Point Adams. By 1875, there were warnings that the entire structure was about to be undermined by the erosion, prompting construction of a small jetty. The jetty failed and by the beginning of the 1880s, some in the military hierarchy considered decommissioning the fort. Congress responded by approving the survey and development of the first jetty on the Columbia.

Between 1884 and 1898, with no military actions anticipated in the region, the Army Corps of Engineers effectively took over operations at Fort Stevens and used the fort and its facilities as a base for building the south jetty and making other improvements to the Columbia River channel, both to protect the fort and to aid the safe passage of ships across the Columbia River bar. Even when the fort was reactivated for military use in 1898, a Chief Engineer's residence was constructed on the fort site, somewhat east of the Civil war fortifications, allowing continued operations of engineering efforts in spite of military reoccupation of the facility.

Other environmental challenges also arose. Blowing sand and salt spray quickly corroded facilities, expediting their obsolescence (In today's parks, signs warn visitors to steer clear of certain parts of the forts, termed "ruins," for safety's sake, reflecting the advanced state of decay that has taken hold of the old forts.) By the time the fort was reoccupied for military use, sand had accreted so much to the west along the new jetty that Fort Stevens no longer possessed a commanding view—or firing range—into the Pacific entrance of the bar. It sat increasingly landlocked from open waters.[140] While the probability of enemy fire was slim in this period, Fort Stevens sat at a decided strategic disadvantage. Lying beyond the range of artillery at Fort Stevens, enemy warships that ventured into the mouth of the Columbia could have put understaffed Fort Canby out of action without much difficulty or risk (Berhow 1999; Hansen 1997; Hussey 1957).

The Endicott Program and Redevelopment of the Columbia Harbor Defenses

Reconstruction after the Civil War had cast such a shadow over the appropriations process in Congress that it took 20 years after Appomattox for a President to appoint a board to evaluate proposals for new defenses. As Civil War battlements began falling into disrepair across the nation, however, President Grover Cleveland appointed his Secretary of War, William C. Endicott, to chair a board composed of military and civilian representatives popularly known as the "Endicott Program." Reflecting the growing international strength and ambitions of the nation, this new federal initiative sought to upgrade coastal forts. It sought to provide the United States with the most advanced coastal defenses in the world (and to improve the American Navy's offensive capabilities). The Endicott board's report of 1886 recommended a $127 million construction program that would take more than two decades to implement. [141]

Of the 27 harbors proposed for refortification in their report, only three West coast ports were included: the three forts at the entrance of the Columbia. However, the Columbia forts placed eighteenth among national priorities for proposed harbor defense systems. In the board's estimation, the region did not warrant higher prioritization as it was simply too remote, not only from the population centers of the nation but from anticipated theaters of military action in Europe and beyond. The Endicott list was used to prioritize federal military expenditures, leaving the lower Columbia waiting for funding that arrived more slowly and in smaller quantities than some West coast commanders would hope or anticipate. In the case of the Columbia River harbor defense, Army planners determined that Fort Stevens would become the central facility and headquarters of the new defenses, to be reinforced by Fort Canby on Cape Disappointment and a new post on Chinook Point. In spite of its challenges, Fort Stevens benefitted from its relatively large and level grounds, as well as an imminent direct rail link to the transcontinental railroads, which neither of the other posts possessed.[142] While the plans for the Columbia-Pacific defenses were modest by national standards, they dwarfed anything considered previously on the coast, and revolutionized the configuration of all lower Columbia forts. Plans included a mix of multiple batteries with mounted guns on "disappearing" carriages, a system of harbor mines that could be fired electronically by cables, and an elaborate complex of supporting facilities on either side of the river (Hansen 1997).

While the vision of the Endicott plan was ambitious, in practice its implementation was slow, proceeding down the original list in order of national priority. Lodged in eighteenth place, Fort Stevens' fortifications did not begin until August 1896, with construction beginning at Chinook Point in March 1897. And not until 1904 did construction start at Fort Canby. The work, which prioritized Fort Stevens, but also resulted in the first military structures at Fort Columbia, began under the direction of Captain Walter L. Fisk. Fisk worked from plans drawn by the Army Board of Engineers, but with some modifications made in response to local conditions. The cost of arming all three sites during the phase of construction approached 3 million dollars (Hansen 1997; Hanft 1980, 1964).

While proposals for Columbia River fort redevelopment and redeployment had been on the books for years, international events added pressures to militarize the coast. While the "close" of America's Western frontier in 1890 brought some consolidation and reduction in the 65 existing military posts, especially in the nation's interior, the Army's growth less than a decade later focused especially on improvements in coastal defense. National defense was increasingly conceived of in global terms. If

the coasts were drawing more attention, the Pacific was growing in its strategic importance in the run-up to the 1898 Spanish-American War. In this conflict, which included a Pacific front, the United States saw military action in Cuba and Puerto Rico. Moreover, by 1898, the U.S. was publicly and actively involved in the revolutionary wars of the Philippines, seeking to aid insurrections against (and to ultimately supplant) the Spanish colonial government. Conflicts with Spanish, but also German, naval forces in the Pacific islands culminated in naval battles in Manila, drawing the United States into the Philippine-American War through 1902, and beginning almost a half century of American occupation of the Philippine island chain. To add to the complexity of America's security posture in the Pacific, gold seekers were now rushing into the Klondike gold fields, placing the United States at odds with Britain over the matter of boundary lines between British Columbia and Alaska. This struggle continued through the late 1890s. The U.S. Army grew from roughly 25,000 to an average of 65,000 over the course of the Spanish-American War, a number that held steady until the first rumblings of World War I. In part due to these events, and in part due to the Endicott refortification of the coast, Fort Stevens was reactivated in 1898. Active-duty military forces supplanting some portion of the engineering staff that had maintained the base since the mid-1880s.

Construction at the Columbia River forts came from standardized plans developed and deployed around the nation at a time when the Army mobilized for the Spanish-American War. Key to the new forts was the "disappearing gun carriage," an innovation developed by Army officers in 1894. This new technology formed the crux of the American seacoast defense system until World War I. Instead of being mounted atop earthworks, guns on this type were mounted on a concrete foundation, nestled into a protective contour of earth, so that the crews servicing the weapon would remain hidden from the fire of enemy ships. A two-story concrete wall was built into this protective contour, so that guns could be loaded in safety and then raised to fire above the wall through the use of hydraulics, a counterweight and long levers. The upper levels of these forts held gun carriages behind a protective wall, with the lower story having space for ammunition magazines and other supporting facilities. Extended levers holding the cannon could raise the gun to fire above the wall. When fired, the gun—secured by chains or cables linked to ring wall mounts, many of which are still visible in the coastal batteries today—recoiled and could be instantly dropped out of view. In this way, the gun emplacements were designed (using a principle called the "horizontal crest") to conceal the guns, and indeed the entire fort, from the view of enemy ships so that the disappearing gun's location was not clear from offshore even at the height of combat (Hansen 1997: 8-10).

Depending upon local conditions and military necessity, weaponry such as disappearing guns could also be complemented by large mortars or rapid fire guns in fixed positions. Between 1891 and 1903, guns in American seacoast defenses of the Endicott period ranged in caliber from three to twelve inches, while featuring several different types of fixed position mounts or carriages. With a firing range of seven to nine miles, these weapons supplemented the strategically and structurally dominant disappearing carriages. While Fort Stevens, for example, would possess five batteries with disappearing guns in two-story concrete batteries by 1903, it also had guns capable of firing from four different types of fixed carriages. A smaller number of disappearing guns overshadowed fortifications at Cape Disappointment and Chinook Point, while by October of 1900, the latter also boasted three rapid-fire fixed guns in a battery placed behind a two story concrete "masking parapet" (Hanft 1980; Hussey 1967).

"Fire control" structures were also built in association with the battery complexes at this time. These served as lookout stations of a sort, identifying the precise location of enemy craft and calling in firing positions to the gun batteries. (At Fort Stevens, both military efficiency and a rapidly changing dune landscape ultimately prompted the consolidation of small fire control stations into a single facility for all fort batteries, located on a sand hill with commanding views near Battery Russell, dubbed "Fire Control Hill"). These fire control structures were also used to operate harbor mines, allowing personnel to observe the planting process and fix the location of each mine, but also to track the position of enemy ships when mines might be detonated. Only during wartime (such as the short-lived conflict with Spain in 1898, and during the two world wars) were mines actively deployed. Meanwhile, at all three facilities, many of the garrison structures, including enlisted barracks, officers' quarters, and supporting facilities, consisted of simplified wood-frame Queen Anne-style buildings erected from standardized Quartermaster Corps plans used at a number of other installations, including those on Puget Sound (Lingo 2008; Bethow 1999; Hussey 1957).

The advent of effectively producing and transmitting electricity gave harbor defenses of the Endicott period capabilities not anticipated even a few years prior to the development of the Columbia River defenses. Ammunition hoists—still visible throughout the batteries of the three forts from this period—could be electrically powered from munitions storage rooms below. So too, underwater mines could be fired with electrical fuse systems. A member of the Board of Engineers, Henry L. Abbott, published the first manuals on the use of mines (either sitting on the bottom or buoyant) that could be fired electrically through a system of underwater

Figure 10.5 – The construction of Fort Stevens' West Battery and associated fortifications between 1897 and 1900 involved the development of wooden molds and metal revetments for its extensive concrete walls, as well as the creation of a "parados" earthwork to protect the batteries from a southerly attack. Photo courtesy Oregon Historical Society.

cables. These might be set to explode on contact or triggered by an operator. The network of cables terminated on shore in structures called mine (or mining) casemates, usually buried underground. As part of the Endicott program, electrical mine casemates were constructed at Fort Columbia and Fort Stevens. Critical to the success of these early installations, then, was dependable electric power. Yet these coastal fortifications were built in remote locations away from even the most primitive transmission lines, necessitating self-contained power plants (as was the case at many Endicott-era forts). This was true even after commercial electricity became available, since the plants could be protected by stout construction and secret locations. While most early lighting needs of garrison buildings at the forts were met with mineral oil, and while coal and wood were commonly used for heat, the Army constructed power plants at each installation throughout the Endicott era, supplying almost all of the posts' needs.

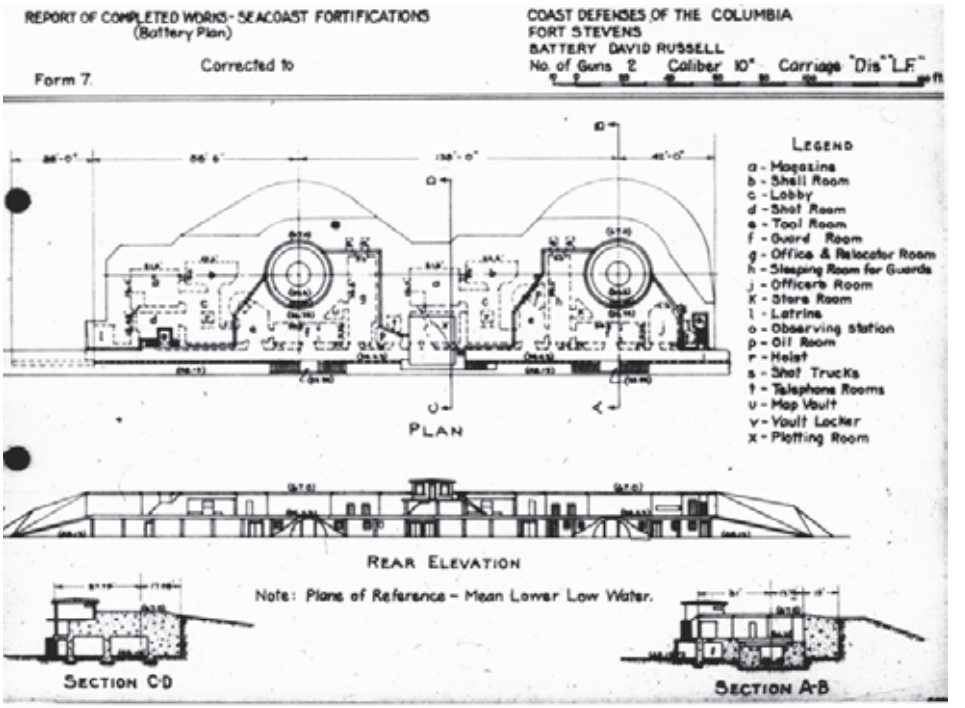


Figure 10.6 – The original plans for Fort Stevens, constructed in 1904, show some of the essential elements of the "Sewell" style construction that characterized almost all of the gun batteries of the Endicott period, including two-story construction with ammunition storage below, and " disappearing" gun mounts in circular emplacements on the second level. Image courtesy Oregon Historical Society.

Specific details of the Endicott-era buildup on the Columbia-Pacific coastline are impressive in scale and complexity. Clearly, Fort Stevens was the epicenter of construction activity in these years, reflecting military decisions at the national level declaring that facility the core of the Columbia defensive fort system. In 1897, as a response to the Endicott initiative, Fort Stevens began what was the one definitive expansion of its 80-year history. This program consisted of constructing eight concrete batteries and a large number of supporting facilities. Indeed, a solid majority of the structures still visible at Fort Stevens date from this period. By this time, Clatsop Spit had progressed so far to the west that the entire Columbia River entrance could not be covered by a single facility, contributing to a decision to divide defenses between the multi-battery river-front complex and the oceanfront Battery Russell. Facing the river mouth, a short distance to the west of the original Fort Stevens, was the West Battery. Completed between 1898 and 1900, the West Battery consisted of constituent Batteries Walker, Lewis and Mishler, all featuring 10-inch

disappearing "rifles." Walker and Lewis featured guns mounted at conventional disappearing carriages,while those at Mischler sat in unique circular pits allowing a 360-degree range field of fire. A steam plant was built concurrently to support the West Battery, while a parados—a tall defensive earthwork structure hailing from the same Vauban defensive design tradition of the original Civil War Fort—was placed on the south side of the West Battery to protect it from attacks from the rear by land or sea. The West Battery Command Station, sitting behind and above the battery, was completed in 1899, and by 1911 that station was augmented to include a mine observation facility. The outlying ocean-facing Battery Russell (1904) had disappearing 10-inch guns, similar to those at Batteries Walker and Lewis. Other batteries were built in the core facility fronting the Columbia River mouth. Battery Pratt (1900), featuring 6-inch rifles, and its accompanying command station also completed in 1900, would later serve as a meteorological station for the entire fort. Battery Clark (1899), the only mortar battery built at the fort, was fitted with 12-inch mortars, and an independent command station was constructed nearby.

Two small-caliber rapid-fire batteries, Smur and Freeman (1902), were added to protect mine fields located at the mouth of the river, Freeman being built largely on top of the old Civil War-era Fort Stevens and its earthworks, marking the end of that facility. Mine loading docks were extended into the river, and a torpedo loading facility was added on the eastern edge of the fort by 1900. A central oil-powered power plant was built by 1910, providing electricity for most purposes in the central fort, and a coal yard was added for heating buildings. South of the batteries, near the rail spur entering the fort, were the bakery, commissary and artillery engineer buildings –all added around 1900. Also built near this entrance was a guardhouse (1908), a hospital and a mine cable storeroom (both ca. 1910). Non-Commissioned officers quarters, built in 1907-08, were added south of the original Civil War fort site, while a men's dormitory from this period, built in 1911, now houses the park museum. By the end of this impressive Endicott-era buildup, carried out over a 12-year period, the majority of the buildings known to modern park visitors were in place.

While Fort Canby did not undergo redevelopment on the same scale, it was retooled to contribute to this new era of defense. Massive emplacements holding disappearing carriages marked a new era at the fort, where the earthworks built during the Civil War had, by 1872, been described as "*rapidly falling into decay*" (Hussey 1957: 26).[143] As at Fort Stevens, during the post-Civil War period the Army allowed the batteries at Fort Canby to become obsolete (though several older 15-inch guns at the site were converted to 8-inch rifled bores in 1883, with more converted

in 1890). The facility was largely derelict, so that by 1904 when the Endicott reconstruction program finally came to Fort Canby, the business directory for Astoria characterized the cape as "*formerly [having] a post there, but only [at present] with a lighthouse and population of 24*" (Polk 1904: 232).

In 1904, Congress finally made an appropriation for the two Washington forts, as well as allotments in 1907 and 1908 to pay for new barracks and other buildings.[144] In August of that year, work began on two of the three batteries that would ultimately stand at Fort Canby. The old West Battery was replaced with Battery Harvey Allen, housing three 6-inch guns on disappearing carriages, located approximately 1,000 feet north of the Cape Disappointment Lighthouse. Also built in 1906, battery Elijah O'Flyng, with two 6-inch guns in disappearing carriages, occupied the site of the old Center Battery, situated about 1,000 feet east of the lighthouse on the promontory of the cape's southern tip. At this time, additional garrison structures were added in the lowlands fronting Lake O'Neil and Bakers Bay, in addition to the repair and expansion of older garrison buildings (Hussey 1957).

Under the Endicott Program, the nascent military base at Chinook Point was developed for the first time. As the Chinook people had appreciated for unknown generations, the point provided a rare, commanding view of the entire river's entrance, from the open ocean to points far upstream. Military planners determined that the site would be suitable for the development of gun batteries, producing a "triangle of fire" across the river's mouth along with the other two forts. The location was also deemed suitable for the development of harbor mining infrastructure. Army construction at the site came in two phases. The first occurred under the auspices of the Corps of Engineers—beginning in 1896 with the construction of a wharf and other fundamental infrastructure, and continuing until fortifications were all but complete at the end of June 1900. These included four gun batteries, serviced by two power plants, and a mine casemate. The construction included two batteries high on the hill near the barracks, treated as a single battery for operational purposes, and two independent batteries fronting the water at the base of the point. Midway through this construction, in the summer of 1898, the fort was largely operational and an 11-man detachment was dispatched to the fort. It was officially designated as "Fort Columbia" one year later. At Fort Columbia, the naming of batteries all occurred as a result of one general order of 1904, with the first two, linked batteries completed in 1898 being named "Battery Ord," numbers one and two, for Jules Ord, a first lieutenant killed on San Juan Hill, Cuba, during the Spanish American War. (In 1906, the Army designated a single outlying gun as "Battery Ord #3.") The disappearing gun battery completed in 1900 and located

closer to shore became known as "Battery Murphy," after a captain killed in the Philippines that year. The battery consisting of three fixed guns, also completed in 1900, took the name "Battery Crenshaw" after another captain who died of his wounds in the Philippines that year (Hussey 1967; Meaney 1937).

Housing and other facilities at Fort Columbia were inadequate to house a full detachment. Although the military reserve was large, the Engineers determined it had to be expanded beyond its original footprint, in part to accommodate the development of new structures, but also to secure a sufficient water supply for the growing fort. Some 33 acres was secured from the public domain, and an additional 53 from the Northern Pacific Railroad. By 1900, the Corps of Engineers launched a second phase of construction on the expanded reserve, involving the building of plank roads, water reservoirs, pipelines and other utilities, as well as 14 buildings that included a hospital, an administration building, four different types of quarters for officers and noncommissioned staff coordinated through the Quartermaster General's Office, a guard house, bakery, stable, work shop, store house and oil storage. Soon thereafter, the Army Engineers added a post exchange building (including a bowling alley), a gymnasium, and separate store houses for wagons, ordnance, mines and other items. The steep topography of Fort Columbia meant that only 25 acres (of the 729 acres in the military reservation) were suitable for building any kind of structure, so the post lacked components such as a parade ground, target range and cemetery, which were relegated to the other forts. The first permanent garrison, an artillery company, was reassigned from Fort Canby to Fort Columbia in 1903. Totaling roughly 100 men and four officers, the approximate size of the garrison into World War I, they arrived just as the forts' first and most substantial period of construction drew to a close. They activated the mine casemate, began training in the new gun batteries, and settled into the new residential buildings of the fort.

Almost immediately, construction resumed. The original 1898 mine casemate proved to be exceedingly damp and uncomfortable. It was abandoned by 1907, but a need for generating equipment and switching devices led the Army Corps of Engineers to build a new mine casemate, located further west from the batteries and just behind the rock outcropping on Chinook Point. It was completed in 1911, at the same time the commanders' station for Fort Ord was moved from its position upslope from the battery into a combined fire station facility alongside (Beerhow 1999; Hussey1967; Meaney 1937).

In the midst of these ambitious construction projects, new directives regarding methods of military construction arrived from Washington, D.C. In 1905 President Theodore Roosevelt convened a board chaired by his Secretary of War William Howard Taft, intending to provide an update to the Endicott report. Most of the Taft Board's recommendations were technical, though they gave impetus to adding searchlights as part of an integrated plan for harbor defense (U.S. Congress 1906). (Some sources allude to fortifications built after the release of this report through World War I as "Taft Period" fortifications, though they continued to be developed largely under the prescriptions of the Endicott report.) On the Columbia River, the "Taft Period" was arguably still guided by the Endicott vision, reflecting the fact that Columbia defense buildups were occurring so much later than Endicott-program developments elsewhere in the country. Still, in the following decade, engineers installed 30- and 36-inch portable spotlight models with lightly built wooden shelters at all of the Columbia River harbor forts, following the outline of the Taft program. These lights, designed to spot enemy craft but also to illuminate the harbor to aid mine placement, were replaced by more powerful versions of the lights, with diameters enlarged to 60 inches just a decade later (Beerhow 1999; Hansen 1997).

World War I and its Aftermath

The start of World War I in Europe put the coast defenses of the Columbia, and indeed the entire nation, on high alert. Even before the United States entered World War I in 1917, the Army recognized how susceptible "Sewell-type" buildings might be to fire from heavy artillery. This reflected a growing realization of how powerful armored warships had become by the time major conflict commenced in Europe. In 1914, modern ships possessed the capacity to bombard coastal defenses from beyond the range of guns in land batteries. Another military board of review was convened in 1915 by the administration of President Woodrow Wilson, to review the state of seacoast fortifications and recommend changes to what had been produced by the Endicott Program and the Taft Board. Relatively few of their recommendations were actually implemented given the short duration (18 months) of American involvement in World War I, but several changes did affect the function and appearance of the three forts located near the mouth of the Columbia (Hansen 1997: 42–43).

While Pacific coast fortifications were low priority for the nation at this time, they were not left wholly undefended as the United States entered the war. Germany

maintained its own active naval forces in the Pacific, defending colonial holdings on the Chinese coast, as well as in Samoa, New Guinea and several other Pacific islands. Allied forces would engage German and Austro-Hungarian forces across the Pacific throughout the war, eventually routing the Central Powers from much of their Pacific holdings. As a result of these events, and the revelations of the Wilson review, the forts were given renewed attention. A possibility of direct hits from naval bombardments on mine casements at Fort Stevens and Fort Columbia spurred the Army to develop a project aimed at strengthening these buildings—principally by thickening the concrete walls of existing batteries. Work at Fort Stevens proceeded first, eventually remodeling the harbor mine casemate so it now possessed the same interior layout as the earlier Sewell-type structure at Fort Columbia. The biggest change was that the Fort Stevens casemate of 1917 now possessed reinforced concrete walls 8-feet thick, a roof of the same material 5-feet through, and a covering of sand 9-feet deep (Hanft 1980; Hussey 1957).[145]

Still, ironically, the biggest change to the Columbia fortifications resulting from World War I came from Wilson's board of review proposing the addition of portable guns on railway mounts in the European theater. This prompted the Army to remove a number of large guns from American coastal defenses especially in the comparatively secure Pacific theater and ship them to Europe for use in land-based warfare. While the Army retained sufficient guns to keep the Columbia harbor forts operational, several guns were shipped from these forts to Europe's western front. The four guns from Fort Stevens' Batteries Lewis and Walker were dismantled and sent to France. At Fort Canby, Battery Harvey Allen's guns were sent to Europe as well. They were replaced by the guns of the very short-lived Battery O'Flyng (1906-18), which was decommissioned at this time. At Fort Columbia, the 6-inch guns at Battery Murphy remained in place due to their value in protecting Fort Columbia's minefield, but all three of the 8-inch guns at Battery Ord were removed for service in Europe, resulting in the decommissioning of Battery Ord after little more than 20 years of service.

Perhaps the biggest role Columbia harbor forts played in World War I, other than providing guns for the war effort, was in their use to train artillery regiments for service overseas. The mustering-in process swelled the ranks of artillery units stationed there from a force totaling 20 officers and 450 enlisted men at all three forts just prior to the United States entering the war, whether as regular Army or as officers and enlisted men of the National Guard.[146] When completed in August 1917, the mustering-in had furnished enough men to largely fill the Columbia River coast defenses' fortifications to capacity for the first time. The peak total of staffing

for all three forts combined reached roughly 2,600 men. All three forts were used for elaborate training exercises, including war games. The Fort Stevens men's dormitory built in 1911 (now the park museum) was converted to a War Games Building, with communications links to the functioning batteries, and served as a focal point of training exercises during the height of the war (Lingo 2008; Hansen 1997: 42–43).

Figure 10.7 – Fort Columbia in 1937, showing the locations of all facilities, including the Endicott-era gun batteries following the World War I decommissioning of Batteries Grenshaw and Ord. From War Department, Fourth Army and Western Defense Command, Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

At Fort Canby, the development of the jetty in the years immediately preceding World War I, beginning in 1914, brought new life to the fort as it had to Fort Stevens years earlier, though Army Engineers had to work around a fully developed and occupied military facility in this case. As noted elsewhere in this document, World War I also brought a surge of activity in the forests, as Sitka spruce was harvested for airplane manufacturing on the outer coast and Douglas fir was harvested from the region's interior for ships. The later part of the war also witnessed the arrival of the great influenza pandemic on the lower Columbia, filling to capacity the Fort Stevens hospital, where roughly 50 men died (Hanpf 1980; Hussey 1967, 1957).

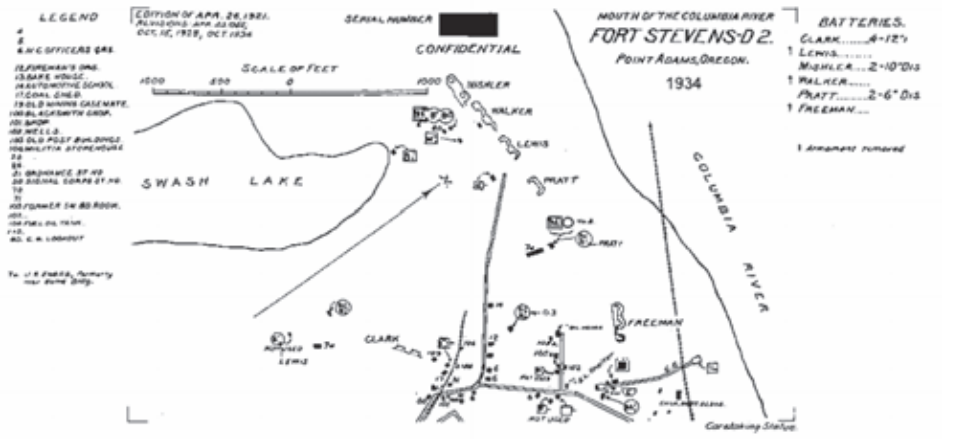


Figure 10.8 – The configuration of Fort Stevens in the years between World War II still significantly reflected the objectives of the late-19th and early 20th century Endicott program, with a number of Sewell type gun batteries oriented toward the mouth of the Columbia River. Image from War Department, Fourth Army and Western Defense Command, Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

The military buildup as part of the Endicott Program to strengthen coastal defenses came to an end about the time of American entry into World War I in April 1917. Still, as already mentioned, there were a number of structural changes to the forts during the war and thereafter. To better control the harbor, a mine casemate and mine commander's station were added at Fort Stevens by 1918. Searchlights and a small searchlight power station were added at Fort Stevens concurrently, to illuminate the mine operations in the harbor. Also, by the middle of American involvement in World War I, Army commanders around the nation were expressing frustration with the two-story design of the Sewell-type installations, due to the complexity of moving ammunition between different levels of the fort. They preferred new coast artillery equipped with cannons and mortars removed from fixed emplacements and readied for use on mobile mountings. In 1918, four 12-inch mortars from Battery Clark at Fort Stevens were also moved across the river to a new Fort Canby battery for fixed gun emplacements—Battery Guenther—in part to provide better cross-fire and to reduce the complexity of operations at Battery Clark. Battery Guenther was operational by 1922, but its location proved to be subject to landslides and created almost constant maintenance headaches (Hansen 1997: 44; Hussey 1957: 30).

As at the end of the Civil War, the end of World War I in November of 1918 prompted a rapid demobilization of these forts (and forts across the nation). Troops returned home and obsolete structures were decommissioned due to rapidly thinning fort

detachments, returning the forts to a state of almost complete inactivity. At the three forts on the lower Columbia, the years following World War I brought a drastic downsizing of full-time staff. One company of 40 men remained on duty at Fort Stevens, which dispatched small caretaker detachments to Fort Canby and Fort Columbia. Aside from annual National Guard training exercises that lasted for two weeks each summer, the contingent of servicemen at Fort Canby declined to as few as two or three over extended periods. Fort Columbia, too, became a sleepy post, run by one sergeant and one or two enlisted men, detached from the main artillery company at Fort Stevens (Hansen 1997: 46; Hussey 1957).

Several batteries were decommissioned. By 1920, Batteries Smur and Freeman were deactivated at Fort Stevens. At Fort Columbia Battery Ord and Battery Crenshaw were already outdated and in poor repair. They were scrapped—their guns dismounted and sent to facilities in other parts of the country, their carriages sold to private parties locally. Other support structures, in poor repair or obsolete, were removed over the following two decades. Buildings for outmoded activities were especially targeted, such as stables, blacksmiths' shops, coal sheds, wagon sheds, mine storerooms, wharf houses, and quarters for teamsters. A new mine casemate completed at Fort Columbia in 1921 represented one of the few Army construction projects on the west coast of the World War I period, though the post and many others fell into inactivity thereafter. In 1922, Fort Stevens added a communications bunker that reflected the experiences of troops in World War I, consolidating all fort communication functions into a single building designed to be gas-proof. A testing facility for cables used for harbor mines was built adjacent.

The main organizational change for forts intended to serve as part of harbor defense systems during this period came in 1924, when the coast artillery went from separate companies of varying sizes (still stationed at Fort Stevens, in the case of the Columbia harbor defenses) to standard regiments. This move reflected an emphasis on mobility and new responsibilities such as anti-aircraft protection, rather than manning large guns and mortars. The rapid growth of tactical airpower developed during World War I had rendered the Endicott forts obsolete as the main defenses against potential attacks made inland. Nevertheless, over the next quarter century, the seacoast fortifications retained some value as bases for training along with deterrents to enemy ships and submarines as harbor defense systems (Hansen 1997: 45-46).[147] They remained quiet and largely inactive bases, with skeletal crews. According to one newspaper account from the early 1930s, the men stationed at Fort Columbia often had long gaps in their schedule, allowing them time to herd cows and sell milk to fishermen. By 1931, things had become so quiet that the Army's

chief of staff, General Douglas MacArthur, recommended "partial disposal" of Fort Canby. The Army took no action on this recommendation, and the post remained armed by one battery of mortars (Guenther) and two batteries of "light" artillery, Allen and O'Flyng (Hansen 1997: 46–47; Hussey 1957: 31).

Depression-era Improvements

Election of President Franklin D. Roosevelt during the depths of the Great Depression in 1932 brought about a succession of programs aimed at stimulating the American economy and putting people back to work. The Civilian Conservation Corps (CCC) job-training program was one of FDR's favorites and operated 6-month enrollment periods between 1933 and 1942. The Army recruited unskilled young men as enrollees and operated camps established to complete projects on federal, state, and even private land throughout the country. These camps could remain in place for one or more enrollment periods, depending on work demand.

Figure 10.9 – Fort Canby in 1937, showing the locations of all facilities, including the Endicott-era gun batteries following the World War I decommissioning of Battery O'Flyng. From War Department, Fourth Army and Western Defense Command, Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

Figure 10.10 – Camp Clatsop, the National Guard base on Clatsop Plains. Later renamed "Camp Rilea," the facility is one of the last remaining military facilities in the region. Photo courtesy Oregon Historical Society.

The program peaked in overall numbers in 1935, and numbers declined thereafter as the economy improved. At Fort Canby, the Army ran its own camp through 1935–36, employing members of a different CCC company each time. Unlike other camps, where tents or prefabricated barracks had to be erected along with utility systems, the fort's existing infrastructure allowed Army personnel and enrollees at Camp Canby to focus almost exclusively on work projects. The most enduring consisted of road improvements south and west from Ilwaco, throughout much of what is now Cape Disappointment State Park. As noted elsewhere, Fort Stevens also hosted a CCC camp and crew, who worked diligently to control the shifting sands that threatened fort operations, developing nurseries of beach grass and other plants and planting the strand from the south jetty to Seaside (Donella Lucero pers. comm. 2013; Carlson et al. 1991; Reckendorf et al. 1985; Hanft 1980).

The National Guard was also a growing presence on the lower Columbia at this time. The Guard had emerged nationwide during the Spanish-American War when chronically underfunded state militias received federal aid in return for more control by federal military authorities. By 1927 the Oregon National Guard had founded Camp Clatsop (renamed Camp Rilea in 1959) on Clatsop Plains, south of Fort Stevens. The camp was used for training purposes by Oregon's National Guard, but

was also integrated into federal operations, so that National Guard troops from the facility were sent to the three harbor defense forts for part of their training. In turn, Army trainees were able to use Camp Clatsop for small tactical military maneuvers involving equipment or munitions having the potential to remove vegetation and create destructive "blowouts" in the sand dunes. The practice of using Camp Clatsop for these damaging operations aimed to avoid further destabilization of dune fields around Fort Stevens. By 1935 the camp had three miles of ocean front with mobile dunes that were migrating toward camp facilities and lakes, requiring an ambitious dune restabilization program overseen by the Civilian Conservation Corps crews stationed at Fort Stevens (Carlson et al. 1991; Reckendorf, et al. 1985:266-67) [148]

The Events of World War II

With war once again looming in Europe and the Pacific, the Army began in the early days of World War II rebuilding and modernizing its coastal defenses, reversing the shrinking footprint and declining relevance of the Columbia River's military posts. Recognizing the growing dangers overseas, Congress authorized a new construction program in September of 1940. At that point Fort Columbia and Fort Canby shared an initial appropriation of $130,000, one largely earmarked for new barracks and other buildings needed for the mobilization and housing of additional troops. This coincided with reactivation of units in the Army's coast artillery as well as the activation of troops from the National Guard (Berhow 1999; Hansen 1997; Hussey 1957).

In terms of weaponry, the Columbia River defenses fell into the second tier of Army priorities. Still, even as the United States was drawn into the war in December of 1941 by a Japanese strike at Pearl Harbor, Hawaii, the Columbia forts received funding for new batteries, searchlights and support facilities. At Fort Stevens the reactivation and buildup of facilities was abrupt. The defunct gun battery at Battery Mishler was capped with a concrete roof, and its interior halls converted to a combined Army and Navy control post for the entire Columbia River harbor defense—the "Harbor Defense Command Post" and the 'Harbor Entrance Control Post" being the two halves of this operation. Battery Pratt was upgraded to oversee and defend minefield operations at the mouth of the Columbia, and the fort added a special mine loading building. Endicott-era mine loading docks were modernized on the waterfront to facilitate easy loading and unloading of the large, powerful mines of the period. The Fort Stevens mine casemate was deactivated, however, its functions consolidated at Fort Columbia. By the time the United States was fully

engaged in the Pacific theater of World War II, only three of the original Endicott-era batteries—Clark, Pratt, and Russell—were still operational. The remains of Battery Freeman, as well as what remained of the original Civil War-era Fort Stevens earthwork, were unceremoniously leveled at this time to produce a parade ground.

A new barracks complex was added south of the original Civil War Fort Stevens site, and an automotive training facility, fire station and chapel were constructed immediately adjacent. New, privately-run laundry facilities were housed in a structure on the eastern edge of the fort. At Fort Columbia, meanwhile, the Army added new barracks, officers' quarters and a recreation building, built from standardized plans issued by the Office of the Quartermaster General. Fort Columbia received new guns, some support structures, an improved mine system and an expanded casemate for better operational control of the minefields at the Columbia River's entrance.[149] This modernization program led the Army to acquire 86 acres of additional land that was added to the Fort Columbia military reservation. At Fort Canby, the problematic Battery Guenther was decommissioned by 1942, with battery operations being consolidated at the one remaining battery, Battery Harvey Allen.

Figure 10.11 – Although the war largely raged thousands of miles away, there were frequent reminders of the Pacific front. Here, a Japanese mine that had drifted across the Pacific to the oceanfront of Fort Stevens is seen in April of 1945. From War Department, Fourth Army and Western Defense Command, Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

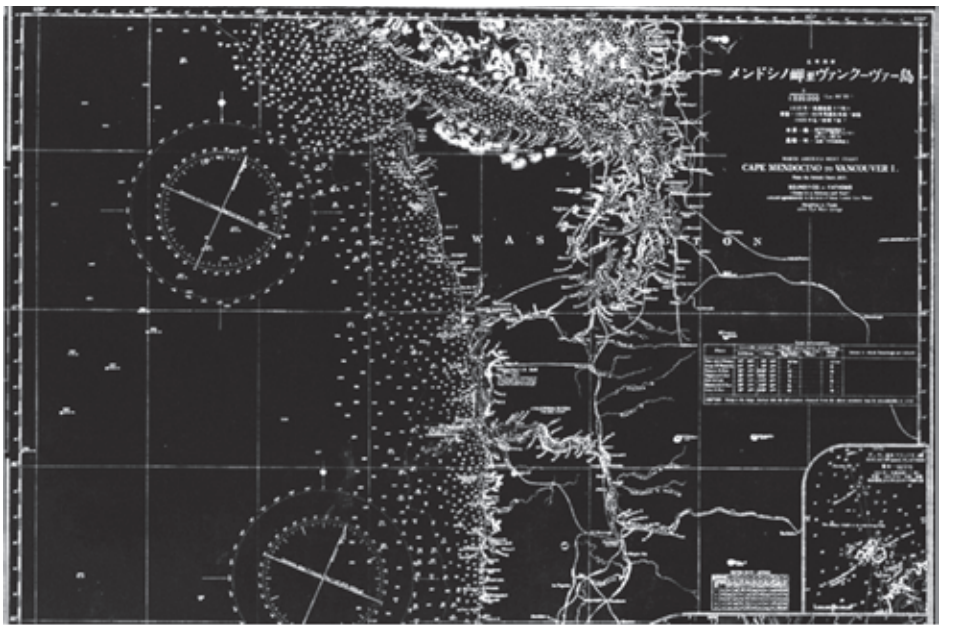


Figure 10.12 – A portion of the Japanese nautical chart of the Pacific Northwest reported to be used by I-26 when shelling the coast of Oregon in June of 1942. A lack of detailed intelligence and navigational information contributed to the attack's very limited success. Image courtesy Oregon Historical Society.

A variety of freestanding structures—open and "pill box" machine gun emplacements, phone and radio boxes, lookouts, sentry buildings and others—were added to what was already a diffuse constellation of such sites around the forts' perimeters, where they can still sometimes be seen amidst the encroaching tangle of coastal forest (Beerhow 1999; Hussey, 1967, 1957).

In the midst of this redevelopment, events on the Pacific focused national attention on the military preparedness of the Columbia-Pacific region in unprecedented ways. Partially in response to United States bombers successfully attacking outlying Japanese islands from aircraft carriers in spring of 1942, the Japanese navy dispatched a number of long-range, I-class submarines to attack American shipping interests that summer, with the submarines designated I-25 and I-26 being sent to lead the campaign on the coast of the Pacific Northwest. On June 20th, I-26 fired on ships off the northwestern Olympic Peninsula and even a lighthouse facility at Estevan Point, on Vancouver Island. On the evening of June 21st, the I-25 submarine operating under the command of Commander Meiji Tagami, was able to navigate close enough to Fort Stevens to fire several rounds from its 5.5-inch deck guns. Fort

Figure 10.13 – Inspecting a crater from one of the Japanese shells that landed at Fort Stevens in June of 1942. From War Department, Fourth Army and Western Defense Command, Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

Stevens became the only military installation in the contiguous United States to be attacked by an enemy warship since the War of 1812. The quality of Japanese intelligence about this coast was mixed, and Tagami believed he was firing on a submarine base (an information gap that may also explain the decision by the crew of I-26 to fire on an obscure and remote Canadian lighthouse). Although seventeen shells were reportedly fired, the number that landed was smaller—as low as nine by some accounts. The shells landed on the Fort Stevens military reservation, most on the south end of the facility near Battery Russell, leaving a number of craters in the sand. The only damage was to a baseball diamond backstop and a power line. The fort did not return fire, as the submarine was out of range of the fort's guns—many still dating from World War I or earlier—and the commander did not wish to give away the fort's exact location. A stone monument was later constructed south of Battery Russell to commemorate the episode, and a monument remains on the site (Webber 1995, 1975).

In Japan, the attack of the I-class submarines was hailed as a strategic success, a psychological victory of sorts, intimidating the American enemy while providing

Japanese naval leadership some level of consolation for the humiliating springtime American attacks on Japanese soil. The Japanese attack certainly had a psychological effect in the United States and Canada, as the newspapers of the time attest, but the effect may have been different than the Japanese anticipated. These events prompted the rise of a robust civil defense program in coastal communities that lasted for the remainder of the war (Kann and Kann 1990a, 1990b, 1991). Families set to work building bunkers. Indeed, a privately constructed bomb shelter, built right after the attack, sits within the boundary of Fort Stevens State Park, and can be viewed by visitors today. (In Canada, the shelling prompted the darkening of lighthouses along the coast, creating great inconveniences for mariners, fishermen and shipping interests throughout the duration of the war.) Critical to the Columbia harbor forts, the Japanese attack intensified efforts to fortify the coast. Immediately after the attack, Oregon's Senator Rufus Homan made headlines deriding the west coast defenses as "*criminally obsolete, woefully inadequate and poorly distributed*" (United Press 1942). Congressional appropriations were streamlined and the Army hastily approved construction of new 6-inch gun batteries for all three forts.

By October of 1942, construction began on Battery 245 at Fort Stevens, Battery 246 at Fort Columbia and Battery 247 at Fort Canby. These were examples of "regelbau" construction, a German military term referencing use of standard designs in bunker fortifications, often involving several linked subterranean rooms and passageways that protected interior spaces even if the entry was under attack. With these bunkered gun emplacements, the Army intended the batteries to protect the Columbia River's entrance by producing a new "triangle of fire" through two 6-inch guns, on pedestal or "Barbette" mounts, designed to deliver a 105-pound armor-piercing projectile with a range of 15 miles or more. These guns were sufficiently powerful to deter enemy ships attempting to enter the Columbia, or to fire on them from near-shore waters. These batteries had other advantages as well. They eliminated the problematic ammunition hoists found in older gun batteries, since a single level accommodated all of the interior spaces. The design also built on lessons about concrete construction and represented improvements on the Endicott defenses of 40 to 50 years earlier. Furthermore, improved construction techniques removed condensation that had plagued the older batteries at all three forts, and the new batteries had their own power sources, switchboards, plotting rooms, latrines, air filtration systems and even drinking fountains.

At Fort Stevens, a new rifle range was added on the sandy flats just south of Battery 245. This allowed soldiers stationed there to train in use of M-1 rifles. The Columbia's south jetty and Jetty A were also militarized for the first time, with the addition of 90mm AMTB (Anti-Motor-Torpedo-Boat) batteries right on the

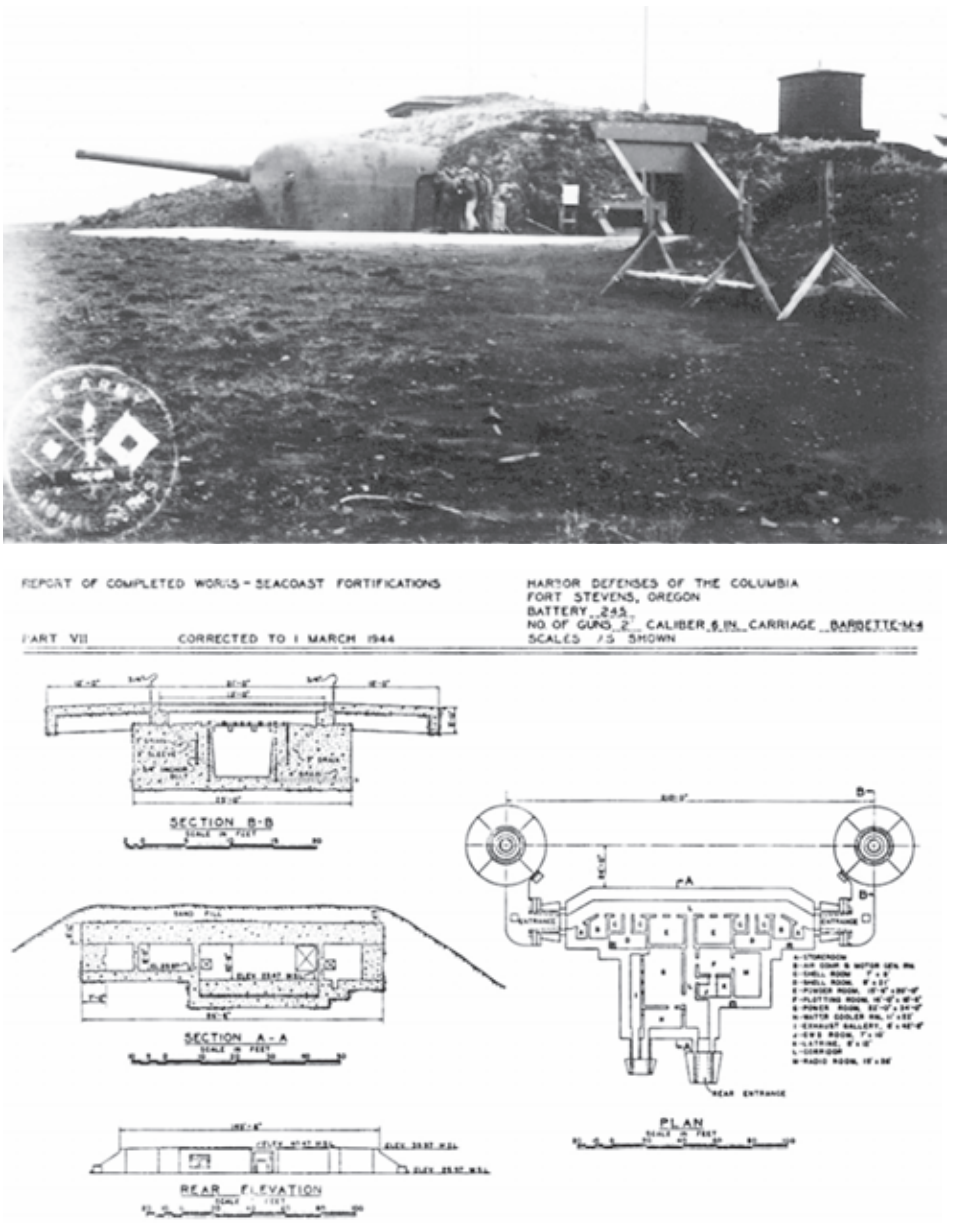


Figure 10.14 – A photo and plan view of Battery 245 at Fort Stevens, constructed rapidly at the height of World War II. The three batteries constructed at the Columbia River forts during this period reflected recent advancements in military standards, including the use of bunkered gun emplacements in a "regelbau" style underground bunker. From War Department, Fourth Army and Western Defense Command; Coast Defenses of the Columbia (03/17/1941 - 1946) – National Archives and Records Administration.

waterfront. Several of the forts' searchlights were moved and improved. To these were added a number of searchlights along the coast, including 22 lights placed at strategic points from Klipsan Beach on the Long Beach Peninsula down to Gearhart, Oregon. Small power plants were added, including plants to support searchlights as well as new radar facilities at these forts. Other lands outside of the forts, such as an added fire control station in Hammond, were placed in military control at this time.[150] Beyond this, the forts participated in the extension of support facilities outside the boundaries of the forts, adding some 34 miles of barbed wire around strategic points, and supporting the development of beach patrols. Staffing at all three installations reached a combined total of 2,800 men by 1943, not including the significant civilian support underlying the efforts (Hansen 1997: Hanft 1980; Hussey 1967, 1957).

As part of this rapid mobilization along the coast, the reach of the military extended to places with no prior military use in what is today Ecola State Park. The Tillamook Head Air Warning Station (AWS Site J-23) was one of the last pieces of military infrastructure developed in the study area during World War II, and remained in military control slightly longer than the forts. The top of the headland was acquired in 1943-1944 by the federal government and was developed as the site of a U.S. Army radar operations bunker, using early radar to detect the approach of potential enemy airplanes and ships. Sitting just south of the Tillamook Head summit and "Clark's Point of View," the station included a combination of federally-owned acreage and leased lands. In addition to acquiring the former Lighthouse reservation lands, the military promptly bought fifty acres from Crown Zellerbach for $2,336, as well as leasing one acre from Crown Zellerbach and another 25 acres from the State of Oregon. Both leases cost the United States one dollar (Fanflik 1948). The Tillamook Head Radar Station was code-named "J-23"and was apparently a "Chain Home Low" radar installation of British design, with some portion of the equipment manufactured in Canada.[151] The facility also served as a manual lookout for enemy airplanes and ships.

This type of radar facility, also of "regelbau" construction, was ideally located atop steep headlands that lent it a commanding position. Moreover, the cliff face below the facility concentrated and amplified the radar signal. The station was one of several along the Oregon coast under the command of the Portland Air Defense Wing, which also included small facilities on Cape Meares, Cape Foulweather, Cape Perpetua, Cape Arago and Cape Sebastian. On the Washington side of the Columbia, the Seattle Air Defense Wing commanded an array of similar radar installations including one located outside Grayland near the northern boundary of Pacific

County, as well as at Point Grenville, Cape Elisabeth, Ruby Beach, Cape Flattery, Portage Head, Neah Bay and points inside the interior waters of Washington (HAER 2005). These facilities were typically constructed by civilian construction companies working under contract for the War Department. Built into surrounding slopes, intentionally inconspicuous, the Tillamook Head radar installation's subterranean bunker is still detectable to passers-by due to its six primary vent ports and two entrances. Though both are now blocked by Oregon state park grates that prohibit human visitors, they still admit bats. Several buildings, including garrison structures, sat adjacent to this main installation. In a surplus property report by the War Assets Administration, the installation was described in 1950 as consisting of 15 buildings, 14 of which were "*wood frame*," and one described as "*Operations, (underground) concrete, outside dimensions 21' x 80'*" (Fanflik 1950).

The construction of the Tillamook Head radar facility led to the development of a road to Indian Beach from Highway 101, along the route sometimes known as "Radar Road." A portion of the modern park road between Ecola Point and Indian Beach follows this route, as does the old road grade from Indian Beach to the Tillamook Head summit radar facility, which serves as a state park trail. (The easternmost part of this road is a working logging road accessing private timber lands just east of the park.) At the time of road construction, the military determined that the tall timber lining either side of the road from Indian Beach to the summit up the Indian Creek drainage should be removed. They wished to mitigate the cutting off of the radar facility in the event of winter tree fall. Thus, a long, linear strip of young forest, following the road through adjacent old-growth, is clearly visible along this segment of the park road. Unfortunately, when "Radar Road" was developed in 1943-44, the road-builders demolished a significant portion of the Indian Beach village archaeological site (Minor 1991; Ross 1985).[152]

Oral traditions of coastal residents of this period suggest an impressive level of commitment at the civilian level, and hint at the degree to which the war transformed coastal life. Accounts exist of horse patrols riding the beaches of Clatsop and Pacific Counties through much of the conflict. Town elders still identify the locations of stables, sleeping quarters and hay storage racks used to supply these operations, which were variously supported by the Coast Guard, the Army and local volunteers. Some describe weapons stockpiles at the Clatsop County airport and other places, creating depots that were suddenly off-limits to the general public. To the south, accounts exist of American bomber aircraft using offshore rocks for target practice, scenes that were viewed with interest from Ecola State Park, and accounts of Highway 101 being closed off when the Arch Cape tunnel was crammed with

stockpiled munitions. Since gas rationing marooned most Northwest residents in the cities, tourist traffic was negligible. According to oral tradition, miles of coiled barbed wire and spotlight stations lined the beaches, and lookout zeppelins flew lazily above the strand, sometimes dragging tow lines and allowing local children to drag along the beach holding the lines. Accounts exist of blackouts, of covered windows, and of specially designed car-light covers that emitted only a thin band of light to avoid drawing the attention of enemy craft. As was typical throughout the United States, there were bomb shelters and victory gardens and scrap drives. While not yet organized in one volume, oral histories of this period on the coast are rich and, at the time of this writing, still recoverable.[153]

All three Columbia-Pacific forts were deactivated for military use following the end of World War II due to technological advances emanating from that war—from jet aircraft to nuclear weapons—that made coastal artillery forts obsolete. Even before the war was over, as Japan began its retreat throughout the Pacific, the forts at the mouth of the Columbia were being decommissioned. The last operational old gun battery at Cape Disappointment, Battery Harvey Allen, was decommissioned by the end of May 1945. The AMTB guns installed on the jetties were deactivated by July of 1945, barely two and a half years after their installation. Dismantling of the remaining forts began just after the Japanese surrender in August 1945. By March of 1947, when the forts at the mouth of the Columbia had been listed as among 35 Army posts and airfields declared surplus, several older structures were fully or partially dismantled at all three forts. Further dismantling continued even as the disposal of the lands proceeded, so that the housing, medical facilities, shops and other structures built at the bases largely disappeared before federal authorities conveyed what later became state parks to state and local governments in the mid-1950s. The posts passed into the hands of the War Assets Administration in 1947 and 1948.

By 1947, the U.S. Army Corps of Engineers took over operations of Fort Stevens, once again using the fort as a base to maintain the mouth of the Columbia River. Almost 492 acres of the Fort Canby reservation went to the Coast Guard at around the same time, the barracks and other salvageable infrastructure being scheduled for sale or removal from Fort Canby, while all Army personnel were vacated from the premises by October 1947 (Hansen 1997; Hussey 1967, 1957). Having been overshadowed by obsolescence for much of their existence as forts, they ultimately succumbed to technological changes that eliminated classic coastal harbor defenses across the nation. In time, all three forts passed to the state park systems on either side of the river, a point discussed in later sections of this document. The radar installation atop Tillamook Head was briefly reactivated after World War II and remained

active in the late 1940s with upgraded equipment, as the United States retooled old radar installations in response to a growing Soviet threat. Yet the site was decommissioned within a few years of its extended operation, the land ultimately acquired by Oregon State Parks to expand Ecola State Park (HAER 2005; Boardman 1956). Of the military facilities discussed in this document, only Camp Clatsop—now known as Camp Rilea—remains an active military base, serving as a training facility for the Oregon National Guard.[154]

Figure 10.15 – All three forts were declared obsolete, and disposed of as surplus property through the late 1940s. Seen here is Battery Ord, shortly after the transfer of Fort Columbia to Washington State Parks. Cape Disappointment sits in the background – its own Fort Canby transferred to Washington State Parks at roughly the same time. Photo courtesy Washington State Historical Society.

11 Creating Spaces of Recreation and Conservation in the Columbia-Pacific Region

From the beginning of American resettlement of the Columbia-Pacific coastline, people understood the scenic and recreational potential of the place, with its sprawling beaches, rocky headlands, looming mountains and views to the Pacific horizon. Beach resorts were already a widespread phenomenon on the coasts of the American East and Europe. They were known to arriving settlers, who saw potentials for similar development of West Coast beaches. Still the very remoteness of the coast in the 19th century, and the barriers to transportation between the coast and the rising cities of the interior Northwest, long posed obstacles to the realization of this vision. Transportation set narrow parameters for tourism, even more than was true for resource extraction, yet expanding transportation technologies and infrastructures would eventually eliminate the burden of distance. In its earliest days, tourists were adventurous souls and disproportionately affluent, having both the money and spare time to reach a remote place for recreational purposes. Intrepid tourists began arriving on day-long trips by steamship and wagon, which were soon replaced by railroads, which were replaced just as quickly by private automobiles. The socioeconomic spectrum represented by the coast's tourists broadened, as the burgeoning middle class of the Northwest discovered the coast and its tourist institutions became more "democratic". Today, the ubiquity of automobiles and a network of highways place the coast within day-tripping range of metro Portland and millions of potential tourists.

As tourists increasingly flocked to the beachfront to swim, sunbathe, and play in the sand, the entire region shifted at its core, transitioning from small, densely packed industrial settlements on interior tidewaters to diffuse communities lining sandy beaches on the open Pacific. This transition fueled rampant real estate speculation along beachfronts of the late 19th century, funded in part by local industrialists, a pattern arguably persisting into present day and continuing to shape coastal landscapes. Concurrent with these changes, Pacific Northwest residents underwent a fundamental shift in their relationship to "natural resources" on the coast, reflecting cultural trends both national and international. Throughout the 20th

century, a growing number of Columbia-Pacific residents sought to protect scenic and biologically rich landscapes. Especially in places previously seen as "marginal lands"—meaning too rocky, sandy, or remote for occupation—and often with the backing of tourist interests, they helped create parks and other protected lands. All of these events had profound effects on the story of Lewis and Clark National and State Historical Parks.

Like most early history of the region, the early history of tourism intersected with LEWI lands in diverse ways. Travelers along the Columbia often stopped and stayed at Fort George in Astoria through the first half of the 19th century, even if their interests in the place were largely avocational. Elijah White's short-lived hotel development on the promontory of Cape Disappointment in the early 1850s, like a few others in the region, provided general boarding for travelers no matter their interests in the area. People who were ostensibly "tourists" stayed at such early and modest hotels alongside ship crews, resource workers, surveyors and others passing through the area. Families such as the Latties, on their Seaside lands that included today's National Park Service Salt Works, operated a guest house for many years in the mid-19th century. They fed and housed people traveling along the coast for any number of reasons. Indeed, long before these events, Native peoples of the area hosted visitors from myriad tribes who passed through for social, ceremonial and economic purposes. Today in fact, some tribal people suggest the Corps of Discovery were, in a sense, "tourists"—and not tourists of the highest caliber. Answering the question of when tourism began in the Columbia-Pacific region would require volumes, and is more a matter of perspective and definition than of firm historical fact.

Yet certain events were definitive and almost revolutionary. In Seaside, for example, where the Latties' small and somewhat remote guest house was such an important institution, things changed quickly. By the late 1860s, railroad magnate Ben Holladay discovered the tourist potential of the area and set modern Columbia-Pacific tourism in motion. Having grown rich running stage lines in the California gold rush, even owning the "Pony Express" for a number of years, Holladay moved to Oregon in the late 1860s and worked assiduously to build a transportation empire in the Northwest. Within just a few years, the brash and confident Holladay owned the Oregon and California Railroad, the Portland Dock and Warehouse Company, the Oregon Transfer Company and the Oregon Steamship Company (which later merged to become part of the Oregon Railroad and Navigation Company—a major player in the development of coastal tourism). By 1871, Holladay had purchased the Lattie

Figure 11.1 – Prior to the development of railroads in the 1880s, beach tourism was the domain of a handful of hardy souls, such as these Long Beach visitors – willing to travel for a day or more from more urban settings, bringing many of their supplies with them. Photo courtesy Washington State Historical Society.

family claim and embarked on the development of the first large-scale summer resort in the community, the ostentatious Seaside House, for which the town was eventually named. Here, on lands that included the Natioanl Park Service Salt Cairn site, summer tourists were supplied with food and entertainment such as storytelling, all supported in part by the Native American community living nearby. Emma Miller's description of the halcyon days at the Seaside House, an account based on multiple sources, is salient here:

"*[Holladay] maintained a stable of fine horses, barns, and a race track. A foundation was placed in the center of the track; cages of wild animals were on display near the hotel, and tame deer wandered over the grounds. A trap in the river provided fresh fish each day. A flag flew from a flag staff, to be saluted by the firing of a cannon aboard Holladay's steamers as they passed up and down the coast. In that establishment Holladay entertained with a lavishness which was rare in the pioneer days of Oregon. He brought parties from Portland on his steamers and nothing was too good for the people whose influence or financial assistance he desired. Seaside was looked upon as a "high-fashion" resort and many of the visiting ladies arrived with two or three trunks full of gorgeous clothes"* (Miller 1958: 254).

With his broad influence in business circles of the region, Holladay used his transportation interests to promote the Holladay hotel in Seaside, and in turn used his hotel to generate business for his fledgling coastal transportation network. The Holladay resort would continue to serve as a center of Northwest coastal tourism well after Holladay's death in 1887. Small clapboard hotels and guesthouses popped up alongside the Seaside House in the narrow strip between the ancient Sitka spruce forest and the strand, many built on lands platted from the old Lattie claim, serviced by wagon and later rail services developed by Holladay and his business associates. In time, this tourist district evolved to become the Seaside "promenade," with its beachfront walkway and shops catering to middle-class tourists, modeled loosely on beachfront towns like Atlantic City.

As with most early tourist developments on the coast, the Seaside House was supported by a combination of Columbia River steamers and coastal stage lines that linked tourists, most from the Portland area, to the fledgling resorts of the coast. Unlike most of these early tourist developments, however, Seaside's benefactor happened to own (or have tremendous influence over) a sizeable portion of the region's steamers and stage lines. During this period, and with Holladay's influence, the steamship companies of the Columbia established a pattern. They carried passengers to Astoria's waterfront, where they were transported by smaller boats to wharves connected to crude stagecoach roads leading to the ocean beach. In time, the Oregon Railroad and Navigation Company (OR&N) dock in Astoria, near the site of today's Columbia River Maritime Museum, became the primary terminus for the large river steamers, with tourist passengers brought there by OR&N boats and those of competing companies. Smaller boats then carried passengers and their luggage to smaller docks. Those bound for Seaside landed at points along the south shore of Youngs Bay (Peterson 2006; Affleck 2000; Timmen 1993; Stewart 1950).

During the early days of Ben Holladay's Seaside House, the Shane family worked with Holladay and the OR&N to run steamers directly from the Astoria docks to the family claim in what is today Fort Clatsop.[155] This was one of several developments pursued by the Shanes. For a brief time the family even succeeded in leveraging the development of a dock, a wagon road, and a small stage operation to carry tourists to Ben Holladay's Seaside resort. Writing in 1900, P.W. Gillette wrote,

"The owners of the property [the Shane family], aided by others, cut out and graded a good wagon road from there to Clatsop plains, and through the Influence of Ben Holladay, the O.R. & N. Co. was induced to run their steamers during the seashore season direct to Fort Clatsop, where the passengers were met by stages to convey them to the seaside resorts. But this

Figure 11.2 – Ben Holladay's Seaside House, the opulent hotel that launched the tourist industry of Clatsop County's Pacific coast, as seen in the late 19th century. Photo courtesy Seaside History Museum.

route to the seashore was soon abandoned, and the resound of civilization was no longer heard at Fort Clatsop; and I believe it is still silent and alone to this day" (Gillette 1900a).

The road had the advantage of providing a short route to Clatsop Plains and—as the Corps of Discovery appreciated—offered a dry upland landing point along what was a largely marshy and shallow estuarine coastline. Still, the wagon route required the crossing of the low but muddy hills west of Fort Clatsop, as well as a few marshy tidal creeks. The route of the Shanes' wagon road roughly approximated the northern edge of the Fort Clatsop unit, crossing the Skipanon River close to the modern Fort-to-Sea Trail crossing. This operation and its wagon road were short-lived, as Gillette suggests. The road was soon circumvented by alternative wagon routes, with their terminus at the steamer docks in Warrenton, near the mouth of the Skipanon River. From Warrenton, wagons could follow a relatively straight and direct route down the Clatsop Plains toward Seaside, free of hills and running parallel to the creek drainages instead of across them. So too, the large docks and a burgeoning town of Warrenton were in a better position to support these wagon operations, with ample goods and services available at its tidewater wharf that

were unavailable at the Moore landing.[156] Today, evidence of the original Shane trail is largely absent along its former route, except to the extent the road was incorporated into later roads and trails. It has been long overgrown with dense forest.

Similar developments were soon underway on the opposite side of the Columbia. Through the 1870s and early 1880s, people and goods traveled from the Long Beach Peninsula to the outside world by a hodgepodge of routes. Some used a preexisting Native American trail to shuttle people and goods by horse or wagon from Ilwaco on the Columbia to Oysterville, on the Long Beach Peninsula, though only a small and dedicated contingent of visitors attempted this trek. Beginning in 1870, settler Jonathan Stout developed a regular stage line that linked the two towns. From Ilwaco, steamers moved people and goods across the mouth of the Columbia River to Astoria. Meanwhile, on the northern end of the Long Beach Peninsula, steamers brought passengers from wagon roads from the interior Northwest who traveled to Raymond and South Bend at the northeastern head of Willapa Bay, thence traveling by boat to Oysterville or Tokeland. Both options were slow, but introduced a small number of tourists to the golden-sand beaches of southwest Washington. The small town of Tokeland, and the Tokeland Hotel—the oldest hotel still operating in the state of Washington and a National Register property today—were beneficiaries of this early and somewhat cumbersome arrangement.[157] A beachfront resort sitting on a sandspit on the northern entrance of Willapa Bay, immediately adjacent to the Shoalwater Bay Indian Reservation, Tokeland was in some ways improbable as a tourist destination. Yet with the construction of the Tokeland Hotel (originally the Kindred Inn) in 1885 and the development of other tourist facilities, Tokeland briefly thrived. It hosted visitors from the cities of Puget Sound and Portland until rapid erosion washed away sizeable portions of the community and beach a half-century later.

The Ilwaco Railway & Navigation Company (IR&N), also known as the "Clamshell Railroad," soon precipitated dramatic changes in these arrangements. Operating from 1888 to 1930, this narrow gauge railroad was completely isolated from the larger rail networks of the West, making a small circuit between Ilwaco (and later, Megler) on the Columbia and Nahcotta, Washington fronting Willapa Bay on the Long Beach Peninsula. The IR&N was rooted in the operations of a small regional business, the Ilwaco Steam Navigation Company (ISNC). Arriving in the "North Beach" area (the Long Beach Peninsula) in 1872, New York-born Lewis Alfred Loomis was a catalytic partner in this enterprise.[158] After three years in the region, Loomis partnered with Astoria ship captain, J.H.D. Gray, Portland transportation company owner, Jacob Kamm, Pacific County Surveyor, H.S. Gile, and local farmer,

Figure 11.3 – The wagon between the Columbia River estuary and the early beachfront resorts followed a number of different routes, usually including a long beach trek. For a brief time, wagons headed to the Holladay resort met steamships at Fort Clatsop, carrying passengers along a route to the beach, which provided unimpeded passage as far as the Necanicum River (shown here), which could be crossed at low water. Photo courtesy Oregon Historical Society.

John R. Goulter, to form the ISNC. Their company began with a single steamship, the *General Canby*, used to ferry passengers and freight between Ilwaco and Astoria. This steam ship, in combination with Stout's Willapa Bay stage line—recapitalized and redubbed the Loomis Stage Line—effectively provided a regular connection between the Long Beach Peninsula at Oysterville and Astoria. Encouraged by their success, Loomis and his partners expanded their steamship line to provide service to Portland. They founded the Ilwaco Wharf Company to acquire a landing site in that town, allowing them the option of bypassing Astoria altogether.[159] The partnership continued to expand through the following decade, using their direct lines to Ilwaco to secure contracts to deliver mail and a variety of other essential supplies to Ilwaco and the North Beach area of the Long Beach Peninsula (Ott 2011; CPHM 2009; Jessett 1957).[160]

Throughout the 1880s and 1890s, as the IR&N developed its infrastructure, competing transportation companies advanced proposals for rail lines linking the coast and the interior, bringing a surge of land speculation and development even before the proposals came to fruition. In Washington, the Northern Pacific Railroad extended spur lines into Grays Harbor by 1892 and South Bend on Willapa Bay by 1893. The extension of the Northern Pacific line into the head of Willapa Bay—the

only rail line to reach the Columbia-Pacific region by this period—brought a surge of new visitors to the resorts at Tokeland and the northern communities of the Long Beach Peninsula via Oysterville. So too, in Oregon, the Astoria and South Coast Railroad was also making plans for a coastal line south from Astoria to Holladay's Seaside resort, as well as possible links to the Northwestern interior. Loomis, along with ISNC partner Jacob Kamm, recognized that these railroads, entering the region from several directions, posed a threat to their transportation interests on Washington's southwest shore. By 1882, Loomis began to raise capital for the construction of a railway to be integrated into the company's operations, primarily for the transport of mail. Talk of a new railroad on the north side of the river was met with general excitement, and capital was found on both sides of the river. The Daily Morning Astorian reported in December 19, 1883 that, "*the route selected [from Ilwaco to Oysterville] is an excellent one…and it is reasonable to suppose that the 1st of May will see the conductor at Ilwaco sing out 'All aboard for Oysterville!'*"(1883: 3).

In 1884, Loomis commissioned a survey showing feasibility of the railroad project, and by 1887, was able to purchase a right-of-way from Ilwaco to the town of Tinkerville, on the Long Beach Peninsula. Construction began in spring of 1888 and was complete by July of that year.[161] Accounting for the new railroad portion of their business, the ISNC officially changed its name to the Ilwaco Railway & Navigation Company (IR&N) later that summer, with Loomis and Kamm becoming its principal managers (Strack 2013; Becker 2012; Jessett 1988, 1957; Feagans 1972). The town of Oysterville added a number of residential and commercial buildings to its founding core centered on the waterfront oystering business. Reflecting this early history and the integrity of structures still standing from these 19th century developments, Oysterville is now listed on the National Register as a National Historic District.

As in Seaside, the arrival of new transportation linkages to the Columbia River tidewater brought almost instant development in tourism. When Tinkerville founder Henry H. Tinker bought the land claim of Charles Reed at that site in 1880, he was seemingly aware of the potential transportation corridor through this land. Though it was largely sand, pine scrub and grassland, Tinkerville was platted to accommodate a booming city well before the boom occurred, and the arrival of the railroad did not disappoint. Tinker provided a depot site along the tracks, and organized the construction of an ornate hotel nearby. With the arrival of the IR&N railroad in 1888, property values in Tinkerville—today's Long Beach—shot upward, rising from roughly eight dollars per acre to two hundred dollars per acre in a matter of months. The size of the town quadrupled from about one hundred to two hundred cottages between 1892 and 1894.

Later the Tinker Hotel, and ultimately the whole town, was renamed Long Beach, in part to capitalize on the recreational potentials of the community's greatest natural asset— "The Longest Beach in the World" by some estimations. Tinker's hotel and the IR&N depot became the nucleus of a tourist community of cottages, boardwalk shops and hotels that spread from this core, along the tracks and toward the beach, in no small part on Tinker's platted lands. The IR&N too began to capitalize on the budding tourist industry. It promoted summer beach tourism to drum up new business. While the most revolutionary effects of the railroad were seen in the budding tourist towns of the Long Beach Peninsula, the resource industries of the Peninsula also surged with new life. From the initial Ilwaco/Tinkerville line, the IR&N line continued to grow, and by 1889 a narrow gauge line linked Tinkerville and the wharf at Nahcotta, a premier oyster town and port. This Nahcotta terminus provided access to a deep-water channel, affording water access far exceeding that at existing Oysterville docks.[162] The IR&N began to carry large numbers of Willapa Bay oysters from Nahcotta to Ilwaco, where they were shipped aboard the *General Canby* to Astoria. From Astoria, they travelled to the San Francisco market and beyond. In time, canned clams from Ocean Park, as well as logs and cranberries from around the Willapa Bay region, rode the rails of the IR&N (CPHM 2013; Ott 2011 CPHM 2009; Hobbs and Lucero 2005; Jessett 1988, 1957; Feagans 1972).

Figure 11.4 – The tourist community of Tinkerville – later renamed Long Beach – first developed along the railroad tracks. The earliest commercial district, sometimes called "Rubberneck Row," developed alongside the "Clamshell Railroad" depot – visible in the background, circa 1909. Photo courtesy Wikimedia Commons.

By the turn of the century, the "Clamshell Railroad" had become big business, and even more substantial companies took note. In 1900, the Oregon Railway & Navigation Company, with its roots in Holladay's enterprises a generation before, started buying up stock of the IR&N. By 1900 it had purchased a controlling interest in the IR&N. The OR&N retired Loomis and began to modernize and standardize the company's equipment and rail operations, making them consistent with other OR&N operations and adding lumber shipping to the Ilwaco operation. Desiring a deeper, less congested terminus accessible through a wider spectrum of tides, the OR&N determined to move the terminus upstream. In 1906, the company initiated construction on a 13.4-mile

The beaches of the Clatsop County coastline, as envisioned in the early tourism promotional literature developed by the Spokane, Portland and Seattle Railway. Coaxing tourists to visit the beaches, such brochures brought new development to theocean coast while also ensuring a growing clientele for early rail operations connecting the coast to urban areas beyond. Courtesy Washington State Historical Society.

line east, along the north bank of the Columbia River. This linked their rails from Ilwaco Junction, just a mile north of Ilwaco, to a new wharf at Megler—its terminus located at today's NPS Dismal Nitch parking area. First called "Cook's Station," the site was later named "Megler Station," and was briefly among the largest and busiest wharves on the lower Columbia, well-known to early tourists of the Columbia-Pacific region.[163]

The extension of this rail line was no small feat of engineering. It involved the development of new rail grades in the spongy tidal margins of the Columbia River, transforming the waterfront of the Station Camp area and requiring a tunnel to be excavated beneath the military facility at Fort Columbia. (The tunnel is now listed on the National Register of Historic Places as one of several historic tunnels in the state of Washington.) As part of the Company's arrangements to acquire right-of-way for the tunnel, a depot was constructed along the rail line to transport military personnel and goods to the fort above. The costs of this extension seem to have been disruptive to the OR&N. The Ilwaco rail interests were sold and reorganized in the midst of this extension, becoming the "Ilwaco Railroad."[164]

Under new management, and in spite of a number of engineering and financing challenges, the rail line to the Megler wharf was completed by June of 1908. Two years after its completion, in December of 1910, the entire line was acquired along with 15 other small railroads in Oregon, Washington and Idaho, and placed within the Oregon Washington Railroad & Navigation Company (OWRR&N)—an operation ultimately falling under the ownership and management of the Union Pacific Railroad.[165] The consolidation precipitated changing the name of the original Ilwaco Railroad to the Ilwaco Division (and later Ilwaco Branch) of the OWRR&N. In spite of all these changes, service continued more-or-less without interruption through the 1910s and 1920s, with a train terminus, train turntable, and a ferry dock operating at what is today the NPS Dismal Nitch property. They provided access between Washington's southwest coast and the Oregon cities of Portland and Astoria.[166] Certainly there were challenges. Small landslides were common along the steep shoreline, and in the late 1920s a lawsuit erupted when it was determined that the turntable sat on Northern Pacific Railroad lands. Still, this terminus of a 29 mile, three foot gauge railway with no physical connection to any other railroad—the "Clamshell Railroad," as it was affectionately called—became the principal link between the tourists of the greater Portland area and the Peninsula. It ushered in a golden age of rail-based tourism still celebrated by local communities today.[167] The railroad operated according to the tides, rather than an official timetable, as tides

dictated the movement of steamers at either end of its short, but important line. In this capacity, the Ilwaco Railway & Navigation rail was popular among locals and tourists alike, playing an important role in the lumber, oyster and cranberry industries.

Parallel efforts were made to develop railways to the beaches of Clatsop County. After a number of proposals to link Seaside and other Clatsop Plains communities to Columbia River tidewaters, a group of local investors led by D.K. Warren—for whom Warrenton is named—pooled resources to create the "Astoria and South Coast Railway" (A&SCR). This small railroad extended passenger service from steamer docks on the south side of Youngs Bay, a half mile from Skipanon, to the coastal resort towns of Seaside and Warrenton. The original line was completed between 1890 and 1891, beginning an era of rail-based tourism in Gearhart and Seaside.[168] It almost instantly eclipsed the wagon road networks of the northern Clatsop Plains, while largely replicating portions of their routes. Marshall Kinney, founder of the fish transfer station at Megler Cove immediately adjacent to the NPS "Dismal Nitch," was in the vanguard of early real estate activity relating to the arrival of the line. In 1888, he bought out the Phillip Gearhart Donation Land Claim, platting and beginning sales of luxury homesites at "Gearhart Park" at the modern location of

Figure 11.6 – The "Clamshell Railroad" depot and steamship wharf, at the site of today's Dismal Nitch parking area. Operating between 1906 and 1930, this was the primary point of entry for tourists traveling to Pacific County's beaches. Photo courtesy Columbia Pacific Heritage Museum, Ilwaco WA.

Gearhart, Oregon. Anticipating the arrival of the rail line, he developed the Gearhart Hotel, the first hotel of consequence in that community and the nucleus of what would—upon the rail line's arrival—become the resort district as second home owners and hoteliers purchased Kinney's lots adjacent to the hotel.

Meanwhile, Gearhart's son-in-law, Jonathan Stout, carried out a similar rail-based promotional feat on the north side of the Columbia. Acquiring and platting lands three miles north of Ilwaco, the family constructed the "Seaview House," a central institution in what became the community of Seaview. As Hobe Kytr notes,

"*Stout platted his lots fifty-feet wide, and sold them for $25, then $50, and later $100. By the 1880s, numerous families, predominantly from the Portland area, were building unlined, board-and-batten beach cottages. Most of them cost in the range of $200 – $300 to build, unless they were adorned with jigsaw trims. Many of those beach cottages of 1880s and 1890s are still standing today, lending Seaview a kind of timeless charm*" (Kytr n.d.a)

The Stout's hotel soon burned and real estate promotions floundered for a time. Still, the town persisted and the Stouts' daughter and son-in-law built the Shelburne Inn—a landmark hotel still in operation today (Kytr n.d.a).

Over time, landowners adjacent to these early resorts would plat their own lands to capitalize on the new tourist traffic from the urban Northwest—some increasingly oriented toward mass tourism and some, such as Surf Pines with its "almost-palatial homes" catering to affluent Northwesterners (Miller 1958: 115). As Kinney's case suggested, even the rumors of a rail line could bring rampant real estate speculation. There was speculation that the line would be extended further south along the coast, prompting some to acquire (mostly through homestead claims) lands south of Seaside, in places like Cannon Beach and Arch Cape. Many of these lands were promptly platted into small lots and sold in urban markets as recreational real estate in imminent railroad towns (O'Donnell 2003; Paulson 2007; Laubaugh n.d.).[169]

Efforts to build a line linking the short coastal rail line to the Portland area through the Coast Range encountered myriad obstacles. It was quickly bogged down in financial and engineering challenges. With this critical link stalled, the small A&SCR underwent changes in ownership and was ultimately incorporated into the Seashore Road Company. In this new guise, the Company turned its attention to the development of local rail lines, constructing a bridge across Youngs Bay, directly

connecting Astoria to Seaside by rail, as well as extending a branch from Warrenton to Flavel.[170] In April of 1895, industrialist A.B. Hammond organized the Astoria & Columbia Railroad (A&CRR) to organize rail development in the region, in a maneuver that would dwarf and, by 1898, absorb, the efforts of the Seashore Road Company. By 1898, under Hammond's management and with the support of Astoria's civic leadership, the A&CRR completed its rail segment connecting Astoria to Northern Pacific Railway tracks in Goble, Oregon, and signed a 99-year lease with the Northern Pacific guaranteeing access from Goble to Portland. This instantly linked the coast of Clatsop County to the national rail network for the first time. On May 16, 1898, a beach-bound train carried 700 passengers from Portland to Astoria, celebrating the opening of the line (Gordon 2013; Paulson 2007; Miller 1958; ARRPA n.d.).

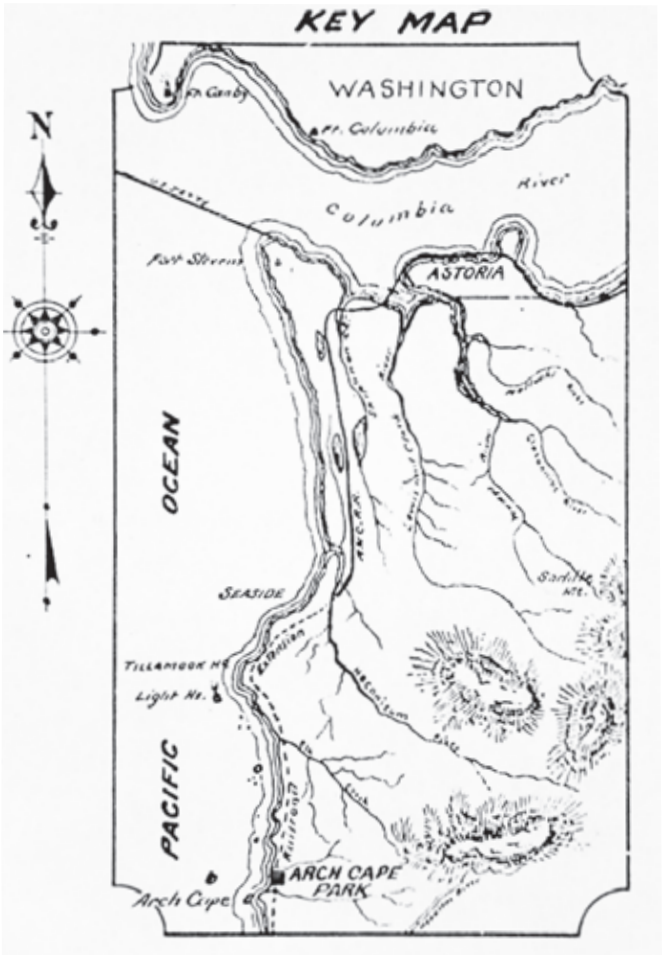


Figure 11.7 – An inset map from the 1908 plat of Arch Cape Park, on the coast of southern Clatsop County – one of several real estate ventures that featured an imagined "Railroad Extension" of the A&CRR tracks over the imposing Tillamook Head cliffs to the elusive beaches south of that headland. Clatsop County Surveyors Office.

In 1911, after changes in ownership, the A&CRR was officially sold to the Spokane, Portland and Seattle Railway (SP&S), which operated the coastal line through its subsidiary, another former Holladay enterprise, the "Oregon Traction Company." In addition to spurring development of the timber industry on the coast and shipping a large quantity of Columbia-Pacific salmon, the SP&S was successful in capitalizing on tourism. It actively promoted the coast's scenery and beach resorts. With SP&S promotion, affluent Portlanders started moving to the coast for the summer season. Working fathers took advantage of the "Daddy Trains," leaving Portland for towns on the coast—Gearhart and Seaside especially—on Saturday and returning for work on Monday. Though the halcyon years of the "Daddy Trains" were the first three decades of the 20th century, the seasonal pattern of coastal tourism persisted in reduced form through the Great Depression (Gordon 2013; ARRPA n.d.).

As suggested by these accounts, coastal rail lines brought with them a flurry of real estate speculation. Long Beach and Gearhart are instructive examples. It's fair to say their experiences set the tone for the entire beachfront of the Columbia-Pacific. Beginning with the rail development of the 1880s and 1890s, owners of large tracts of land on the outer coast rapidly subdivided their properties into small lots. They had observed the success of early rail-side tourist towns, even in places ignored a few years before. In some cases, longtime land owners, realizing the limited value of their land for agriculture, timber and other economic purposes, subdivided land claims to produce potential resort towns; in other cases, people used the Homestead Act and other legal mechanisms to acquire unclaimed lands for development. Very quickly, the unoccupied portions of the outer coast—including much of the Long Beach Peninsula and the beaches of Clatsop County, were divided into a patchwork of hypothetical subdivisions. By the early 20th century, even the wind-blown sands of James Taylor's land claim at Sunset Beach had been subdivided into a fine network of recreational lots oriented toward the beach, encompassing everything west of Sunset Lake.Other portions of the land had been acquired by the Astoria Golf and Country Club, which engaged in ongoing real estate activity in the area (Miller 1958; Mestker 1930; Lockley 1928).

In practice, some of these impromptu towns soon had actual roads and facilities. But more often they existed as hypothetical towns in what were largely undeveloped forest and dune lands. The configuration and even names of each partition were strategically designed, some invoking beach resorts of the eastern United States and event Britain. "Sunset Beach" was among these names, bestowed when land was

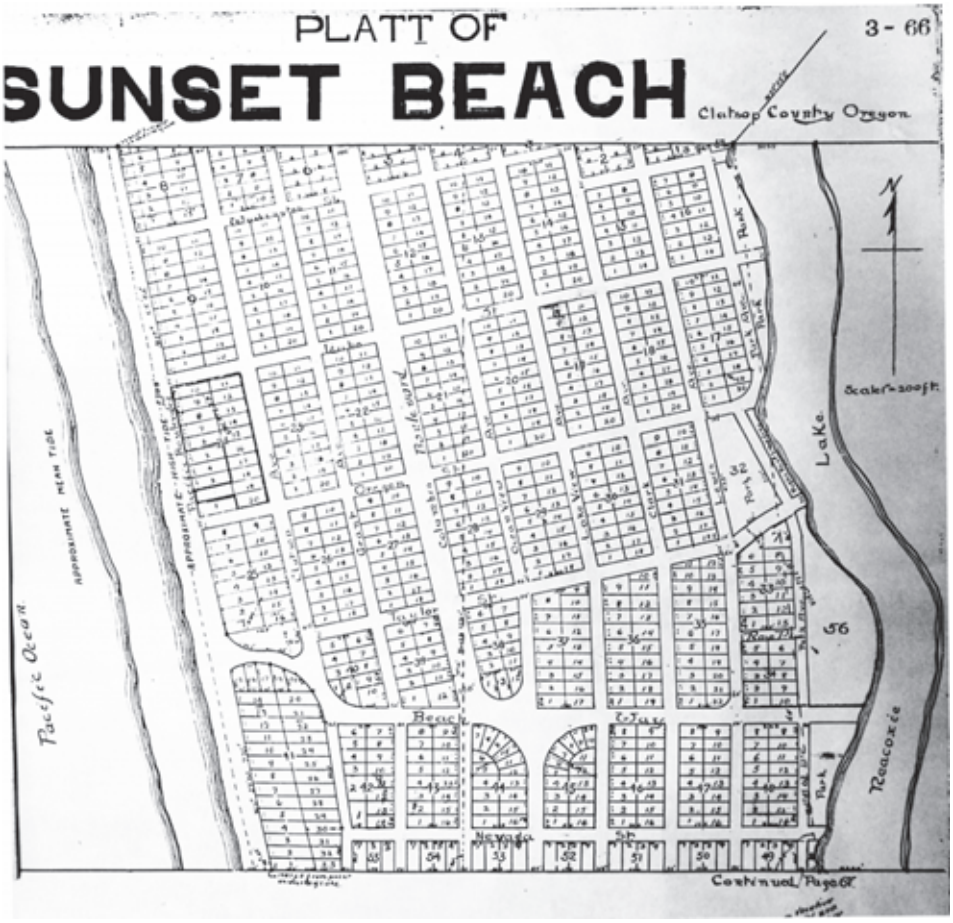


Figure 11.7 – The original plat of Sunset Beach – one of several lining the beachfronts of the region – which laid the foundation for an imagined tourist mecca that now lies partially within the Sunset Beach State Recreation Site, a LEWI park. Wide boulevards lead to the beach and a central commercial district, while streets are named for Lewis, Clark, and 19th century landowner James Taylor. Most of the community was never developed. Clatsop County Surveyors Office.

subdivided for promotion and sale at that location. Lots in such partitions were often configured so many buyers had ocean views from their purchased properties. Streets were sometimes thin but dense to allow a profusion of coveted "corner lots," enhancing the value of the speculative endeavors.

Less scrupulous developers platted lots on unbuildable parts of their property—down cliff faces, into bays, and onto blowing sand fields. As these lots were based of vague maps and often purchased sight-unseen by city people, they created legal

headaches for years to come. (Seen in a certain light, these lots were fanciful: the 50-by-100 foot lots of the initial Seal Rock Beach plat—now Cannon Beach—extended a fine network of lots across unvegetated dunes, onto broad swaths of the beach concealed at high tide, and over Chapman Point's cliff faces. The promotional literature for Seal Rock Beach showed spindly rope bridges linking lots to pavilion overlooks perched atop offshore rocks at what would become Ecola State Park.) Questionable as homesites and ultimately a tax burden for developers or the unfortunate souls who purchased them, the lots often found their way into county or state hands in lieu of tax payments.[171]

Many other partitions—especially those of well-capitalized ventures—featured blocks of lots punctuated by promenades, waterfront parks, greenways, rail-side merchant districts, and many other elements meant to present the hypothetical communities as resort towns. Maps of these grand towns, as imagined and depicted by developers, often accompanied brochures sent to Portland, Seattle, and other urban places as part of land promotion efforts. In truth, surprisingly few of these grand parks, merchant rows, and other features were constructed. Lots developed slowly and haphazardly in many of the platted communities, stalled by events like the Great Depression, but also by the harsh realities of land markets and rough coastal terrain. Still, ironically, the arrangement of these subdivisions continues to shape the configuration of the coast's towns today, with oddly conspicuous gaps in development where grand promenades were once planned, and with densely packed roads with superabundant corner lots, reflecting the unrealized visions of 19th century land promoters. Long after their departure, the land speculators continue to shape the land (Meinig 1999; Reps 1992; MacColl 1976).

Soon enough, the era of rail-based tourism came to an end as automobiles brought an even larger number of tourists, who spread more diffusely along the coast. In spite of a paucity of federal funding, the 1920s witnessed unprecedented highway development along the Oregon and Washington coasts as the state governments sought to improve limited access to these areas. In Oregon, inspired by the "Get Oregon out of the Mud" campaign, highway development leapt forward in the 1910s and 1920s. By 1916, Highway 30, the "Lower Columbia River Highway 2W" ran from Portland to the coast along the Columbia River, almost immediately cutting into the business of the passenger steamer and rail routes along the Columbia. The 1920s also marked a period of dramatic expansion along the Roosevelt Highway lining the Oregon Coast.[172] Similar developments were underway in the state of Washington. By 1923, the state developed new state Highways 9 and 12, linking the Pacific Coast

to the Puget Sound, and by 1926 these were tied to a coastal leg of Highway 101 with connections to the Long Beach Peninsula.

By the Depression era, Work Projects Administration (WPA) funding supported the improvement of several of these older highways, including widening projects and the construction of new bridges, as well as the completion of highway segments leading to the coast. With the aid of federal dollars and WPA labor, a number of key linkages, long anticipated by state and local authorities, were finally completed. By 1937, the state of Washington extended Highway 12B from Ilwaco to the Megler dock, further transforming the shoreline of what are today the Station Camp and NPS Dismal Nitch properties, while converting the Fort Columbia rail tunnel into a passageway for private automobiles. Similarly in the early 1940s, the state of Oregon finished construction of the coastal section of Highway 101 south of Cannon Beach. Originally planned as a low-traffic detour from the main highway, allowing motorists to behold the impressive scenery of Neahkanie Mountain, this soon became a thoroughfare, allowing expeditious travel to the Columbia-Pacific region from the wider Oregon coast.

Launched as a combined CCC and WPA project in 1933, completion of the "Wolf Creek Highway" through the Oregon Coast Range was accelerated to support military mobilizations in 1941. Eventually redubbed the "Sunset Highway," Highway 26 was a fully functioning public highway not long after war's end, allowing what is still the most direct and rapid route of transportation between Portland and the coast. The effects of these highway developments, most occurring over a 20-year span, would be revolutionary, bringing unprecedented opportunities for development even as it undermined old transportation monopolies of steamship and rail (Blakeley 2006; Boardman n.d.).[173]

While the development of so many roads represented good news for beach-bound tourists and coastal resort businesses, they marked the death knell of tourist railroads. Bypassed by the use of personal automobiles, the "Clamshell Railroad" operated at a loss through much of the late 1920s. The Union Pacific added ferry service from the Megler wharf to Astoria by 1927 in an effort to salvage the wharf's operations, even as other companies initiated competing ferry operations. (This effort emerged amidst what was sometimes termed a "ferry war" in the late 1920s, which witnessed the development of several competing ferry operations along the north shore of the Columbia River estuary—not only at the Megler wharf, but on the waterfront of McGowan, at today's Station Camp.) Still, by October of 1929, the Union Pacific applied to the Federal Interstate Commerce Commission (ICC) to

abandon the original Ilwaco Railroad. As explained by the Union Pacific's magazine at the time, "*This historical miniature road, with no physical connection with any other railroad, has outlived its usefulness to the public after 42 years of service [due to] the substantial improvement of main highways"* (Hays 1930: 15). The ICC granted permission by July 12, 1930, and on September 9th of that year the last train rolled down the narrow gauge Ilwaco Branch to the Megler terminal. Almost immediately, the land and right-of-way were sold, in part to help offset the railroad's considerable losses. The site would be converted to a ferry wharf, allowing automobile traffic to and from Astoria—a function that continued until July of 1966 when the Megler Bridge was completed.[174]

Figure 11.8 - The arrival of highway access transformed the nature of tourism, allowing unprecedented access to different parts of the coastline – such as Beard's Hollow, near the northwestern base of Cape Disappointment – to an unprecedented number of people.

Almost all of the railroad wharf infrastructure was demolished through the 20th century, with the construction of Highway 12B and the development of a Washington Department of Transportation wayside at the site. The Seaside spur of the SP&S line fared little better. In spite of a slightly longer lifespan—thanks to rail connections to the urban Northwest and a host of "Daddy Train" loyalists—this line was eventually discontinued by 1952. The rail line was ultimately sold to Portland & Western Railroad, and much of the railroad and its tracks were decommissioned in the decades that followed.[175] In Seaside, the former rail grade has recently been redeveloped into a public trail and park. So too, the City of Astoria has recently

Figure 11.9 – The Fort Clatsop replica, based on William Clark's sketches, became a popular historical tourist attraction almost immediately after its construction in 1955. The original replica burned to the ground in an accidental fire in late 2005, prompting the development of a new replica on the site in early 2006. Photo courtesy Oregon Historical Society.

overseen the redevelopment of its waterfront portion of the SP&S track as a tourist destination, complete with passenger trolley service in the downtown waterfront area (Strack 2013; Ott 2011; WADAHP 2010; CPHM 2009; Leahy 2005; Bonham 1991; Jessett 1988, 1957; Feagans 1972; Shaw et al 1949; Hays 1930).

The decline and ultimate disappearance of the tourist railroads had diverse effects on the character of the tourist towns in the Columbia-Pacific region. As business had been in decline, each of the local railways made efforts to expand their markets. Not only were fares reduced, but the companies increasingly sought to market coastal tourist destinations beyond the affluent clients who had been their mainstay. The commercial districts at the terminal ends of these rail lines—Seaside and Long Beach, especially, so dependent on rail-based tourism—developed shops and services to cater to middle-class beachgoers who had traditionally been overlooked by tourism boosters of the 19th century. As rail-based tourism largely disappeared, and an increasingly diverse range of tourists came to the coast on new highways, these two towns were well-suited to capture a broad segment of the

tourist market, a trend that only intensified as middle-class Portlanders flocked to the coast in unprecedented numbers after World War II. In contrast, communities like Gearhart and Cannon Beach increasingly became second-home communities to affluent Portlanders, who sometimes actively resisted these populist models of tourist development. At times they sought to limit the scale and character of tourism-oriented development. These patterns of development and tourism, rooted in the 19th century history of the coast, are still somewhat apparent in differences between the communities today.

The arrival of so many tourists along the shoreline of the Columbia-Pacific region in the early 20th century had diverse impacts on the process of park-making, contributing in time to the formation of Lewis and Clark National and State Historical Parks. Certainly, the idea of creating a historical park or monument at Fort Clatsop had been longstanding. As noted elsewhere, visitors to the Columbia-Pacific sometimes set out on impromptu historical tours in search of the fort during the 19th century. The growing accessibility of the coast, however, coupled with growing regional interest in the commemoration of Pacific Northwest history, lent this effort new urgency. In 1899, the newly formed Oregon Historical Society dispatched a team led by Olin Wheeler, and including Portland lawyer and Chief Coboway's grandson, Silas Smith, to locate the Fort Clatsop site, the Seaside salt cairn, and other sites central to the Lewis and Clark expedition. Community support for some sort of commemorative treatment, and even acquisition of the site, was increasingly strong. As P.W. Gillette, a frequent proponent of this idea, observed:

"I believe the state of Oregon should possess herself of Fort Clatsop, and keep it forever in commemoration of the spot on which the flag of the United States was first planted on the Pacific coast, and of that marvelous exploration of Lewis and Clark which did so much to establish our claim and secure to the United States this vast Northwestern empire" (Gillette 1900a).

The team was able to interview local residents about the location of sites from the Lewis and Clark expedition, including Jennie Michel, the Clatsop elder who identified the Salt Works site. In time, these efforts led to the gradual public acquisition of both the Fort and the Salt Works sites, beginning with a 1928 purchase of Fort Clatsop lands by the Oregon Historical Society and leading to National Monument status in 1958.[176] In 1955, to mark the sesquicentennial of the Corps of Discovery, a coalition of volunteers constructed a replica of the original fort, and the

Lions Club constructed a replica of the Salt Works, both based on William Clark's journal sketches (Daily Astorian 2007; Brown 2006; Cannon 1995).[177]

Yet surprisingly early in the history of the coast, efforts were underway to create parks based on natural and scenic values—a trend that would reshape the region over the 20th century. Admittedly, many of these earliest conservation and park-creation efforts did not fully come to fruition. Prominent among these was a popular effort in the early 20th century to declare Saddle Mountain a national park, well before that mountain's incorporation into a park of any kind.[178] Inspired by the recent creation of national parks surrounding other prominent landmarks in the West, such as Crater Lake (designated as a national park in 1902), a number of Clatsop County residents, including many promoters of tourism, actively advocated for such status for the highest peak in the Columbia-Pacific region. Supporters pointed to the mountain's stunning views of the Pacific Ocean and mouth of the Columbia River, as well as their desire to preserve examples of ancient forest at the mountain's base at a time when timber speculators moved into interior lands. Some interests—hunters among them—also advocated the park as a permanent reserve for deer and elk, believed to be imperiled in this rapidly developing corner of Oregon.[179] The land had few competing uses at the time, and civic organizations from many parts of northwestern Oregon supported the concept, in part due to its potential to spur tourist-based economic development. This was a progressive position that gained a foothold on Oregon's north coast even before the 1916 creation of the National Park Service. The Oregon congressional delegation agreed. Together these interests worked as a united front to promote the creation of a national park.

As a first step to park creation, proponents succeeded in November 1908 in getting the unappropriated lands around Saddle Mountain temporarily withdrawn from the public domain. Bills to establish the park on the 1,920 acre withdrawal were successfully passed by the United States Senate in 1909 and 1910, but foundered in the House Committee on Public Lands both times—in part because of uncertainties regarding funding for park access and maintenance.[180] With changes made to address these concerns, Senator George Chamberlain of Oregon introduced another national park bill for Saddle Mountain in 1912, which passed the Senate but again died in the House.[181] Still undeterred, Chamberlain introduced yet another bill in March 1913 that met the same fate.[182] At this point, park supporters faced a lapse of the temporary land withdrawal. On behalf of the national park concept, however, President Woodrow Wilson intervened, renewing the withdrawal by executive order so Chamberlain and other members of the Northwestern congressional delegation

could try again. Still faced with an intransigent House, Chamberlain amended the bill authorizing establishment of Saddle Mountain National Park to one granting land for a park to the state in March 1914.[183] Not only did this bill attract support from a number of civic organizations in Clatsop County, as with previous bills, but also from the Oregon Geographic Names Board, which drafted an open letter of support signed by its president W.G. Steel, the founder and superintendent of Crater Lake National Park. Among the proposed park's many benefits, Steel predicted, was that trees embraced by the grant "*will assist in reforesting the great areas which have been, or will be, denuded by the lumbermen and fires*" (Oregon Journal 1914).

Chamberlain's bill of 1914 also failed. Within a week of Chamberlain introducing the legislation, a business partner of A.B. Hammond—Mr. A.M. Smith, an investor publicly implicated in the Oregon railroad grant land frauds a decade or so earlier- came forward with land scrip from the Northern Pacific Railroad grant of 1864. Smith wrote to the federal government's General Land Office informing them that, with this scrip, he had acquired rights to unsurveyed lands on Saddle Mountain from the Northern Pacific for $2,500.[184] This left the federal government with only 802 acres of the original grant. The land was ultimately transferred to the state of Oregon through a bill passed by Congress on August 11, 1916 (Armstrong 1965: 182). Oregon hadn't reserved or operated any state parks up to this time. And instead of developing the site, the land grant lay fallow with the State Land Board, even after the Northern Pacific "donated" another 600 acres of rocky land near the mountain for park purposes.[185] Establishment of Saddle Mountain State Park did not come about until private parties made another donation of 1,280 acres in November 1928.[186] Their donation went to the Oregon State Highway Commission, which possessed authority to acquire and develop parks for the traveling public, despite the land being over seven miles from the nearest highway (Merriam 1992: 219-20; Armstrong 1965: 128; Portland Oregonian 1928).

The setting aside of Saddle Mountain lands came just prior to appointment of a full-time state parks superintendent for all of Oregon, Samuel Boardman. With highway commission support, Boardman eventually orchestrated the transfer of the 1,400 acre grant from the State Land Board in December 1935 after having initiated park development by the Civilian Conservation Corps. The park has never been included within the NPS umbrella, but is clearly linked to the history of LEWI parks in many ways. It may yet be integrated into the interpretive mandates of these parks (Merriam 1992: 219-20; Armstrong 1965: 128; Portland Oregonian 1928).[187]

Other park concepts soon followed as visitors became more familiar with the scenic opportunities and challenges of the coast. Among the consequences of road development into the Columbia-Pacific region was that "negative externalities" of resource extraction became more visible to visitors and policymakers. This included a growing number of individuals with no direct personal interests in local natural resource industries. Ironically, this would lead to the launching of one of the nation's premier state park systems. In late summer of 1919, Assistant Secretary of the Interior and National Park Service Director, Stephen Mather, and his ally in national conservation efforts, Madison Grant, petitioned Oregon's governor, Ben Olcott, to consider the advantages of developing a state park program. Olcott remained unconvinced. Yet as retold by Thomas Cox in his book, *The Park Builders*, a trip to Clatsop County, just east of today's Ecola State Park, transformed Olcott's position on the matter:

"*a trip to the coast did for Ben Olcott what Mather and Grant had been unable to do, and new life surged into the movement. Olcott, who was deeply interested in the state's developing highway system, had journeyed across the Coast Range to inspect the Cannon Beach-Seaside road (later U.S. 101).Crown-Willamette Paper Company was logging the dense virgin forest that flanked the route, and the scarred, barren hills left at roadside shocked the state's chief executive. On his return to Salem, Olcott wrote to William Pierce Johnson, president of Crown-Willamette, and urged that his firm hold off cutting timber alongside the Cannon Beach-Seaside road until equitable arrangements could be made for its preservation. Johnson's reply expressed general agreement with Olcott's desire to maintain roadside beauty. The correspondence, released to the press by the governor's office, received wide circulation*" (Cox 1988: 36).

Governor Olcott's comments on the issue were bold for the times:

"The preservation of forest beauties is a matter of deep concern to the lumber industry. And it is not my intention or wish to deprive private owners of valuable lands of those things which they have acquired by rightful and legal process. This move is not backed by socialistic intent, now any propaganda to disturb the progress of an industry. Rather, I find the timber owners generally eager and willing to cooperate. But it would be wrong to ask them to surrender vast tracts of valuable timberlands without just compensation, nor do I believe it could be done. In fact, vast tracts are not needed to carry this plan to fruition. Isolated tracts tucked away in pretty nooks; virgin stretches of forest along highways, to be retained of sufficient width to leave the beauties of the landscapes unimpaired; new plantings of trees, shrubberies and foliage along the highways, all of these things can be accommodated without too great expense and without arbitrary confiscation of property...

Figure 11.10 – Bradley State Wayside, overlooking the Columbia River, in the 1920s – one of the scenic byways developed along Oregon State Highway 30 as part of the early roadside beautification efforts. Overseen by the Oregon State Highway Department this effort would evolve to become the Oregon State Park system. Roadside beautification initiatives for the Columbia River corridor, launched by such figures as John B. Yeon, would set a precedent for coastal highway and park development in the decades that followed. Photo courtesy Oregon Historical Society.

"This matter should not be cast lightly aside. While the hand of man has done much and is doing much to make Oregon a great state, the hand of God fashioned here in the primeval wilderness an ideal earthly paradise which we must preserve as nearly intact as possible without impeding the ordinary progress of civilization" (Olcott 1921).

The Governor launched a successful bill to develop what became the Oregon state park system, under the direction of the state's Highway Department. He hired a special committee to investigate the issue. Among the members of this new board were real estate investor, L.A. Lewis (who would later sell a portion of his holdings to create Ecola State Park) and Mary Kinney (whose brother-in-law founded the fish transfer station at the NPS Dismal Nitch, platted Gearhart, and many other things) (Olcott 1921).[188] The Highway Commission was supportive (indeed, Commission member and prominent lumberman Simon Benson proposed going well beyond the

board's modest proposals, advocating the condemnation of roadside timberlands to preserve Oregon's scenic beauty).Based on Olcott's efforts and his reaction to Clatsop County logging, the Oregon State park system was born, starting as a widely supported roadside beautification movement centered on the preservation of roadside scenery and the development of waysides along the rapidly expanding state highway system (Oregon State Planning Board 1938).[189] In time, an Oregon Highway Department wayside designer and roadside tree planter from east of the Cascade Range—Samuel Boardman—was hired to oversee the small division of the department that would eventually become Oregon State Parks.[190]

Among all of the parks within the LEWI umbrella, Ecola was the site most clearly protected for scenic reasons, with the considerable involvement of Boardman. Ecola was in many respects the culmination of forces set in motion by governor Olcott's park-making initiative. Certainly, the scenic values of the rugged Ecola shoreline had long been appreciated by travelers along this coast, including William Clark, who beheld there "*the grandest and most pleasing prospects which my eyes ever surveyed*," and 19th century figures such as P.W. Gillette, who remarked that he "*was delighted with the scenery along the beach. High mountains of rocks projecting in the ocean—magnificent—and pyramids of rock standing in the sea, beautiful works of Neptune and home to sea fowls*" (Gillette n.d. – July 8, 1863). Collaborating with beneficent land owners in the late 1920s and early 1930s, Boardman saw the potential of the place to become, in his terms, one of the "crown jewels" of Oregon's new park system.

The families instrumental in the process—the Glisan, Flanders, Minott and Lewis families—were in fact a tight circle of extended family and friends. All were members of "Portland society," the men of the group having been part of the Portland Chamber of Commerce and other civic institutions. Most were also part of the prominent Couch, Glisan, and Flanders families—pioneer settlers and benefactors of early Portland—for whom streets are still named in the center of the city.[191] This extended family had acquired title to the shoreline from Indian Beach to the vicinity of Chapman Point—lands formerly set aside as U.S. lighthouse reserve land. Though temporarily occupied with a few small lifesaving structures, it was declared surplus and made available for private purchase after the completion of the Tillamook Rock lighthouse in the late 19th century. The families acquired the land and developed grand ocean-view homes at Ecola Point by the beginning of the 20th century, very near today's principal parking lot at Ecola State Park, and in the early years of the 19th century, the homes served as bases of operations for considerable

Figure 11.11 – An early Oregon State Park image of Ecola State Park as seen from Ecola Point – the location of the park donors' homes prior to the creation of the park in 1932. The Civilian Conservation Corps developed trails and other facilities in the decade that followed. Photo courtesy Oregon Historical Society.

adventuring and exploration along the northern Oregon coast (O'Donnell 2006; Glisan 1909; Gainor Minott pers. comm. 2009). [192]

The involvement of the families in the creation of Ecola State Park represented a striking early example of private philanthropic efforts in land conservation for the public good. Amply wealthy, guided by strong family traditions of philanthropy and *noblesse oblige*—a likely consequence of witnessing the Great Depression, and having acquired the land from the public trust only a few decades before, the families resolved to give their lands as a park to the citizens of Oregon. Representatives of each family—Florence Glisan Minott, Caroline and Louise Flanders, L.A. Lewis, and Rodney Glisan—placed their holdings in common, creating the "Ecola Point and Indian Beach Corporation," with the intention of donating the shared lands to the new state parks system. They agreed to give up impressive Ecola Point beach homes to do so. Negotiating on behalf of the group was the celebrated outdoorsman and

civic activist, Rodney Glisan. A Portland based attorney, Glisan was an energizing representative of the group. As a former city council President, he'd also been active in the Portland Rowing Club, the Mazamas and other mountaineering organizations, and many other Northwest civic and conservation organizations of the early 20th century.

Guided by similar visions and values, Glisan and Boardman developed a congenial professional relationship that fostered a smooth and constructive negotiation of terms. Together, all parties agreed to transfer most of the families' holdings, representing the initial 451-acre core of Ecola State Park, from its southern boundary to Indian Beach. The extended family consisting of the Glisans, Minotts and Flanders agreed to donate their land outright, though Lewis, a longtime real estate investor in rapidly declining health, opted to sell rather than donate his share in the company. They agreed to have their own homes dismantled to make way for public facilities in the park's core. In exchange, the families retained tracts for their personal use on the southern end of the park, building new second homes above Crescent Beach and Chapman Point. Boardman agreed that the park would maintain trails and utility access for the benefit of these families. Clearly touched by their sacrifice for the public good, Boardman also worked independently to build a stone monument, still visible in the park today, commemorating the generosity of the families (Merriam 1992: 175-77).[193] Ecola State Park became an Oregon state park—one of the most visible and popular in the Pacific Northwest—in 1932, only two years before Glisan's unexpected death. As summarized by Samuel Boardman,

"*The 450-acre nucleus of Ecola State Park came through the gifts and purchase of the Ecola Point and Indian Beach Corporation of which Rodney L. Glisan, Florence G. Minott, Caroline Flanders and Louise Flanders owned forty-nine percent of the stock and L.A. Lewis, fifty-one percent. The first four gave, without solicitation, their share of the 450 acres which included substantial summer homes. To Mr. Lewis the state paid $17,500 for his share. We have had many gifts of a recreational nature, but never one that so involved pure sacrifice of such a beautiful setting and lovely homes. Would that every visitor could know of the origin of the park through the generosity of Mr. Glisan, Mrs. Minott and the Misses Flanders*" (Boardman 1956).

Having secured this donation, Boardman promptly began his efforts to both develop and expand the park, spurred on by local civic and tourist interests, as well as the support of entities such as the State Planning Board. Support for park expansion was remarkably popular among the newspapers and civic organizations of the day, who

arguably saw no comparable competing economic uses of this rugged headland—least of all at the height of the Depression—and viewed the preservation of Tillamook Head as contributing to the growing tourist economies of the towns at its base. As the Oregon Planning Board (1934) noted, Tillamook Head was "*a scenic feature upon which much of the property values and resort patronage of these communities have been indirectly predicated.*"[194] In addition to reaching out to private timber interests regarding possible land sales adjacent to the donated core of the park, Boardman began negotiating for Oregon State Park acquisition of the former lighthouse reservation lands at the summit of Tillamook Head. These plans were temporarily put on hold when the lands were put into military use at the onset of World War II (Boardman 1956, n.d.).

The Great Depression would be critical to the formation of the early Oregon park system. Land values were depressed, allowing Boardman to begin acquiring park lands from enthusiastic sellers and agencies in possession of defaulted properties. Oswald West State Park, portions of Saddle Mountain State Park, and other Clatsop County state park lands were secured in this context. Moreover, during the height of the Great Depression, the Civilian Conservation Corps played a vital role in reshaping most of the units of what is today Lewis and Clark National and State Historical Parks. CCC crews helped transform the land at the military facilities on both sides of the river, improving roads at Cape Disappointment, but also planting European beach grass and other dune stabilizing vegetation at that facility, at Fort Stevens, and along the shoreline of what would become Sunset Beach State Recreation Site. In turn, the CCC directed their attention to Ecola State Park and Saddle Mountain State Park.[195] With Boardman's intercession, CCC camps were built at both parks to support these efforts. At Ecola State Park, the crews participated in several deployments between 1934 and 1941, constructing trails or maintaining historic ones, developing the park road from Cannon Beach, constructing barbeque pits of local beach stone, and building picnic tables and caretakers' buildings (Armstrong 1965; Tilden 1962; Boardman 1956, n.d.). Regrettably, a massive 125-acre landslide largely obliterated the core CCC-constructed facilities in 1961. The remaining CCC-era infrastructure was not maintained with attention to historical significance, so little remains of CCC's legacy in Ecola's landscape.[196]

Environmental conservation measures came in other forms during the Depression, including the development of National Wildlife Refuges in the Columbia-Pacific region. The region was (and remains) rich in wildlife, with sea mammals and birds both breeding in and migrating through the coastal zone. In Oregon, the boldest refuge concept of the Depression centered on the development of the Oregon

Islands National Wildlife Refuge. This effort was inspired in no small part by the development of the Three Arch Rocks refuge a generation earlier. At these offshore rocks, located in nearby Tillamook County, photographers William Finley and Herman Bohlman witnessed the wanton shooting of seabirds for plumes and for sport, and the commercial harvesting of sea lions and bird eggs. Inspired by Finley and Bohlman's efforts, Theodore Roosevelt arranged for the protection of these rocks in 1907. And in 1935, inspired by Teddy Roosevelt's example, Franklin D. Roosevelt agreed to extend protections to all islands and offshore rocks along the 320-mile-long coast of Oregon, creating Oregon Islands National Wildlife Refuge by executive order. In Clatsop County, this new refuge encompassed the rocks immediately offshore from Ecola State Park (the Tillamook Head, Ecola Point and Bird Rocks) as well as Castle Rock in Arch Cape. (In 1978, the Oregon Islands National Wildlife Refuge became a designated wilderness area under the Wilderness Act.)[197]

In Willapa Bay, with its sprawling intertidal areas, visited by an impressive diversity of shorebirds and migratory waterfowl, Roosevelt saw other opportunities for preservation. Employing the provisions of the Migratory Bird Treaty Act of 1918, Roosevelt authorized the purchase of Willapa Bay lands for bird conservation with money raised by the Migratory Bird Hunting Stamp Act of 1934. In 1937, he signed the executive order authorizing the Willapa Harbor Migratory Bird Refuge. Expanded in the late 1960s and early 1970s as part of the nationwide conservation movement, this refuge managed lands on Leadbetter Point, on the northern end of the Long Beach Peninsula, as well as two refuges protecting intertidal marshes on the lower Columbia estuary: Lewis and Clark National Wildlife Refuge and the Julia Butler Hansen National Wildlife Refuge. The broader refuge was renamed the Willapa National Wildlife Refuge. All of the wildlife refuges are managed today by the U.S. Fish and Wildlife Service (Wilson 2010; Mathewson 1987).[198]

Other effects of the Great Depression would reconfigure the tourist landscapes of the Columbia-Pacific. In beach towns founded or platted in the optimistic years of the late 19th and early 20th centuries, community dreams of a Columbia-Pacific tourist mecca stalled. Through the Great Depression, tourism did persist, but feebly. And even as the economy rebounded in the World War II era, wartime gas rationing and the militarization of the waterfront prevented a sizeable number of potential tourists from traveling to the beach. Though the development of roads to the coast allowed unprecedented access, many of the region's tourist towns lingered in suspended animation from the late 1920s through the 1940s. Their economies and main-street landscapes were funkier than any real estate promotion could have

Figure 11.12 – After the decline of tourism through the Great Depression and World War II, tourists effectively rediscovered the ocean coast in the post-War era, with newfound affluence and a highway system significantly upgraded in intervening years by WPA and military efforts. These visitors to the Washington coast stand near Beard's Hollow, with Cape Disappointment in the background. Photo courtesy Oregon Historical Society.

anticipated. The end of World War II did, however, bring an abrupt rebound. Returning soldiers and their "baby boom" families began to explore the coast with renewed interest and affluence. Automotive traffic on the coast skyrocketed, more than doubling its wartime totals by the end of the 1940s. And it has steadily increased ever since (Deur 1994).

The surge in automotive tourism stoked interest in state and national park development on the coast. The decommissioning of U.S. military sites at the end of World War II presented a unique opportunity to accommodate that interest, ultimately playing a critical role in the development of network of federal and state lands representing today's Lewis and Clark National and State Parks. Almost all of Cape Disappointment State Park, Fort Columbia State Park, and Fort Stevens State Park, as well as portions of Ecola State Park, became parks as part of this abrupt conversion of lands. In 1947 the U.S. Army announced that the cornerstone military facilities at the mouth of the Columbia were obsolete, bypassed by the rapidly developing military technologies of the time. So at the conclusion of World War II,

the U.S. War Assets Administration (replaced by the U.S. General Services Administration [GSA] in 1949) was responsible for disposing of the properties. The communities at the mouth of the Columbia, having watched for decades the forts' struggle to upgrade facilities with limited success, weren't surprised by these developments. They generally supported the conversion of military lands to park use.

By the late 1940s, slow but ongoing discussions took place between the federal government and Washington State Parks regarding acquisition of the Washington military forts for use as state parks. In contrast to Oregon's breakneck pace of park development in pre-war years, Washington's pre-war state park system was relatively modest. But a period of rapid expansion commenced post-war, prompted in part by the surge in automotive tourism. The Washington system was lean and increasingly eager to add sites like Cape Disappointment and Fort Columbia to their holdings—especially in the southwestern corner of the state, which represented a veritable "black hole" in the park system up to that time.

In many respects, the park's nascent status simplified the process of acquisition of surplus military lands, which occurred in a rather bureaucratic "slow motion transfer," with little objection or fanfare. Local governments, newspapers, and nonprofits had lobbied for park acquisition of the lands since 1947 when they were declared surplus, spurred along by eager promotion of Fort Stevens on the south side of the river. In March of 1950 Washington State Parks was approached by the GSA about the availability of lands at Fort Columbia. The Washington State Park Commission agreed to sign the transfer agreement, and in June of that year, the Commission accepted the property as a State Park. Several land transfers were involved. The first deed to the property was signed in June of 1950, and in June of 1954, the Commission dedicated the museum in the barracks, signing another deed transferring portions of land. A final land transfer from the GSA was approved by the Commission in May of 1958 and the third (and apparently final) deed was signed in June, 1958. It wasn't until the late 1960s that Washington State Parks added visitor facilities to the park (Alex McMurry, pers. comm. 2013; Louter 2010; Cox 1988; Hoyt et al. 1949; Boardman n.d.).[199]

The acquisition of Fort Canby, while a bit more complex due to the site's many historical uses, followed similar lines. In 1957 an initial deed to the State of Washington from the GSA was signed, transferring portions of the fort property to the state, and a series of subsequent deeds were signed through the 1960s, reflecting the complex pattern of ownership at Cape Disappointment. Through this process,

the state acquired park lands on the northern part of the cape, as well as a strip extending west. The federal government, not wanting to depart with strategic lands and assets, retained a portion of the headland, transferring ownership to the Bureau of Land Management (BLM). The BLM, in turn, allowed for a long-term lease to the State of Washington for park use. The Army Corps of Engineers retained the southern portion of the Cape, including the Columbia's north jetty and adjacent beaches, but allowed these lands to be managed as part of the new state park. Land transfers have continued into recent times, with no less than 16 different parcels, involving 11 state, federal, or local government agencies! All have contributed to the expansion and consolidation of the park. Washington State Parks did not develop visitor infrastructure at the site until roughly 1966 (Alex McMurry, pers. comm. 2013).

The acquisition of Fort Stevens, while initiated sooner than the Washington proposals, did not go smoothly. By 1946, well before the GSA formally announced Fort Stevens' availability, Sam Boardman started petitioning for acquisition of the fort by Oregon State Parks. As he observed in an early report on the matter, "*The idea of converting this former military reservation into an Oregon state park has much to commend it. The site itself is historic, in surroundings that are identified with the earliest written history of the Northwest…there is a wide choice of buildings for any and all needed park purposes, and ample cleared land for further development or the installation of any specialized park features…If surf bathing is desired, there is a splendid beach on the outside of the spit*" (Boardman 1947: 6-7). As with Cape Disappointment, the proposed park contained a complex patchwork of federal, state, and county land ownerships, as well as a garbled pattern of land ownership from the accretion of new lands for jetty construction in the late 19th century. Newspapers and civic organizations of the northern Oregon coast were soundly behind the proposal, actively lobbying the state government and Oregon's congressional delegation for the transfer of the fort to state park use. Prominent voices included the Astoria Chamber of Commerce, the Warrenton Grange, Kiwanis Clubs, the editors of the Astoria Daily Budget and the Oregonian, among many others. The State Highway Commission, whose approval was required for all new park acquisitions, did not agree. Overwhelmed by Boardman's ambitious park-building efforts of the last two decades, seemingly wary of the gargantuan maintenance responsibilities associated with the old facilities, and unclear on the fort's public value, the Commission rejected Boardman's proposals to acquire the land—not once but twice. Moreover, matters of ownership were complex: the Army Corps of Engineers still wanted to retain facilities and access rights as inholdings in the proposed park, and it was unclear whether the federal government would relinquish control to such a strategically

sensitive location. The GSA abandoned the idea of a simple transfer of the properties to Oregon State Parks and by 1949, was appraising the fort property for possible sale at auction.

But even after Boardman's death, state negotiations continued. The City of Hammond, supportive of a park proposal and concerned about alternative uses of the land, stepped in. It sought to acquire lands on the town's borders that were available for sale from the GSA. And by the mid-1950s Hammond transferred key portions of the fort to the state for park use. In the 1950s Clatsop County also transferred lands to the State of Oregon to augment the proposed park. (This complex land transfer history produced a patchwork of ownerships that persists to this day, with private ownership of historical fort houses, and late-20th century subdivisions sitting a stone's throw from facilities like Battery Clark.) As at Cape Disappointment, the federal government opted to retain a large portion of Fort Stevens, though the State of Oregon was able to secure a long-term lease for development of the state park at the fort. In turn, various state and county lands on the perimeter of the federal lands were transferred to expand the park's margins. The Army Corps of Engineers retained the areas adjacent to the south jetty, but eventually agreed to provide enduring recreational access to the jetty and other Corps lands as part of the larger park. Consequently the State of Oregon began its own dune stabilization efforts on the cape, and by the late 1950s, was developing new tourist facilities on the former fort site (Merriam 1992; Boardman 1956, n.d.).[200]

The Oregon State Highway Commission was more sympathetic to Boardman's efforts to acquire the surplus radar station and adjacent lands on the top of Tillamook Head. These were especially scenic properties, contiguous with an existing state park at Ecola. Boardman's efforts to acquire the surplus government property prior to the war established a precedent, and the transaction was completed with relative ease following federal disposal of the properties. Less than a year after the end of World War II, Boardman notified the War Assets Administration of the state's interest in acquiring the lands on top of Tillamook Head: "*Lot 3 would give control of the Head proper to the state and facilitate the future recreational development of the area. I desire to file an application for the aforementioned lot 3 if and when it becomes surplus property*" (Boardman 1946).

In March 1948 the Seattle Regional Office of the War Assets Administration declared Tillamook Head AWS to be surplus property (Fanflik 1948). However, the action was withdrawn the following month by the Office of the District Engineer of the War Department, "*in view of the continued need for the Tillamook Head Radar Site J-23,*

Oregon by the Department of the Air Force." All lands and facilities of Tillamook Head AWS were restored to active status under the jurisdiction of the Air Force (Hoffman 1948). But in 1951 the state made another attempt to acquire Tillamook Head AWS when the Oregon State Highway Commission filed an application for surplus property with a justification for priority transfer based on the lot's intended use as a "*public park, public recreational area and/or historical monument*" (Oregon State Highway Commission 1951). This time the state was successful, buying one lot in 1952, which included 50 acres of fee-owned land, 45.79 acres of easement, 17 buildings, and utilities. The purchase price of $2,195—half the fair market value—reflected the "50 percent public benefit allowance" allowed by the War Assets Administration and its successor GSA (War Assets Administration 1952). At the same time, Boardman negotiated with Crown Zellerbach for the sale of adjacent timber lands to the park, including portions leased to the federal government as part of the radar station. By the end of that decade, he had achieved his minimal vision for Ecola State Park, having acquired the outer arc of Tillamook Head from Crescent Beach to the southern edge of Seaside for the State of Oregon. Boardman noted to Fred Andrus of the Astorian Budget newspaper that he wanted to expand the park

Figure 11.13 – Sitting a short distance west of Megler, and today's bridge terminus, "Derbyville" was a popular place for recreational fishermen in the post-War period. Salmon fishing derbies, held annually at this location, were the source of the name. Photo courtesy Columbia Pacific Heritage Museum.

further, but negotiations with Crown Zellerbach had stalled: "*I needed more but the Corporation wouldn't sell. I have my foot in the door and we can press to the east at some later date.*"[201]

Throughout the mid-20th century, and into its later decades, tourism rebounded in the beachfront towns of the coast. In places, the success of beach-based tourism actually matched the visions of early town promoters, but was driven not by rail access, but automotive access—especially for those making brief trips by highway from the metropolitan areas of Portland, Seattle, and even Vancouver, B.C. A number of communities experienced a revitalization of their old downtowns, with their rail lines long ago dismantled, their highways often rerouted with the inadvertent effect of producing low-traffic pedestrian districts set amid vintage buildings.In an effort to match tourist expectations and create a certain coastal archetype, many communities refashioned their commercial districts using New England-themed coastal architecture and an abundance of nature imagery in signage (Deur 1994). In certain settings, residential architects experimented with these themes, integrating native woods into buildings, adopting New England-style elements or rustic lodge architecture, and nestling homes more sympathetically into the coastal landscapes.

A major catalyst for this effort in architectural circles was John Yeon, a celebrity Portland architect and son of timber magnate and philanthropist, John B. Yeon (who, among many other accomplishments, was a leading figure in the development of the parks and scenic byways of the Columbia River Highway in the Columbia Gorge). Through the mid-20th century, John Yeon acquired parcels of land in the Columbia-Pacific region with the intention of developing showcase houses that capitalized on native architectural movements, developing a regionally distinctive Northwest-modernist style that sought to integrate residential structures into their natural surroundings.[202] One of the parcels he acquired for this purpose included Chapman Point and the adjacent dunes beyond the southern end of Ecola State Park, lands he ultimately did not develop. Following John Yeon's death in 1994, his heirs sold the dune lands to private buyers with the aid of a real estate brokerage, securing development rights contingent upon their agreeing to place Chapman Point in permanent conservation status. This land was designated as the John Yeon State Natural Site; though not formally a park, it was placed in Oregon State Park management, effectively extending the preserved portion of Ecola State Park southward, to the northern edge of Cannon Beach. Meanwhile, John Yeon's brother, Norman Yeon, developed his own elegant beach home, just south of what is today the Sunset Beach terminus of the Fort-to-Sea Trail. While his brother apparently

had no direct input on the design of Norman Yeon's house, the house nonetheless displays many elements characteristic of John Yeon's designs—not least being the graceful integration of the house's footprint into the natural contour of the stabilized dunes, fronting a small dune lake. Norman Yeon willed this beach home for the benefit of the public. Following his death, with the aid of the North Coast Land Conservancy and the Trust for Public land, his house was transferred to the management of Lewis and Clark National Park, becoming one of the LEWI parks in 2009 (Longenecker 1995; Vaughan and Ferriday 1974).[203]

The rebound of tourist towns was, in truth, not uniform. Bayfront towns, often with an abundance of old industrial infrastructure and no ocean beach access, came relatively late to the tourist trade, capitalizing on niche markets, historic buildings, and a gritty authenticity that is elusive on the beachfront. A few capitalized on access to fishing and hunting areas, which were also absent from most beachfront towns. Places like South Bend, Raymond, Ilwaco, Hammond, and Astoria witnessed a post-War boom in fishing charters, retail and lodging options for hunters and fishermen, and similar offerings. This natural resource-based tourism has persisted, though it is faded in relative importance over time, reflecting nationwide trends in the popularity of hunting and fishing.

In some cases, even beach towns have been hamstrung by natural causes. Beaches and dunes have continued their slow westward march, in the same vexing process that made Clatsops relocate their villages periodically over the last 3,000 years, now accelerated by jetty construction and Soil Conservation Service plantings. Many of the beachfront towns found themselves landlocked, with the large beachfront homes of Gearhart and Long Beach increasingly sitting a long march through the dunes to the sea. Today, the truly beachfront towns, where one can spy the sea from main street, are few. One could walk from the mouth of the Columbia along the beach southward and not see structures resembling a town until reaching the Necanicum estuary, in spite of the large and bustling communities along that stretch, concealed a short distance away from the beach, behind dunes. To the north, the formerly beachfront main strip of Long Beach lies surprisingly hidden behind European beach grass and shore pine on low sloping banks of sand. While providing pleasant solitude for beachgoers, the situation isn not what the town's founders had in mind. This trend has favored development in the few towns still possessing direct views and easy access to the beach, such as Cannon Beach and Seaside, with its beach-front promenade. In turn, it has hindered tourist development in places further north, such as Warrenton, where tourists typically do not linger for long.

Figure 11.14 – Oregon Governor, Oswald West – a prominent figure in the Progressive-era coastal conservation, riding his horse on Chapman Point, on the southern end of Ecola State Park, in what is now the John Yeon State Natural Site. Photo courtesy Oregon Parks and Recreation Department.

With so much sand, issues of beach access became increasingly critical, not only to tourists, but to the integrity of the ascendant tourist economy. In this respect, events in the Columbia–Pacific region significantly shaped broader national and state histories of public beach access. Efforts to privatize the beaches began almost as soon as early tourist promoters completed their plat maps, showing private lots extending to what were, in truth, beaches and dune fields. In both Oregon and Washington, efforts were made to fence off private beach lands, resulting in pushback not only from recreational users, but those who relied on beaches for transportation. Especially on the Oregon side, where headlands and rugged mountains impeded travel, access to the beaches was required to transport people and goods between communities prior to the completion of state highways. The issue was of particular concern to Oregon's progressive governor Oswald West, who frequented Oregon's north coast and witnessed the effects of early beach privatization on tourist mobility. (The matter was also of *personal* importance to Governor West. He would build his beach home directly in front of Haystack Rock in Cannon Beach, where it was only accessible by beach route from the wagon road terminus at Ecola Creek.)[204] Arriving in office, Governor Oswald West announced his intention that the beaches of Oregon were to be treated as public highways, necessary for unobstructed public transportation; the state legislature agreed,

Figure 11.15 – Oregon Governor Tom McCall enjoyed broad public support for his initiative to protect public access to the state's beaches. In 1968, McCall would pay a visit to the contested Cannon Beach shoreline between the Hay hotel and Haystack Rock, as would a number of demonstrators supporting legal action to defend public access rights. Photo courtesy Oregon Historical Society.

passing legislation to this effect in 1913. This effort earned him national attention, as well as the admiration of President Theodore Roosevelt, who praised West as "*a man more intelligently alive to the beauty of nature…and more keenly appreciative of how much this natural beauty should mean to civilized mankind, than almost any other man I have ever met holding high political position*" (Roosevelt 1911).

Over a half century later, the stretch of beach just below Oswald's former beach house became the center of legal challenges that would extend the scope and precedent of Oswald's legacy—making Oregon's beaches a national model for public access. Cannon Beach motel owner William Hay sought to exercise exclusive claims to the beach in front of his family's hotel in mid-town Cannon Beach. As an outcome of ambitious 19th century lot division and promotion, the Hay property line technically extended from the sandy beach in front of the Hay hotel to Haystack Rock. In early 1967, noting that beach transportation had been eclipsed by highways and the dry sand above mean high tide was impassible by vehicle, Hay constructed a

fence around the section of beach lying above mean high tide level, and sought to expel beach visitors who were not paying guests of his hotel. The state demanded that Hay remove the fence, but he refused to relent, resulting in public protests and a widely-publicized helicopter airlift of Governor Tom McCall to the beachfront. In response, the Oregon legislature passed the "Oregon Beach Bill," which McCall signed into law in July of 1967. The law, which survived seven separate lawsuits by developers and landowners in the following five years, ensured public access to the high tide line in perpetuity based on the century and a half of prior public use of these areas. The law was based on the legal doctrine of "*adverse possession to the broader common-law definition of use by custom, cementing into place public ownership of all of Oregon's beaches*" (Thoele 1998: 350-352). (The beach controversy had other, initially unintended consequences, including the 1968 addition of Haystack Rock to the Oregon Islands National Wildlife Refuge.) As with Oswald West's campaign for public beach access over a half century before, this move drew national attention, establishing the legal foundations for the use of the beach along the entire coast of Oregon, but also influencing legal opinion and precedent regarding beach access in other states (Love 2003; Thoele 1998; Merriam 1992; Cox 1988; Oregon State Parks 1977).

Today, pressures for tourist development and conservation have definitive, and sometimes competing, influences on the landscapes of the Columbia-Pacific region. As the old town plats are filled in, real estate interests look to new lands beyond the towns' margins for development opportunities. The golden era of state park creation largely a thing of the past, nonprofit organizations now play an increasingly central role in land conservation initiatives. Often working alongside local governments and land management agencies, non-profits have worked to set aside scenic and biologically significant places, often expanding preexisting parks and refuges on their margins.

Especially since the 1970s, The Nature Conservancy has played a role in this process, helping to add the Ellsworth Creek Preserve on Willapa Bay to the Willapa National Wildlife Refuge, and to set aside Columbia estuary lands outside the National Wildlife Refuge system. In the late 1980s and early 1990s, Ecola Park was effectively expanded eastward through land purchases involving The Nature Conservancy, Oregon State Parks, Cavenham Industries, and major private donors including the Feldenheimer family—partially realizing Boardman's wish to "*press to the east*" from the Ecola cliffs with the addition of the Elmer Feldenheimer Reserve.[205] Local and regional nonprofits have played significant roles as well. Growing rapidly since the

1990s, the North Coast Land Conservancy is now the single largest landowner in the Seaside area, excluding timberlands beyond the city limits, and has aided in public fundraising to set aside protected lands in many parts of Clatsop County, including the Norman Yeon property and other sites adjacent to LEWI parks.

Founded in 1990, the Columbia Land Trust has purchased lands along the Columbia estuary, often for habitat restoration purposes, including lands within view of the riverfront units of Lewis and Clark National and State Historical Parks. This organization has helped pioneer new approaches to conservation that protect working landscapes, such as the conservation of farm lands that not only function as working farms but as restoration sites for salmon and waterfowl habitat. In recent years, the region witnessed efforts to expand conservation initiatives to the seas, including proposals for the development of National Marine sanctuaries—one of the first successful proposals in the Pacific Northwest leading to the development of a sanctuary offshore from Oswald West State Park at the south end of Clatsop County. Although state park development has been comparatively modest in recent times—a victim of shrinking budgets, rising property values, and complex political realities—these agencies do sometimes take the lead on important and popular proposals. The Oregon Park and Recreation Department's 2004 acquisition of the Sunset Beach State Recreation Site in support of public beach access from the LEWI parks is perhaps the most recent and prominent example.

The history of recreation and conservation runs deep in the Columbia-Pacific region—deeper than is commonly appreciated. With the urban population of the Pacific Northwest growing by leaps and bounds, tourism has become a premier industry in the Columbia-Pacific region, nearly eclipsing most of the older resource industries in its reach and economic influence. More people live within day trip's range of this coast today than lived in the entire Pacific Northwest region when Ben Holladay and Henry Tinker were promoting fledgling resorts in Seaside and Long Beach. With the ease of transportation and communication, the coast is integrated into the social fabric of the urban Northwest in ways formerly unimaginable to those men. Development pressures from tourism are mixed blessings for coastal communities, as each town tries to embrace the economic advantages of tourism while retaining the integrity of resident communities and landscapes. Efforts to protect natural landscapes from further development and to rehabilitate or even replicate historical buildings and neighborhoods are significantly influenced by these changes.[206]

12: Toward a Conclusion

The Historical Landscapes of Lewis and Clark National and State Historical Parks

From the slow-moving tidewaters of Willapa Bay and the Columbia River estuary to the rugged, wave-pounded headlands at Cape Disappointment and Tillamook Head, the Columbia-Pacific region has changed dramatically since Lewis and Clark. The members of the Corps of Discovery might still recognize the region's topography, the fundamental geometries of its mountains, rivers, and coastline, but the differences would surely be staggering. The large and powerful Native American nations of the region, the river-mouth masters of sprawling trade networks encompassing much of the Pacific Northwest, have been much reduced in scale and position, supplanted by territorial ambitions and international economies centered in distant parts of the world. Native peoples have persisted, and have exerted far greater influence over the region's cultural and economic life than is often appreciated, though their traditional territories, so carefully mapped by Lewis and Clark, are no longer in their control. By and large, their former village sites—many still known and valued by modern Native peoples—have been reoccupied by a succession of military forts, canneries, railroads, highways, cities, and even parks. The forests, estuaries, and dune-field prairies beheld by the Corps of Discovery persist, but are significantly changed, reshaped by wave upon wave of development and commercial harvest.

The changes described in this book were set in motion by an international scramble for territory in which Lewis and Clark were iconic figures—on one of the last coastlines to be explored or effectively claimed by the peoples of Europe. The empires of Britain, Spain, the United States and Russia all converged on the Columbia-Pacific coast almost simultaneously in this bid for colonial dominance, seeking to lay claim to its lands and waters, but also to realize vast profits from the furs of signature species, the sea otters and beaver of its waterways. In time, their competing claims prompted the development of forts, the Astoria fort among them, providing a permanent Euro-American foothold on the Columbia-Pacific coast. In

their early years, these forts were bustling centers of ethnic and cultural diversity, full of resident Clatsops and Chinooks, fur company-employed Scots and Native Hawaiians and Quebecois French and Iroquois and Metis, and an endless procession of Native and non-Native visitors arriving by river or by sea. In early 19th century Astoria, as with the upriver post at Fort Vancouver, interethnic marriages were the norm, and interethnic trade and barter was the cornerstone of the economy, bringing people into contact with novel goods, technologies, values and ideas. One might overhear French being spoken alongside English, but also – for example - Clatsop and Quinault spoken alongside Cowlitz and Tillamook and any number of other Native languages. Very commonly, one might hear Chinook proper spoken alongside the more widely known hybrid trade language of Chinook wawa (or "Chinook jargon"), which facilitated communication across myriad linguistic boundaries. Buoyed on fur trade wealth, Columbia-Pacific tribal chiefs such as Concomly and Coboway held kingly stature, orchestrating and profiting from this tumultuous interethnic trade. The multicultural flavor of this period was distinctive along the lower Columbia, and arguably remains unmatched even in the urban communities of the region in the early 21st century.

Yet, in time, the territorial and economic ambitions of the international empires and their fur trade outposts would bring to near extinction some of the most fundamental human and environmental elements of the area as observed by Lewis and Clark—from powerful Native American chieftainships to the keystone communities of sea otters and beyond. The sea otter "resource" of the coast had been exhausted, the species soon to be extirpated from the region. The fur trading networks that centered at the mouth of the Columbia in the wake of Lewis and Clark's visit gave way to the harvesting of interior animals, leaving the coast in an economic backwater from which it would long struggle to overcome. Centering their operations in what is now the Portland area, the North West Company and Hudson's Bay Company tapped into Native American trade networks of the inland Northwest, monopolizing the regional trade in beaver and other furs still shipped around the world via the lower Columbia. Epidemic diseases arrived during this period, mostly carried here by ships seeking furs. Smallpox, influenza, malaria, and many other diseases alien to this coast carried away over 90% of the Native population through the first half of the 19th century. Not even the majestic Chiefs, Coboway and Concomly, were spared. On the heels of these epidemics, American expansion elbowed out British fur trading interests, bringing new people to the region, guided by a new set of economic and political ambitions. Though it is too often forgotten, there is no doubt: by the time the first American homesteaders arrived in the mid-19th century, the region was already dramatically altered, a very different place

than that described by Lewis and Clark less than 50 years prior. Arriving settlers often saw the landscape of the Columbia-Pacific region as "wilderness," but this was an illusion. The landscape had been, until recently, a densely settled place, its longstanding human communities largely swept away only a few years before their arrival in a succession of horrible and convulsive plagues.

Figure 12.1 – The 1955 Fort Clatsop replica, shortly after its construction. Fort Clatsop and the Lewis and Clark story remain central to the park's interpretive and management mandates. In the broader regional history outlined in this document, dating from both before and after Lewis and Clark's visit, visitors might see connections with the experiences and observations of the Corps of Discovery in the winter of 1805-06. The current fort – the second replica on the site – may not be National Register eligible at this time, but the Fort Clatsop site still has its own rich history worthy of documentation and commemoration. Photo courtesy Oregon Historical Society.

As American settlers arrived in the region from places like the American Northeastand Midwest, this coast presented them with unfamiliar environmental challenges, often at odds with their own longstanding economic and agricultural traditions. Dynamic dune-fields and dense, ancient forests stymied their ambitions to establish agricultural homesteads, prompting a rapid turnover of certain lands and sending some prospective settlers to other, more forgiving parts of the West. In

an effort to adapt, some Columbia-Pacific settlers experimented with alternative mixed economies, involving the harvesting of timber and fish, in addition to modest farming undertaken for local markets or simple subsistence. Fishing and timber harvesting were both time-honored pursuits in the region, prefaced by Native American barter economies involving both fish and wood products, traded between tribes and later between tribes and arriving ships. Early commercial mills and fishing operations emerged as commercial offshoots of Hudson's Bay Company operations that sought to augment, and perhaps offset, the decline of the fur trade on the lower Columbia—selling Columbia River salmon and timber in places like colonial Hawaii in the 19th century. The California gold rush gave American settlers their first major markets for these goods, sparking the explosive growth of the two parallel industries.

From its gold rush roots, the salmon canning industry reshaped the cultural geographies of the lower Columbia into the final decades of the 19th century, bringing Chinese laborers in abundance to work, especially in the canneries, and Scandinavian fishermen to ply the waters for fish. The output of the industry skyrocketed, only to falter in the early 20th century in the face of two roughly concurrent developments. Salmon runs on the Columbia – decimated by heavy fishing and growing human impacts on inland habitats - brought diminishing catches to the canneries, just as industrial profits were pinched by the forced removal of Chinese labor nationwide and the skilled and often collective negotiation of wages by those laborers - significantly Scandinavian - who remained. In response, cannery owners moved a sizeable portion of their operations north, in search of better catches and bigger profits—especially to the productive waters of British Columbia and the Alaskan fishing frontier. The modern fishing industry of Alaska, in particular, was shaped significantly by this mass exodus of capital and resources from the lower Columbia region. The fishing economy that remained in the region was compelled to diversify, turning its attention to such pursuits as tuna canning, crabbing, and groundfish. Fishing interests also restructured in the region, sharing resources between canneries through such organizations as the Columbia River Packers Association, while also maintaining a strong tradition of independent, small-scale fishermen. In spite of the northward shift of the salmon fishing industry, many salmon fishing families chose to remain, fishing in far northern Alaskan waters in season, only to return to their home ports on the lower Columbia when the fishing was done. Family-based fleets of gillnetters, doggedly persistent, continued to fish the lower Columbia for salmon on the margins, in spite of wildly fluctuating catches, markets, and regulations surrounding the diminished runs of this iconic Northwestern fish.

Similarly, timber harvesting skyrocketed in the wake of the California gold rush, marking the beginnings of the modern industry. Yet the scope of lumbering was quite limited at first, largely centered on waterfront forests, where logs were easily towed by boat to tidewater mills. Logging in the Sitka spruce zone of the outer, ocean coast was often hindered by a lack of access, but also a lack of markets for the spruce and other signature trees of the oceanfront. Instead, much early logging centered on the prized Douglas fir of the interior hills fronting the Columbia estuary, the logs passing through tidewater mills, their wood products then passing by sea to California and beyond. Only the harvesting of timber for airplane manufacturing in World War I, and later for paper products, prompted the full industrialization of the ocean coast's spruce forests. Large milling operations quickly came to dominate the local economy, especially as the salmon canneries waned. Large mill owners, most notably timber baron A.B. Hammond, arranged for the private acquisition of lands formerly in the public domain throughout the Columbia-Pacific region, providing a highly profitable flow of trees through their mills. Those newly privatized land holdings were mostly acquired from the federal government through a series of land grants meant to foster the development of railroads, some of those lines ultimately built and some not. Sold to a succession of new owners over time, these properties make up much of the privately-owned forestlands, and much of the Columbia-Pacific region's total land base today.

While the woods largely fell silent during the Great Depression, most of the remaining ancient forests were felled quickly in the boom years following the Second World War. Fueled by national economic trends and newly available petroleum-intensive logging machinery – from portable chainsaws to reliable log trucks – this post-War logging transformed a much of the Columbia-Pacific land base, ushering in the "managed forests" of today. As with salmon fishing, so too with logging, laborers have had to adapt to rapidly changing circumstances, as logging and milling becomes more automated – requiring less labor even as logging's reach expanded. Gyppo loggers and small mill operators, as indefatigable as their gillnetting cousins, have found ways to operate successfully along the margins of the large and rapidly fluctuating industry. Here too, a diverse labor force, a sizeable proportion of them being of Scandinavian origin, has played a key role throughout this history. Distant markets and decision-makers still shape the industry today while, at the time of this writing, a growing proportion of the timber harvest is carried out to provide raw logs for the burgeoning economies of Asia. While the Columbia-Pacific region is still draped in emerald green forests, their resemblance to the forests seen by Lewis and Clark is faint, the vast majority of the regional landscape now representing industrial forest lands where trees in any

particular grove are of roughly even height, roughly even age, and seldom live more than a few decades before harvest. Only in places such as unharvested stream and river buffers do trees now live much longer - an outcome of late-20th century state laws to protect fish and water quality in both Oregon and Washington, allowing salmon and other species to thrive and sometimes rebound in local streams and rivers. Still, truly ancient forests are few in this area: they are small patches, largely relegated to the park lands described in this document, providing glimpses of ancient forests that draped much of the Columbia-Pacific region. Timber remains a cornerstone of local manufacturing, but the industry will continue to remake itself in response to changing international economies, changing technologies, and changing public expectation and regulation of the forest.

In few places around the globe had fur trading empires, salmon fishing empires, and the logging industry converged so dramatically on the landscape - quickly rising and then falling or transforming into something quite different. At each stage, they have left reshaped landscapes and human geographies in their wake. During each step, the region's industrial entrepreneurs brought immigrant laborers to the Columbia-Pacific, and each successive wave of immigrants—Chinese, Scandinavian, and others —made a unique mark on the cultural geography of this region. New immigrant groups from Mexico and beyond are simply the latest in a series of such communities that have contributed to Columbia-Pacific life. If historical immigrants centered in industrial towns on the tidewater, this new immigrant population has centered largely in tourist towns, reflecting the changing economic identity of the region. It is now the tourist centers such as Cannon Beach that report proportionally large Mexican-born populations in recent censuses compared to other Clatsop County towns. In the 1980s and 1990s, business owners in the Columbia-Pacific region actively recruited Mexican labor in unprecedented numbers—even traveling to nearby metropolitan areas or visiting Mexico, bringing workers to the region to fill labor shortages. As with other ethnicities in earlier times, this fostered a "chain migration," as laborers recruited early in the process invited additional laborers to the area. In historical terms, some of the region's immigrants, such as the Scandinavians, have had strong incentives to stay, while others, such as the Chinese immigrants, have not. But each small industrial revolution has brought new labor demands, and new people to meet those demands, adding a layer to the region's rich cultural geography. No doubt, this trend will continue into the future.

In spite of this rich and bustling human history, it is sometimes surprising how little of this history can be detected on the verdant landscape of the Columbia-Pacific region. The tangible imprint of certain groups, and certain historical moments, may

have been fleeting in the Columbia-Pacific region, where dampness, salt spray and a predilection toward wooden construction have shortened the lifespan of many historical landscapes. Portions of the industrial infrastructure associated with fishing and logging that could be salvaged for other uses were quickly dismantled, and what remained is often rotted away—leaving few intact landmarks of these industries on the land or in today's historical parks. Within the Lewis and Clark National and State Historical Parks, it is mostly the monumental landscapes of concrete and stone, associated with navigation and national defense, that have endured. These have provided our region with some of its most prominent historical landmarks. At Fort Columbia, Fort Canby and Fort Stevens, a triad of military forts once produced a potential "triangle of fire," dominating and defending the mouth of the Columbia from the Civil War until the dramatic events of World War II. Concrete bunkers, gun batteries, and a vast array of supporting structures—most dating from the beginning of the 20th century—still persist at these places in shades of disrepair, a testament to this pivotal period in the nation's military history. Nearby are the navigational structures—the Cape Disappointment and North Head lighthouses, but also the three major jetties of the Columbia's mouth. These historical structures still function by design over a century after their creation, and are among the few landmarks of both historical and utilitarian value that remain in the national and state parks of the region.

Over time, too, the natural resources of the coast have taken on new significance and are less often seen in utilitarian terms. As the tourist industry emerged from its early rail- and steamship-based infancy into its automobile-dominated manifestations of the 20th century, the demographic, economic, and social core of the Columbia-Pacific region migrated too: once situated firmly in the region's tidewater industrial towns, the region's "core" has slowly migrated westward to embrace the resort towns of the ocean coast. Beach towns now bustle with activity, while old tidewater resource towns reassess their identities and reach out to tourists in various ways. Today, zip-line courses appear on former industrial timberlands not far from Fort Clatsop's entrance, recreational second-homes pop up thickly amidst fields of cedar stumps, and former commercial fishermen are often encountered operating tourist fishing charters, landscaping hotel grounds, or taking other jobs in the tourist industry. When 19th century entrepreneurs founded tourist hotels on the bays and beaches, they could have scarcely anticipated tourism's modern reach, and the degree to which recreation has eclipsed preexisting modes of life.

The tourist economy is paradoxical and involves many tradeoffs: there are many new "recreational entrepreneurs" in this new setting, and some level of protection of the

booms and busts of the fishing and timber industries. Yet, many of the jobs in this field pay less than a living wage and communities, seasonally flooded with tourists, have lost much of their autonomy and serenity. Here, tourism is perhaps a "resource industry," but it's a resource industry of a very different sort, where unmodified natural landscapes carry a certain monetary value and the aesthetic preferences of urban people shape the landscapes and economies of the coast. While the tourist industry has relied heavily on natural scenery for its appeal, its persistence relies on a model of resource use that is relatively passive, not extractive. With its aesthetic emphases, tourism sometimes complements, and sometimes competes with, longstanding resource industries. The Columbia-Pacific region has had to reevaluate its identity as tourist towns become ever more integrated into the urban spheres of metropolitan Portland and Seattle, cities with a combined population in the millions – their populations larger than the largest cities on Earth at the time of Lewis and Clark's visit. Residents of these modern cities not only visit the coast in ever-increasing numbers, but also own a growing portion of the land as second home owners, even "telecommuting" from the region, residing on the coast for portions of the year. No longer does growth depend on the harvest of local resources, but on a quality of life that is inextricably tied to beaches, rugged mountains, parks, small towns, and other amenities that set the region apart somewhat.

In this context, especially in Clatsop County, the Columbia-Pacific region has witnessed some of the more decisive moments in Pacific Northwest conservation history through the 20th century—including the development of Oregon's state park system and rules mandating public access to the ocean beaches in perpetuity. Today, non-profits and communities continue to expand and refine conservation measures, as more people arrive in the area, placing new pressures on the landscapes that define the region's identities and ecologies. When that prominent early visitor, William Clark, looked out across the region from Tillamook Head in January of 1806 and *"beheld the grandest and most pleasing prospects which [his] eyes ever surveyed"* he clearly appreciated some of the virtues that inspired later coastal visitors, and this latest wave of human settlement on the land. Yet he could, perhaps, not have imagined how this scenery would mobilize road-building, town-building, park-making, and various statewide policy innovations in the centuries to come.

Today, the national and state parks of the Columbia-Pacific region are some of the few places where one can see and learn from the landscapes from these successive periods of history, their preserved fragments aggregated over historical time. This book has sought to summarize some of these major developments, and to reveal

Figure 12.2 – The parks and park facilities developed in the first half of the 20th century - such as those at Ecola State Park, shown here -were rapidly embraced by residents and visitors alike. By the mid-20thcentury, these protected areas were of growing importance to the coast's economy and were the cornerstones of a rapidly changing regional identity that centered on recreational uses and scenic landscapes. Photo from author's personal collection.

how they have left physical traces in the parks and beyond. The research that led to this book cast its net broadly but not always deeply in these rich historical waters. With its topical and temporal breadth, we have only "scratched the surface" of the available historical record, outlining certain key themes in the region's history for the benefit of the public, but also for the park staff who must manage the historical landscapes of the Columbia-Pacific region for the benefit of future generations. Such was the nature of the task: the overarching goal of this research was to provide a basic introduction to the regional history and to set the context for understanding the forces that shaped the landscapes now within the Lewis and Clark National and State Historical Parks. With no fewer than ten units in that park system, owned by multiple state and federal partners, this admittedly leaves little room for subtle nuances and fine-grained detail. More detailed historical studies are warranted based on the findings of the current document, and would yield a variety of benefits for visitors to the parks, as well as interpreters and resource managers who host them. So too, the findings of this work imply a number of management steps for park managers, such as special conservation measures for places of unique historical importance or the listing of properties to the National Register of Historic Places.

It appears likely that the national and state parks will pursue these options, and hopefully this document will be of use in supporting their efforts.[207]

Regardless of whether the National Park Service and its partners in Oregon and Washington's state parks choose to pursue such efforts, it is clear that these agencies will continue to explore, document and celebrate the history of the Columbia-Pacific region for many years to come. Many of the places most critical to the history of the Columbia-Pacific region have come into these agencies' management, through a series of historical developments - some involving mere happenstance and some involving more methodical efforts to preserve historical sites. These parks are among the few places in the region where one might still walk, and behold the natural or cultural landscapes as they were seen by generations before. They are some of the few places where one can engage well-preserved cultural landscapes—military forts and lighthouses, for example—dating from much earlier periods of our shared history, and might yet learn from them. Through these agencies' mandates for historic preservation and public education, they have together inherited the responsibility—and the privilege—of telling the stories of Columbia-Pacific history to park visitors. It is our sincere hope that this document will aid the parks' efforts in this important task, so that the history of the region will not be forgotten, but will continue to be relevant to our understanding of the past and might serve as guideposts to our shared future. It is also our sincere hope that this document will be a useful guidebook to readers, as they explore and reach their own conclusions about the meaning of these unique places to the past, present, and future of the Columbia-Pacific region.

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Notes

[1] Boas (1901: 221) notes that even the Cathlamet "*used to go inland to hunt elks. In the fall of the year they used to go to Saddle Mountain. When elks were seen on the prairie of Saddle Mountain they were all killed*." Taylor (1974b) notes the use of elk drives off of cliffs in southern Clatsop County.

[2] John Harrington's Nehalem interviewees noted that "*kids went to highest places to get power - Maybe they went on top of Tillamook Head to get their song*" (Harrington n.d.).

[3] As Warre and Vavasour (1909: 71) noted, *"There is one small stream of spring water on the Cape, and two on the connecting neck of lands, but they are not of very good quality*." Native American settlement was situated near these water sources, and an absence of predictable water explains in part the relatively diffuse pattern of settlement described on the headland otherwise.

[4] Broughton referred to Middle Village as "Village Point" in 1792; by 1839, sources had established the name "Chenoke Point." The name "Chinook Point" was commonly employed for the beaches and the village complex centered on Middle Village (e.g., U.S. Coast and Geodetic Survey 1859: 398-99) but only later was reapplied to the modern site of Fort Columbia. The U.S. Coast and Geodetic Survey (1859: 399) suggests of this place that "*the Indian name is Nóse-to-ilse*." In late November, 1813, Alexander Henry (in Coues 1897 2:754) found the three villages on Chinook Point empty, or mostly so. Presumably these had been abandoned for the winter, a pattern noted by many travelers, including Lewis and Clark.

[5] A settlement called "ucmuyáqxan" or "Utsumuekhan" is sometimes reported for the site of Fort Columbia, but this reference is difficult to disentangle from references to Middle Village. See Weathers (1989: 24, 31), Wilson et al. (2009).

[6] In light of the historical, ethnographic, and archaeological evidence summarized here, it is clear that every sub-unit of LEWI has some history of Native American use and occupation. There are Native American archaeological sites eligible for listing (many already listed) under National Register Criterion D, minimally in Middle Village/Station Camp, Cape Disappointment State Park, Ecola State Park, and Fort Stevens State Park associated with each of these large villages. In spite of extensive site disturbance, there are likely to be archaeological materials as yet unrecorded in the other sub-units as well. This is an archaeological question, however, and is beyond the scope of the current report. While many of these places continue to be of profound cultural and historical importance to tribes, they have also been reoccupied and redeveloped for more than a century and a half in some cases. For this reason, it is difficult to assess the potential eligibility of Traditional Cultural Properties (TCP) in LEWI, and further consultation with park-associated tribes would be required to clarify this point. Middle Village/Station Camp, for example, is of profound importance to modern Chinooks, but it is unclear whether the "integrity of condition" required as part of a TCP nomination would be sufficient. Cape Disappointment and Ecola State Park still possess certain undisturbed areas of cultural significance where one might "see the landscape as the ancestors saw it," and these may warrant consideration, but it is unclear whether the "integrity of relationship" consideration might be met in those cases. One place within the larger study area (but beyond the jurisdiction of LEWI) clearly meets TCP criteria: Saddle Mountain. Still revered by many tribal members today and visited by some for ceremonial purposes, this Oregon State Park may still warrant consideration as a TCP through consultation with the federally recognized and unrecognized tribes of the region.

[7] As Meares recounted of his visit to the mouth of Willapa Bay,

We had concluded this wild and desolate coast was uninhabited; but this opinion proved to be erroneous, for a canoe now came off to us from the point with a man and a boy. On their approach to the ship they held up two sea otter skins...We then fastened several trifling articles to a cord, and threw them over the side of the ship, when they were instantly seized by the boy and

delivered to the man, who did hesitate a moment to tie the otter skins to the cord, and waved his hand as a sign for us to take them on boat, which was accordingly done (Meares 1791).

[8] As recounted in the Vancouver journals,

October 21st: The Discovery having put to sea without making any signal to the Chatham, Mr. Broughton very judiciously concluded that I was desirous that he should explore and examine this opening on the coast; and in order that no time should be lost in carrying this service into execution, he proceeded at two in the afternoon with the first of the flood and a strong gale at S.W. up the inlet, keeping the Village point [Chinook Point], which lies S. 70. E. five miles from cape Disappointment, well open with a remarkable projecting point, that obtained the name of Tongue Point [near Astoria, Oregon], (on the southern shore, appearing like an island). The depth of water here was not less than four fathoms, and as they approached the deserted village [Chinook Point] the depth increased to six, seven, and eight fathoms. The wind by this time obliged them to bring to, for the purpose of double reefing the topsails, and whilst thus engaged, the rapidity the flood tide impelled them into three fathoms water, before sufficient sail could be made on the vessel to render her governable. By this means she was driven on a bank of sand, where the strength of the stream, preventing an anchor being carried into deep water, she remained aground until high tide; when they hove into ten fathoms with the greatest of ease, and there rested for the night. Mr. Broughton had, for his guidance thus far up the inlet, a chart by Mr. Gray, who had commanded the American ship Columbia; but it did not much resemble what it purported to represent. This shoal, which is an extensive one lying in mid-channel, having completely escaped his attention (Vancouver 1801: 53).

On October 22, Broughton took the cutter, a small boat stored on the *Chatham* for shallow-water travel, to explore the mouth of the Columbia. The crew of the *Chatham* traveled first to Middle Village, and then to Point Adams, now within Fort Stevens State Park:

Mr. Broughton proceeded with the cutter and launch to examine the shores of its southern side. He first landed at the deserted village, on the northern shore, and on the eastern side of Village point [Chinook Point]; which he found a good leading mark for clearing the shoals that lie between it and cape Disappointment, carrying regular soundings of four fathoms. From this point he passed over to point Adams [now in Fort Stevens State Park], the starboard of S.E. point of entrance into this inlet. . . . Point Adams is a low, narrow, sandy, spit of land, projecting northerly into the ocean, and lies from cape Disappointment, S. 44 E. about four miles distant (Vancouver 1801: 53).

Traveling along the southern shore, the crew noted extensive villages and groups of burial canoes while naming various landmarks, including Youngs River, named for British Admiral Sir George Young, an uncle to Broughton. On October 23, the party explored the mouth of the Lewis and Clark River, in the vicinity of Fort Clatsop, a place that apparently struck the crew as rich in resources and aesthetically pleasing in a manner that would be echoed 13 years later by Lewis and Clark. Again, quoting Vancouver,

From the banks of the river [Lewis and Clark River] a low meadow, interspersed with scattered trees and shrubs, extended to the more elevated land. This was of easy ascent, and was agreeably variegated with clumps and copses of pine, maple, alder, birch, poplar, and several other trees, besides a considerable number of shrubs, greatly diversifying the landscape by the several tints of their autumnal foliage. The marshy edges of the river afforded shelter to wild geese, which flew about in very large flocks; ducks were in abundance, as were the large brown cranes before noticed in the more northern parts of New Georgia (Vancouver 1801: 55).

[9] The Russians recruited one of Cook's crew, Joseph Billings, to sail for Russia in 1785, but logistical challenges limited the trip to a brief and belated search of Alaska. Alexander Baranov continued to oversee Russian-American Company operations from the 1790s until 1818, by which time the British and, to a lesser extent, Americans were already firmly in control of the mouth of the Columbia. Shelikov's son-in-law, Nicholas Resinov, briefly forged a Russian-Spanish alliance with the intention of repelling the British, French, and Americans, but died unexpectedly in 1807.

[10] Though none of the early European maritime explorers and traders left enduring landmarks on the Columbia-Pacific region, it's clear they had connections with local landmarks that warrant commemoration. Only one of these places, Fort Columbia, has a National Register nomination that reflects this history: Chinook Point on which it sits was granted

National Historic Landmark status in 1961 by virtue of the fact that Robert Gray anchored there during his journey. Yet Gray, Vancouver, and almost every maritime fur trader who came after them in the two decades that followed seems to have traded with people from the Chinook community at Middle Village and, to a slightly lesser degree, the Clatsop community at what is today Fort Stevens, usually with residents paddling to shipside in canoe. Cape Disappointment, Chinook Point, Point Adams, and Scarborough Hill/Fort Columbia are navigational landmarks seen and mentioned by most chroniclers passing through the area, though all but the major village sites were seldom visited. Ships commonly anchored just offshore from Middle Village/Station Camp and Fort Columbia, and somewhat less frequently on the eastern side of Cape Disappointment or in the vicinity of the NPS Dismal Nitch sub-unit. Tillamook Head, too, appears in these early narratives, such as Meares' account, as a navigational landmark of importance. While it is unclear whether these places warrant National Register status by virtue of these connections, it is clear that the story of European exploration and the early fur trade is part of the story of those landmarks and might be interpreted there to good effect.

Parenthetically, though the small village of Yuquot still persists at Nootka as home to the Mowachaht, and the chiefly name Maquinna is still inherited by modern Nuu-chah-nulth leaders, the shores of Nootka Sound are today remarkably quiet, belying little of the area's prominence in the early history of the entire Northwest coast. Nootka Sound would be bypassed as the fur trade shifted inland and international competition cooled along the coast. Today, the village and associated landmarks from the early imperial period are commemorated as part of the Yuquot National Historic Site of Canada.

[11] As Ronda (1984) suggests, "*For reasons that are now unclear, Lewis and Clark never visited this village nor had any recorded contact with its leaders*."

[12] The name is still used for that creek today after many years' hiatus, as well as being formerly applied to the town of Cannon Beach. The creek was also long known as "Elk Creek" locally, and that name was applied to the town post office. The creek's name was formally changed to Ecola Creek as an outcome of the 1955-56 Lewis and Clark Sesquicentennial. Since the founding of the state park in 1932, the name Ecola has been applied to the Oregon State Park immediately north of town, incorporating those lands traversed by the Corps en route to the whale (McArthur 1992).

[13] Contemporary tribal representatives note that the concept of "theft" by their Native hosts reflected a misrepresentation of concepts of ownership among the Corps of Discovery. Within the tribes' perspective, all of the resources harvested and utilized by the Corps during their stay were the property of the host tribes, who had been allowing access to those resources out of sympathy for the Corps' apparent impoverishment. The taking of a few elk would be compensatory for this sharing in the tribes' view; the taking of a canoe by a guest without prior agreement and repayment, by contrast, would have been understood as genuine theft (Ray Gardiner pers. comm. 2011, Richard Basch, pers. comm. 2012).

[14] All of the places mentioned here are central to the Lewis and Clark National and State Historical Parks' mission, being fundamental to the national park's mandates and the formal justifications that have been provided for the park's modern boundary. The entirety of the Fort Clatsop sub-unit was used or occupied by the Corps of Discovery, and there are clearly recorded references to the Corps visiting every one of the other sub-units of LEWI. Exceptions might include Point Adams, which was nonetheless a landmark of importance to their journey, perhaps visited directly, and important to the history of their Clatsop hosts. Similarly, the Sunset Beach and Fort-to-Sea Trail areas approximate historical travel routes, even if the exact location of those routes isn't readily recoverable today.

There are certainly issues requiring further attention, however. While it is clear that the National Park Service and Oregon and Washington state parks now possess most of the key sites from the Lewis and Clark journeys, it is also clear that places have been excluded or misidentified as part of the National Park Service effort to manage and interpret Lewis and Clark sites in the Columbia-Pacific region. The identity of the Dismal Nitch location, visited by the Corps of Discovery in November 1805, is currently under review by the Washington State Historical Society. Following the interpretation of the expedition journals by Moulton (1990) and others, prior National Park Service studies suggested that this Dismal Nitch sat immediately adjacent to the present-day site of the Megler Safety Rest Area–the place now called "Dismal Nitch" and mapped as such in the introduction of this report (NPS 2013; Ziak 2006). On the basis of that information, the Megler Rest Area was included in boundary expansion planning and ultimately acquired by the National Park Service. While this parking area has proven to be useful for interpretive purposes, it is also clear that the actual Dismal Nitch may well be located a

short distance to the east, in an area sometimes called Hungry Harbor. A historical report on the location of the Dismal Nitch is being produced concurrently with the current study, by Washington State Historical Society staff member Jim Sayce (in press); there may be some advantage in interpretation and commemoration at this alternative location, pending the results of Sayce's report.

Other matters may also require correction. There may be a need to revisit interpretation along some portions of the coastline, not the least of which is the content of Ecola State Park's Indian Beach interpretive trail pertaining to the forest conditions at the time of Clark's journey. The notion that the trees of Tillamook Head were only 100 years old at the time of Lewis and Clark's visit–a cornerstone theme for Oregon State Park's single interpretive trail in that location today–seems questionable at best based on the journal accounts and a variety of other evidence. Also, concurrent with the development of this report, the potential for interpretation at places such as the Ecola Creek village site (Necost) in Cannon Beach, where Clark and his party bartered for whale meat and blubber, are also being discussed between the National Park Service, local governments, and tribal representatives.

[15] Though the events of 1811 would be transformative, it is important to note that there was a prior attempt to construct a fort on the lower Columbia, only one year before. In that year, an expedition led by the American Winship brothers, Abiel, Jonathan and Nathan, arrived aboard the *Albatross*. They attempted to build a fort and gardens to support the growing ship-borne fur trade, while also seeking to bolster American claims in the face of what they perceived as a threat of Russian expansion. They started building their compound upstream from our study area, near Clatskanie. Being flooded by the Columbia and repelled by Native communities of the area, they returned home unsuccessful (see Jerzyk 1940).

[16] See Carey (1922: 211-12), who described the debacle in the greatest detail in comparison to other accounts, and included the burial. Hussey (1957: 11) made the thinly substantiated claim through his source Lucile McDonald, "State Seeks to Acquire Fort Canby..." that the ship's captain Jonathon Thorn wanted the Cape Disappointment vicinity as the site for Astoria. No other source mentions this, and in any event, this decision was that of the company partners, who surveyed the south side of the river and selected the present site for Astoria.

[17] His duties in Astoria complete, the captain of the *Tonquin*, Lieutenant Jonathan Thorn, ventured north to Nootka Sound to trade furs with the resident Nuu-chah-nulth. In the course of trade– probably on Clayoquot Sound, south of Nootka–Thorn tried his hand at trading. Unhappy with the prices requested for pelts, he insulted a Nuu-chah-nulth chief, ordering him off the ship and then tossing pelts in the chief's face to express his dissatisfaction. The tribe withdrew, returning later and attacking the ship, killing most on board. One survivor, James Lewis, coaxed a number of Nuu-chah-nulth onto the ship and then ignited the powder room, killing himself and many tribal members. In the end, only one member of the *Tonquin's* crew remained–this was Lamazee (or George Ramsey) reported to be the half Clatsop or Chinook man, who ultimately made his way back to Astoria to report the incident. Shortly after his return, a large flotilla of Kwakwaka'wakw canoes arrived at the mouth of the Columbia, throwing the residents of Astoria into a panic. Soon, though, it became clear that these northern tribes were guests of the Chinook, staying in the Baker Bay villages to trade and share in the season's salmon fishing (Seton 1993; Franchère 1851).

[18] Both the HBC and North West Company had sought to exploit divisions between tribal populations in order to maintain the upper hand. At Fort George, George Simpson noted,

"The great people of the Village are constantly at variance with each other, arising chiefly from jealousy of the attentions shewn them at the Fort; these misunderstandings are never attended with serious consequences we therefore keep them alive as by that means we know all that passes and have them in a certain degree under our control" (Simpson 1931: 104).

[19] Though Concomly was a Chinook leader and clearly of Chinook ancestry on his mother's side, various sources suggest that he was born and raised through much of his youth among his father's Quinault tribe on the central Washington coast. See, e.g., Rubin 1999: 23, 231.

[20] Some historians have suggested that "*daughters of the Chinookan nobility were the exceptions rather than the rule among Native wives of this generation*" (Lang 2008: 109).

[21] Hussey has suggested, similarly, that

"By marriage to the daughter of a chief or other prominent Indian, the European trader was often able to assure himself of the friendship and commerce of that man, his family, and his village, tribe, or group. Such a connection could sometimes also preserve the trader's scalp from unfriendly Indians. A native wife helped her husband learn the language of her group and kept him informed of local events related to his business. Equally important was the knowledge of wilderness lore among native women" (Hussey 1991: 266–67).

Some men, appealing to tribal traditions allowing polygamy, sought to maintain wives in multiple tribes for strategic advantages. Charles Wilkes wrote of encounters with Michel La Framboise, a prominent French employee of the HBC, who had arrived on the *Tonquin* as part of the Astoria party: "He has travelled in all parts of the country, and says that he has a wife of high rank in every tribe, by which means he has insured his safety" (Wilkes 1845: 349).

[22] For example, from the north, Quinault people still have oral traditions recalling visits by their ancestors to the fort in a manner recorded by Curtis:

"In summer the Quinault made ocean voyages to the Chinook country, stopping the first night out at Tshels (Point Hanson), and the second at Cape Shoalwater, and on the following evening rounding into the estuary of the Columbia. The Clatsop village Nu'sma'spu [Chief Walluski's village], on Youngs bay south of Astoria, was a favorite rendezvous for visitors from the north, on account of its nearness to the trading-post. Here the Quinault gave Makah canoes, slaves, dentalium shells, sea-otter skins, beaverskins, otter-skins, baskets, and a variety of coarse grass (probably bear-grass), in exchange for the goods of the white traders" (Curtis 1913: 11).

From the south, descendants of Tillamook chief Illga report that he "was a great trader, often taking canoe trips to the fort at Astoria to trade beaver pelts for trade goods from around the world," stopping at places such as the villages at Adam's Point (Fort Stevens) and the mouth of Ecola Creek along the way (Deur 2008: 35).

[23] Most, though probably not all, slaves were distinguished from the free people of the Columbia by the absence of a flattened head. Many early writers noted that "*The slaves... are not allowed to enjoy the benefit of this strange deformity; consequently their heads are left in their natural state*" (Lee and Frost 1844: 102).

[24] On this differentiation between race, class, and employment in the HBC, Kardas asserted that

"Almost all Whites and half-breeds were laborers or middlemen. Iroquois served frequently as bowsmen on canoes and probably spent the majority of their time traveling local runs. Natives served locally as interpreters, apprentices and laborers. Owhyees during the early years were used as middlemen; later they were more often employed as woodcutters, and laborers and a few are also designated as "pigherds." Since men were called up for various jobs as needed, even these assignments are tentative. From the mid-1840's onward increased emphasis on farming and lumbering kept most of the men near the fort" (Kardas 1971: 214–15).

[25]Hussey (1957: 11) cited T.C. Elliott (1918: 181–87) and McDonald, "State Seeks to Acquire Fort Canby..." 2, even though the entire episode merited nothing more than a footnote in Carey, *History of Oregon*, 247, who omits mention of Cape Disappointment in referencing the American captain's actions. He stated only that the captain (James Biddle) posted "*some sort of a notice upon the river bank, making claim apparently to more than mere property [Fort George] in question.*" Carey does not mention the actions by the British at Cape Disappointment. Fort George went back to the Americans as a condition of the peace treaty of 1815. Gray, *History of Oregon*, 20, quotes the British order restoring Fort George to the United States; F. Hickey, Captain of the HMS *Blossom* to J. Keith of the North West Company on October 6, 1818. The McDonald account of these events is also summarized in David P. Hansen's nomination of the Cape Disappointment Historic District, listed August 15, 1975, section 8, page 2.

[26] Though Nathaniel Wyeth had a clear bias against his competitors, the HBC, his accounts on this point may still be instructive:

"With the consolidation of the Northwest and Hudson's Bay Companies in 1821, the establishment of headquarters at Fort Vancouver, and the effective administration of Dr. John McLoughlin as Chief Factor west of the Rocky mountains British interests developed at a wonderful rate. It was claimed on the floor of congress that "shares in the Hudson's Bay Company, which originally were of the value of 20 pounds each, were now selling in the market at the enormous price of 200 pounds sterling." And again "that shares of that company have risen from sixty to two-hundred and forty pounds sterling." With the growth of English interests on the Columbia English claims to sovereignty grew apace. American operations were confined to irregular incursions by fur-trading parties and to traffic carried on with natives from the decks of vessels brought into the inlets of the coast. The British were establishing posts and extending a well-organized, lucrative and strongly supported trade" (Wyeth 1899: xv).

[27] Visiting Fort George on April *12th* 1824, John Scouler found that the site was almost completely abandoned:

"To-day we landed (well craved) at Ft. George, & were received in a very polite manner by Mr. McKenzie, the only gentleman at present at the fort. He informed us that the other gentlemen were employed in building a new fort, about 80 miles further up the river, at Point Vancouver, & Ft. George had been ceded to the Americans by the treaty of Ghent, & they were expected to take possession of it very soon" (Scouler 1905: 165).

[28] These American claims were dubious, in the sense that aboriginal title to Cape Disappointment had not been cleared, nor did the United States possess a recognized right to the Cape until many years later when the 1846 Oregon treaty between the U.S. and Great Britain was ratified by the U.S. Senate. The date of Ogden's "purchase" is in Hussey (1957: 13) as derived from T.C. Elliott, "Peter Skene Ogden, Fur Trader," *Oregon Historical Quarterly* 11 (September 1910), 261-262.

[29] In 1812, Ross Cox (1832: 116) – one of several travels to report visiting the fort - noted, "*I visited Fort Clatsop, and found the logs of the house were still standing and marked with the names of several of the party."*

[30] The exact number of dead in this attach is a subject of disagreement in the literature. Some sources suggest that the death toll was negligible, while others suggest that this was a major defining event in Clatsop history, effectively killing their traditional leadership. In the latter category, missionary John Frost noted in 1840,

"...the Clatsops and indeed all the Indians in this region, have properly no chiefs; they having all passed away. The last chiefs of the Clatsops having been killed by the Hudson bay company for the real or supposed murder of some of their men, which were thrown on this shore from one of their vessels, which was wrecked on the coast" (Frost 1934:140-41).

Oregon Historical Society interviews from 1899 with Clatsop woman Jennie Michel seem to corroborate Nehalem-Tillamook accounts of the attack recorded by Franz Boas' student, May Mandelbaum Edel in 1931 (Deur and Thompson n.d.). These suggest large numbers of casualties, and significant impacts upon the tribal population. Oral traditions regarding this attack persisted in some Clatsop, Tillamook, and Chinook families, and the story of this attack anecdotally appears to be of great importance to some Clatsop descendants today.

[31] Written accounts suggest a growing fatalism among some tribal members as their numbers continued to decline. For example, deSmet attributed a lack of new construction of houses among the lower Columbia Chinookans to this kind of despondency:

"The smallpox is the principal disease that alarms the natives; they are in continual dread of it, and imagining that they have a short time to live, they no longer build the large and convenient cabins to which they were formerly accustomed" (deSmet 1847: 123).

[32] In 1859, the U.S. Coast and Geodetic Survey reported, "*Chinook Point was the special location of the once powerful tribe of Chinook Indians and here the celebrated one eyed chief Concomly held sway. The tribe has dwindled to less a hundred persons - men women and children*" (U.S. Coast and Geodetic Survey 1859: 398).

[33] Sanler supposedly supported himself by operating a small vessel carrying freight on the lower river and resided midway between the future site of Ilwaco and the cape, at "Saul's Point," likely within the present state park. Hussey (1957: 14 n15) quoted McDonald on these details. The ovens are mentioned in the *Report of the Superintendent of the U.S. Coast Survey, Showing the Progress of the Survey during the year 1862;* 37th Congress, 2nd Session, House Executive Document 22, Serial 1165 [contains report for 1858], 358.

[34] As succinctly summarized by Dietland Muller-Schwarze (2011: 162), *"Afraid of the United States's control of the Pacific Northwest, the company launched a scorched-earth policy in the early 1820s to exhaustively trap all valuable fur animals, mainly beavers. They believed that the value of the land to immigrants would be greatly deprecated without beavers. Thorough extirpation of beavers was to create a 'fur desert' or cordon sanitaire."*

[35] As during the era of maritime exploration and seagoing fur trade, almost every part of Lewis and Clark National and State Historical Parks had a connection to the story of the land-based fur trade in the first half of the 19th century. The Chinook village at Middle Village/Station Camp was central to much of the history of interethnic trade, as was the Clatsop village formerly sitting at the modern site of Fort Clatsop. In addition to being home to the principal Native traders, these places were visited frequently by non-Native traders based in Astoria or visiting by ship. The fur trade history would certainly be included in any complete National Register nomination for these two places. Cape Disappointment and Ecola State Park were traversed by fur traders and Native hunters alike, and their shorelines were no doubt hunted for sea otter. Cape Disappointment and Fort Columbia/Station Camp were arguably the principal navigational landmarks used by almost every ship attempting to cross the Columbia bar during this period. Several park sub-units are associated with specific historical events of this period including: the loss of *Tonquin* crew upon their arrival in 1811 (Waikiki Beach at Cape Disappointment), the ceremonial proclamation of British and American territorial rights at the end of the War of 1812 (Cape Disappointment), the *William and Ann* sinking and HBC attack on a Clatsop village (Fort Stevens), the wreck of the *Peacock* (Cape Disappointment), and the proposed war between Britain and the United States in the 1840s (Cape Disappointment and Point Adams especially). Though not within park management, the former fort site at Astoria–including both private and public lands–has been designated as a National Historic Landmark on the National Register of Historic Places. This is the highest possible recognition for a historical site other than designation of a place as a unit of the National Park Service. Recent archaeological investigations at the former fort site have been facilitated in part by the research for the current study, and a separate report has been produced as part of the current study to detail the location, configuration and appearance of the fort over time (Watters, Deur et al. 2009).

[36] A few of these early families located to places that were part of the Lewis and Clark story and are still within the bailiwick of NPS interpretive mandates. For example, the Gervais family was the only family living in Cannon Beach at the Ecola village site during this period. The father, Ed Gervais, was the son of a French fur trapper tied to the fort at Astoria, and his mother was a daughter of Clatsop chief Coboway, while his wife Nancy Gervais was Nehalem. As reported by Gillette in 1863, "We reached Elk Creek at 10 a.m. I took a lunch with E.A. Jarvis, a half breed, who lives in an Indian hut, and has a squaw for a wife" (Gillette n.d. – July 9, 1863). They later moved to Seaside, joining other Native people at the community sometimes called "the Indian Place" near the modern Seaside High School (Deur 2008; McChesney 1969).

[37] Cannon (1995), Weathers (1989), Miller (1958), Lyman (1903), and Bancroft (1890a, 1890b), for example, provide good overviews of the lives of individuals who settled on park lands; the bibliography of the current report abounds with other sources containing biographical information on this well-documented period in regional history. Local historical societies and museums also maintain files regarding most of the individuals mentioned in this section.

[38] P.W. Gillette reports that he and an adjacent claimant, Thomas Scott, built a single cabin in the tiny forest clearing at the boundary of their lands. They both resided there during the laborious process of "proving up." They drew a line through the middle of the cabin and mostly resided on their respective sides of the line:

"The line running through the middle of the house enabled us to fulfill the requirement of the Donation law, that each claimant should reside upon his own land" (Gillette n.d. – January 14, 1861).

[39] There are many other aspects of White's biography that would warrant mention in a complete account. Born in New York in 1806, the year the Corps of Discovery returned home from the Columbia-Pacific region, White was a trained physician, who joined the Lee mission to Hawaii in 1836-37. Arriving in Oregon in 1837, White ultimately had disagreements with Lee (who later founded the Clatsop Plains Mission), departing with that mission and embarking on a number of different enterprises. He led the first sizeable wagon train over the Oregon Trail, consisting of 112 people, in 1842, then embarked on his work as an Indian Sub-Agent later that year. He participated in various meetings leading to the creation of the provisional Oregon Territorial government in Champoeg, and was given the task of carrying a petition from that government to U.S. Congress seeking to formalize American territorial status. By 1861, after the conclusion of his ventures at Cape Disappointment, he was assigned another Indian Agent position and departed for California (Hussey 1967b; Gray 1870).

[40] Meanwhile, a short distance upstream, the NPS Dismal Nitch area, so steep and lacking flat lands, was not the center of early settlement, only being reoccupied after the homesteading era for the construction of a fishing station.

[41] W.W. Raymond was part of an early and locally famous contingent of settlers – including Elbridge Trask - who arrived on Clatsop Plains in 1843. He served for a time as an Indian agent, administering the Clatsops residing in the area from his home on Tansy Point, and was somewhat infamous for his mismanagement of that temporary subagency (see Deur 2005). Indiana-born B.C. Kindred came to Oregon in 1844 and settled on Point Adams by 1845. His family was reported to still be occupying what remained of their original claim in 1889 (North Pacific history Company 1889).

[42] Indeed, Fort Clatsop's original location was determined by memory of its remains in an 1899 Oregon Historical Society expedition involving Carlos Shane, Silas B. Smith, Preston Gillette and others (See Shane 1900, Smith 1900).

[43] See English and English (1993). A number of homesteaders in rural areas would sometimes buy "town lots" near Astoria and other communities – to be used as a foothold in the town and sometimes as an investment. So too, urban dwellers sometimes acquired homestead claims to be used as hobby farms or recreational outposts. Olney and Adair are two prominent examples of this phenomenon.

[44] Though Taylor was not as widely known as Olney within the state, he was nonetheless the subject of various biographical writings, by virtue of his pioneer status and reputation as a solid character. As told to Fred Lockley by his son, Edward Taylor,

"My father, James Taylor, was born in Pennsylvania in 1809. When father was fourteen years old he went with his parents to Ohio. When he was twenty-one he taught school. Later, with his brother William, he ran a trading post in the Indian country. My father was married in Ohio in 1841. My mother's maiden name was Esther D'Armon. Father was appointed register of the land office at Lima, Ohio, in 1843. In the spring of 1845 father bought four wagons and some oxen and started with his wife and baby and a band of loose cattle for the Willamette valley. At The Dalles he met Samuel K. Barlow, who was building the Barlow road around the base of Mount Hood. He left his wagons at The Dalles, packing part of his goods on packing horses and driving his loose cattle around the south side of Mount Hood. They reached Oregon City on October 10, 1845. He and A. L. Lovejoy went into partnership and built a mill, which was washed away by the high water. Father had struck out for the shores of the Pacific, so he decided to go as far west as he could. He came to the mouth of the Columbia and found a settler who had taken a six hundred and forty acre claim, which he was willing to sell, so father bought it.

"When father came down to Clatsop plains he found that W. H. Gray, Ton Owens, R. W. Morrison and a few others had already settled here. The Astoria Golf and Country Club now owns part of father's original donation land claim. During the Cayuse Indian war father was stationed at Fort Waters. At the conclusion of the war he came back to Oregon City and reentered the sawmill business with A. L. Lovejoy and Medorum Crawford. The high water in the winter of 1849-50 carried the mill and their lumber away. The provisional legislature of 1848 appointed father director of the proposed mint. When Governor Lane arrived at Oregon City in 1849 to become the first governor of Oregon territory, he would not allow the territory to run a mint, so the mint was

operated privately, my father being one of the owners. They coined something over fifty thousand dollars in gold dust into five dollar and ten dollar 'Beaver' gold pieces.

"In 1851, when I was about three years old, we moved back to Clatsop plains. Father shipped stock to Victoria and to the Fraser river country. In 1856 father bought Sam C. Smith's claim in Astoria on Young's bay and Smith's point, which is now known as Taylor's Astoria. I was about seven years old when I started to school in the old pioneer Presbyterian church on Clatsop plains. Later I went to the parish school in Astoria, taught by Rev. Mr. Hyland and his wife...[after moving to Idaho at age 18] I came back to Astoria and went to fishing for the cannery. In those days the owners of the canneries agreed to take all the fish you could catch, at twenty-five cents each. I built two boats. I hired a helper to go with me in one and I rented the other. About a dozen of us young chaps in Astoria hired a house and a cook and kept a bachelor's hall. We made good money catching salmon at twenty-five cents each. Many's the salmon I have turned in for twenty-five cents that weighed from fifty to sixty pounds" (in Lockley 1928: 792-94).

[45] Gillette further notes that "*Mr. Lattie is a half breed Indian, who keeps a public house, and many resort thither, some for the ride, some to behold the scenery, and others to feast upon the fish...that is always found upon his table. His house is [located] ¼ of a mile of the ocean on the southern end of Clatsop Plains*" (Gillette n.d. – June 1, 1861).

[46] Gillette noted that members of his circle often hunted the meadows and estuaries: "*They are very plentiful on the moors, and are easily taken at high water in spring tides*" (Gillette n.d. – February 8, 1861).

[47] Later, when he had successfully if incrementally cleared a larger area, he would marvel at the results:

'When I look around me, and see the acres of this mighty timber that I have destroyed with my own puny arms, I am quite surprised. The man who clears an ace of this land, builds himself a monument that will exist as long as the country is in the hands of a civilized race. Many of us build such monuments, but alas: how few of us will leave our names inscribed upon them. And how few will be remembered" (Gillette n.d. – February 15, 1861).

[48] Gillette was no exception: "*Each year I enlarged the boundaries of my small farm a little. As fruit growing was the most profitable business in the country, I kept planting trees as fast as I could get land cleared*" (Gillette n.d. – January 14, 1861).

[49] Soil fertility has limited grass output on many of these operations so that, as highways took shape, a number of farmers have shipped hay and other feed to the coast to support grazing livestock.

[50] Preston W. Gillette was born in Ohio in 1825. He arrived in Oregon in September of 1852, and my March of 1853 settled his Donation Land Claim on the Lewis and Clark River. He sold his land in 1867, moving to Portland, where he married and made a small fortune in real estate investments. He died in 1905.

[51] Domestic varieties of the cranberry have been cultivated for commercial purposes for nearly 200 years in the United States, beginning in coastal New England. Commercial harvesting began in Cape Cod, Massachusetts, around 1816, spread to the Pine Barrens in southern New Jersey about 1835, and to the central portion of Wisconsin in 1853.

[52] One Long Beach Peninsula resident, however, attempted to cultivate native wild cranberries for mass consumption. John P. Paul, a carpenter by trade, planted wild vines on part of his property in 1869 but abandoned his efforts in 1878, after nearly a decade without success (Weathers 1983: 52).

[53] Charles McFarlin was the first to cultivate cranberries commercially in Oregon, setting out vines in Coos County in 1885 that were brought from his native Massachusetts. McFarlin, a Cape Cod grower, and his brother had developed the McFarlin variety of cranberry from wild vines. The McFarlin variety had larger berries than the native Oregon bog cranberry but did not ripen until October. McFarlin preferred earlier ripening varieties like the Black Veil and the Black Diamond so that he could get his berries to market ahead of east coast competitors. W.C. King of Sandlake, Oregon, started growing cranberries in 1893 and, by the turn of the century, was considered the "cranberry king" of Tillamook County (Allen 2006).

[54] Cranberry production had stalled in the Northwest for a variety of reasons. Absentee landowners, particularly in the Long Beach region, accounted for a large number of marshland owners. Preparation of marshland for commercial harvesting required a tremendous first-year investment of money and labor, and the investment could not be recouped for four to six years. Eastern vines imported for planting often developed mildew and pest infestations during shipping or, once planted, could not withstand Northwest climate and soil conditions. The demand for cranberries was limited to the Thanksgiving-Christmas holiday season, and the market was already adequately supplied by established bogs in the Northeast and Midwest (Weathers 1983: 46).

[55] Sinclair guided the state legislature in awarding funds to Washington State College (now Washington State University) to establish the Cranberry Investigations Laboratory at Long Beach in 1923. Horticulturalist D.J. Crowley was named director of the laboratory, later renamed the Cranberry and Blueberry Extension Unit. Crowley's major contribution to horticulture was in the area of frost injury prevention. After a few years of experimentation, Crowley developed a method to prevent frost damage using a sprinkler system. Crowley's idea was initially met with resistance because using water to prevent frost damage seemed counter intuitive to most growers. Today, however, sprinkler systems have become standard equipment for commercial cranberry growers and other fruit growers around the world. Crowley's contribution has been recognized by a cranberry variety named in his honor (Allen 1999: 13-14). When Washington State University moved to close the station in 1993, west coast cranberry growers formed the Pacific Coast Cranberry Research Foundation to purchase the facility. Washington State University continues to support the staff at the Long Beach Research and Extension Unit, and growers farm the bogs and maintain the buildings (Weilepp 2004: 2).

[56] Cranberry Canners, Inc., a growers' cooperative, formed the Cranberry Army Pool in 1943 to encourage its growers to pledge the sale of a portion of their annual crop to the government as part of the war effort (Cranberry Canners, Inc. 1943: 1). The cooperative issued certificates that read, "This is to certify that [grower's name] is a member of the Cranberry Army Pool and has pledged [XX] per cent of his 1943 crop to cooperate with the nation-wide effort that is being made by Cranberry Canners, Inc. to supply our Armed Forces with Cranberry Products" (Pacific Coast Cranberry Research Foundation 2004: 3).

The resulting increase in demand for cranberries during the early 1940s significantly expanded production on Long Beach Peninsula and other locations. Cranberry harvesting season is in September and October, and the earliest method was dry harvesting, that is, picking the berries from dry vines, by hand. Prior to World War II, the market for fresh cranberries was limited to Thanksgiving and Christmas, since berries harvested in the fall would spoil if stored any longer. Even though growers kept them in drying trays, moisture still damaged some before they could be sold during the holiday season (Pacific Coast Cranberry Research Foundation 2004: 3). Cranberry Canners, Inc. in Grayland, Washington, developed a dehydrator to dry freshly picked berries so they could be shipped to armed forces around the world, and reconstituted for use. This process allowed more fresh berries to be sold during and after the harvest period, and reduced fruit loss in storage (Pacific Coast Cranberry Research Foundation 2004: 3). Dry harvesting by hand was very slow and labor intensive, and the wartime shortage of manual labor prevented growers from keeping up with the increased demand (Pacific Coast Cranberry Research Foundation 2004: 3). Under the headline, "Pickers wanted to help harvest cranberry crop; twenty growers pledge to sell to government; yield expected to be very good," one Pacific County newspaper reported in 1943 that,

Harvesting of the peninsula's main crop of cranberries will get underway Monday, growers announced this week, appealing to everyone to spend all possible time in the bogs. Picking of Early Blacks and Centennials already has started, but the bulk of the peninsula's 400 acres will not be ready until next week...D.J. Crowley of the state college experiment station reports...the 1943 crop has possibilities of yielding 50 per cent more than last year. Growers are urging anyone wanting to pick to contact them and make arrangements for transportation if desired. A special appeal is made to experienced scoopers and pickers as they will be most valuable in getting the crop harvested. Pickers will be paid 45 cents a measure, which is an attractive price with the heavy set of berries ...All peninsula members of Cranberry Canners, Inc. have signed the Cranberry Army Pool, pledging their crop to the government. Other growers who wish to join the pool must first join the co-operative for the duration (Pacific Coast Cranberry Research Foundation 2004: 3).

While bringing an increase in demand for cranberries, the war also reduced the pool of potential labor to harvest the crop. This prompted growers to experiment with new methods to make harvesting more efficient, leading to the development of a variety of innovative equipment for picking and sorting (Pacific Coast Cranberry Research Foundation 2004: 3). Two types of harvesting machines evolved around Long Beach during and following World War II. One was designed to pick berries directly from dry vines. The other type dislodged berries from vines after the bog was flooded and the berries floated to the surface where they were "corralled." Today the latter method, called wet harvesting, is used almost exclusively on the Long Beach Peninsula, whereas growers in the Grayland area prefer dry harvesting methods (Pacific Coast Cranberry Research Foundation 2004: 6).

[57] Cranberry Canners, Inc., a cooperative of cranberry growers, was established in 1930 by the merger of three cranberry companies on the east coast. Cranberry Canners, Inc. became the National Cranberry Association in 1946, and then Ocean Spray Cranberries, Inc. in 1959. Cranberry production remained limited in Oregon until 1946, when the National Cranberry Association extended membership to Oregon growers (Allen 2006), and opened its first Oregon facility in Bandon the following year (Oregon Department of Agriculture 2001). Ocean Spray has processing plants in the three growing regions: several on the east coast and in the Midwest, and one in unincorporated Markham, Washington, near Aberdeen (Weathers 1983: 60). Markham is the location of Ocean Spray's plant used for processing sweetened dried cranberries and cranberry sauce, with an annual output of 20 million pounds of sweetened dried cranberries and 1.2 million cases of cranberry sauce (Ocean Spray Cranberries, Inc. 2013a). All west coast growers in the Ocean Spray cooperative send their berries to the Markham processing plant. Smaller receiving stations are located on the Long Beach Peninsula; in Bandon, Oregon, and in British Columbia (Weathers 1983: 59). According to the U.S. Department of Agriculture's National Agricultural Statistics Service, Oregon and Washington are respectively the fourth and fifth largest producers of cranberries in the United States, after Wisconsin, Massachusetts, and New Jersey. Oregon grows 5 percent and Washington grows 2 percent of the nation's supply (Boston Globe 2013). Among the 173 growers in Oregon, there are currently 2,500 acres under cultivation, and harvest yield is about 40 million pounds of fruit per year (Ocean Spray Cranberries, Inc. 2013b). Most of Oregon's cranberries are produced in the Bandon area where the McFarlin variety is still popular (Allen 2006). Oregon's largest export market is Japan, which began to show an interest in cranberry products once the nutritional benefits of the berries became more widely recognized (Oregon Department of Agriculture 2001).

[58] In a 1993 study researchers sought to identify remnant habitat approximating conditions prior to Euroamerican settlement along the floodplain of the lower Columbia River. About 143 river miles were examined in both Oregon and Washington, between Bonneville Dam and the mouth of the river, as well as lower portions of several rivers (Christy and Putera 1993: 10). The study found that,

"*Elymus mollis (American dunegrass community). This species was once the dominant native grass on coastal foredunes. Although it was planted sparingly in dune stabilization programs beginning in 1916, it has been largely displaced throughout its range by the more aggressive European beachgrass (Ammophila arenaria), the species most commonly used for stabilization.*

Festuca rubra (Red fescue dune community). Red fescue was a common sod-forming grass of open, stabilized sand dunes on the outer coast. It was the dominant grass on the Clatsop Plains at the time of settlement, but overgrazing and trailing by livestock destroyed the sod and caused new dunes to form. Like American dunegrass, it was planted occasionally for dune stabilization, but has been displaced largely by the more aggressive European beachgrass" (Christy and Putera 1993: 10).

Nearly a century after the first efforts at dune stabilization in the Pacific Northwest, Sand Island, Oregon, contains perhaps the last remaining, unstabilized sand dunes on the lower Columbia River. West Sand Island hosts the only example of coastal sand dunes stabilized with native vegetation on the Columbia River. Such vegetation is very rare elsewhere because introduced species have displaced native grasses (Christy and Putera 1993).

[59] The implications of the history of settlement and agriculture for the National Park Service are diverse. The interpretive value of the settlement and agricultural history of park lands is certainly vast. The non-native plants found throughout the park are in part a product of this history, and there are remnant agricultural landscapes worthy of interpretation. Remnants of the estuarine diked tidelands can be found on the eastern edge of the Fort Clatsop sub-unit of the park, and there are

defunct cranberry bogs on its southern edge as well. The National Register implications of this history are uncertain. None of the places in the park are likely to warrant National Register listing solely on the basis of their settlement and agricultural history, in part due to their general absence and in part due to the lack of integrity at those historical agricultural properties that do exist.

In each case, the major structures and agricultural landscapes associated with the early occupation are all but gone, overrun by later development or by some conspiracy of weathering and revegetation. Perhaps more significantly, in several of the sub-units of LEWI, we have various former agricultural (and non-agricultural) homesteads. For example, there is the Shane homestead at Fort Clatsop. With almost the entire claim overgrown by young spruce forest, clear remnants of orchards and vegetable cultivation from the Shanes' era are non-existent. Similarly, there are few traces of the homesteads or land clearing and cultivation efforts of these early settlers. Here, too, the history of these sites and their connection to regionally important figures in 19th-century Northwest history might not warrant National Register status, but is certainly worthy of interpretive treatment. Take for example the Elijah White homestead on Cape Disappointment. The homestead is more of interest for its historical linkages to White's peculiar personal history and the story of military preemption rather than to general themes of settlement and agriculture.

So, too, the Fort Columbia and Station Camp sites provide ample opportunity to discuss interethnic marriages of the fur trade era (such as the Scarborough, Ducheny, and Lattie families who occupied these lands) and the transformative influences of religious missionization on Native lives and economies (especially the Lionnet mission). The Lattie claim at the Salt Cairn provides an opportunity to discuss that family's history and the complexities of Native American life in the period of agricultural reoccupation and early resort development. While none of these stories may be deemed "nationally significant," they are pivotal to certain moments in local history. They also provide a revealing glimpse into the processes by which the lives, landscapes, and economies of Native people and the fur trade era were overwhelmed by a flood of new people and interests in the region through the second half of the 19th century.

[60] As Weathers notes,

"*McGowan operated a business in Portland for many years before moving to his claim permanently around 1861. From the start McGowan engaged in salmon salting and established the earliest salmon packing company in the state*" (Weathers 1989: 40).

[61] In the 1920s, the water quality of the bay declining from mill effluent, the oyster farmers of Willapa Bay began to use the Japanese "Pacific oyster" (*Crassostrea gigas*). The highly invasive Saltmarsh cordgrass, *Spartina alterniflora* from the Atlantic coast of America, used as a medium for shipping imported oyster stock would later overrun vast areas of the Willapa shoreline, continuing to be a highly invasive species today. The early development of oystering was hugely important on Willapa Bay, but had broader implications: these early oyster operations and common law arrangements for tideland claims contributed to Washington state tidelands law after the state was founded in 1889. By the early 20th century, oysters bound for the Portland market were sometimes shipped from Long Beach Peninsula communities by rail to the Megler dock before being loaded onto boats – one of the few direct connections between the industry and park lands. The oyster industry has continued to be robust on Willapa Bay, and it remains one of the major production areas nationally (Espy 1977; Swan 1857).

[62] Some sources suggest that the Humes' expectations of Columbia River salmon runs were exaggerated by what were record high salmon numbers in the 1860s, caused in part due to the decimation of local Native American groups, which had reduced fishing pressure along the river in the preceding decades (Friday 1994).

[63] Rudyard Kipling famously described the Chinese factory workers of the lower Columbia in grim, almost hypnotic prose, riddled with the racist values of his time: *Only Chinamen were employed on the work, and they looked like blood-besmeared yellow devils as they crossed the rifts of sunlight that lay upon the floor. When our consignment arrived, the rough wooden boxes broke of themselves as they were dumped down under a jet of water, and the salmon burst out in a stream of quicksilver. A Chinaman jerked up a twenty-pounder, beheaded and detailed it with two swift strokes of a knife, flicked out its internal arrangements with a third, and case it into a blood-dyed tank. The headless fish leaped from under his hands as though they were facing a rapid. Other Chinamen pulled them from the vat and thrust them under a thing like a chaff-cutter, which, descending, hewed them into unseemly red gobbets fit for the can.*

"More Chinamen, with yellow, crooked fingers, jammed the stuff into the cans, which slid down some marvelous machine forthwith, soldering their own tops as they passed. Each can was hastily tested for flaws, and then sunk with a hundred companions into a vat of boiling water, there to be half cooked for a few minutes. The cans bulged slightly after the operation, and were therefore slidden along by the trolleyful to men with needles and soldering-irons who vented them and soldered the aperture. Except for the label, the "Finest Columbia Salmon" was ready for the market. I was impressed not so much with the speed of the manufacture as the character of the factory. Inside, on a floor ninety by forty, the most civilized and murderous of machinery.Outside, three footsteps, the thick-growing pines and the immense solitude of the hills. Our steamer only stayed twenty minutes at that place, but I counted two hundred and forty finished cans made from the catch of the previous night ere I left the slippery, blood-stained, scale-spangled, oily floors and the offal-smeared Chinamen" (Kipling 1891).

[64] Salmon stop eating and begin to live on stored adipose tissue as they move into freshwater, so that they are often dilapidated and the meat quality much diminished by the time they reach their destination; while many fish may still be in marketable condition well into their journey, those fish at the river's mouth are almost invariably in good condition, creating strong incentives to early cannery owners to concentrate operations on the estuary.

[65] Nearly all the early Finnish migrants to the town were young men, most of them single. Of the 173 Finns living in Astoria in 1880, only 18 were female (Hummasti 2002: 139). The practice of employing women in the Astoria salmon canneries apparently began as early as 1878, and women would have expanding roles in the years ahead.

[66] While the most productive areas were concentrated around the mouth of the river, gillnetters from the butterfly fleet could be found as far upriver as The Dalles-Celilo area. Gillnet fishing was a highly successful means of salmon fishing, however. For example, according to records from the 1892 fishing season, the commercial fishery harvested 2.5 million salmon, including 916,833 Chinook salmon, 464,926 steelhead and 63,505 coho salmon. Of the salmon harvested that year, roughly half came from gillnet fishermen (Allen 2006; Johnson 1997; Tucker 2003). As noted, these fishermen often competed with the fish packers in the region, because the packers frequently controlled the seines, traps and wheels also used to fish salmon. While these other technologies were rather large operations, gillnetting required only an owner/operator and possibly a crewmember or two (Martin 1994:17). Gillnetters worked in rough conditions, battling the elements especially around the dangerous mouth of the Columbia. It was not uncommon for fishermen of the butterfly fleet to sustain injuries or drown (Tucker 2003; Andrews and Larsen 1959).

[67] The US Fish Commission commented on the variety and styles of cans and labels used in the 1895 pack,

In the early days of canning, the labels were severely plain and were put on the cans by white women. By 1895 very few women were so engaged and Chinese labor monopolized every part of the work connected with the canning of salmon. Much attention is given to variety and styles in cans and labels, which yearly show improvement in style and design. Sixteen varieties of cans were used in the pack of 1895 (Wilcox 1896: 587).

[68] The fishing industry of the Pacific states as a whole engaged more than 17,300 persons in 1895; percentages by state were as follows: California 27.5%, Oregon 36.5%, Washington 36% (Wilcox 1896: 575). Of that number, just over 3,300 persons were employed in the 47 canneries of the US Pacific coast. The percentage of fisheries workers employed in canneries, and the total number of canneries were, by state: California 6% in four canneries, Oregon 59% in 26 canneries, and Washington 35% in 17 canneries (Wilcox 1896: 580). Over 12,300 persons of the Pacific states were engaged in fishing in 1895, more than half of whom fished the Columbia River. The capital invested throughout the region was $4,647,324, of which 70% ($3,264,630) represented the business of the Columbia River. The aggregate catch was 86,774,000 pounds, with a value to the fishermen of $2,438,000. Of these amounts 46,405,000 pounds, worth $1,810,000, were taken on the Columbia River. The yield of Chinook salmon was upward of 38,000,000 pounds and that of silver salmon 22,000,000 pounds (Wilcox 1896: 577-78).

Nearly a decade later, the fishing industry journal *Pacific Coast Fisheries*, described the primacy of fishing in Washington's economy in 1902,

"Measured by the value of its annual output, the fishing industry is the greatest industry in Washington. The total value of the product of the fishing industry for the year ending November 30, 1902...is greater than the total coal output of the state...greater

than the total value of the lumber output, and slightly exceeds the value of the great wheat crop of Eastern Washington. These four industries are the most important ones followed in this state, and their order of importance is: fisheries, wheat raising, lumber manufacturing, coal mining...and that too despite the fact that the persons employed in the [fishing] industry were employed on the average of not above 60 days during the year" (Pacific Coast Fisheries 1903b: 7).

[69] On the general outline of McGowan's early history as a cannery town, Weathers notes,

"McGowan changed over to canning salmon around 1884 when he admitted his four sons as partners and changed the name of the business to McGowan and Sons. The settlement that grew up around company holdings was known as McGowan in honor of the owner. A post office was established on March 7, 1901, and continued in operation until April 15, 1939. In 1904 McGowan built and paid for a church near his cannery. The church was dedicated as St. Mary's Catholic Church on May 20, 1906, and is still a north shore Columbia River landmark" (Weathers 1989: 39).

[70] Appelo (1966) notes that Megler was born in Germany in 1839, moving to New York as a child to live with an uncle after the death of his parents, where he learned to be a tinsmith. He fought in the Civil War, then moved to Astoria to assist his brother who ran a hotel there. He soon entered the cannery business, and later became a longstanding Washington state legislator, representing Pacific and Wahkiakum counties.

[71] Kinney was Iowa born, raised in Oregon's Willamette Valley, but reputed to have entered the salmon business after witnessing first-hand the high prices being paid for salmon in London England markets.

[72]Chinese quarters are sometimes mentioned in reference to the Megler operation, but little specifics were recovered in the course of this research (Jeff Smith pers. comm. 2013).

[73] Appelo's (1966: 14) interviewees suggested that

"the place known as Megler was a fishing station built by Marshall Kenney (of Astoria) in 1880 and was taken over by Megler in 1883. This he always called Hungry Harbor, so named from it being a thoroughly landlocked piece of deep water and the fishermen used to run in there out of the wind to cook their coffee and eat their lunch."

[74] According to an article in *The Oregonian* appearing a year after the formation of the CRPA, with an investment of two million dollars the CRPA acquired the Astoria canneries of J.W. and V. Cook, B.A. Seaborg, J.O. Hanthorn & Co., Fishermen's Packing Company, Elmore & Co., M.J. Kinney, and George and Barker (Oregonian 1900:8). Elmore's Astoria plant served as the main canning location, whereas the other canneries were used for purposes such as office space and cold storage (USNPS n.d.). Hammond and his agent, Edwin Stone, served on the first board of directors of the company, along with Elmore, George H. George, J.O. Hanthorn, B.A. Seaborg, J.W. Cook, M.J. Kinney, Hammond, T.B. McGovern, C.W. Fulton, G.C. Fulton, and William Gosselin. William Barker served as superintendent of the canneries until his brother, Fred Barker, replaced William when he died in 1913. George replaced Elmore as manager upon his death in 1910 (Martin 2013).

[75] In 1878, Elmore had first entered the Columbia River canning industry, partnering with Joseph Hume in the development of a new cannery in Astoria. Elmore bought out Joseph Hume's interest in their shared venture and proceeded to build a second cannery on the lower River by 1881.

[76] Smaller rudders replaced large sailing boat rudders, the centerboards of the butterfly fleet boats were removed, shaft logs were "plastered" on, and a protective "basket" was rigged around the propeller (Andrews and Larsen 1959). Eventually, sails were entirely removed as the gasoline-powered boats rendered them unnecessary. The new boats were more cost-effective, because they could make more "drifts" than the sail-rigged butterfly fleet boats. By 1931, bowpickers were equipped with a power roller in the bow, which rendered a crew unnecessary and allowed gillnetters to run a one-man operation (Martin 1994:16).

[77] While the Humes and their cannery owning peers generally moved north, into the rich fishing waters of the north, a few cannery owners also moved south to untapped waters between the Columbia and San Francisco Bay. R.D. Hume, for example, famously developed a sprawling cannery complex at the mouth of the Rogue River, at Gold Beach, on the south coast of Oregon (Dodds 1959).

[78] In the early years of the CRPA, also known as "The Combine," a fair amount of tension arose within local communities regarding the organization. As *The Oregonian* reported in the winter of 1900, long-time cannery operators in Astoria were dissatisfied with the way that the CRPA was performing and affecting their business. The CRPA's inability to control cannery output and prices, they suggested, forced cannery owners, such as Seaborg, Kinney, Hanthron, George and Barker, off the Columbia and into the Puget Sound, causing over one million dollars in investments to move from Astoria to that area (Oregonian 1900:8). Editorials of the day also railed against the involvement of Hammond, a businessman with ties to the East, in effectively shifting the administration of the Columbia River salmon canning industry to New York investors and managers instead of Portland (Martin 2009; Oregonian 1900).

[79] The lead author has conducted research with Alaska Native elders who can still clearly recall the use of these boats in such places as the lower Kvichak and Naknek Rivers, as well as the larger Bristol Bay estuary of which they are a part. In some cases, Native fishermen operated these boats much later than most, as more affluent, usually non-Native fishermen began to gain access to modern, motorized boats. In some cases, the use of such boats was extended by regulations prohibiting motorized boats in certain protected waters. Native peoples were central to the early cannery efforts in these places, where Native populations were still high but local non-Native populations were often sparse (see Deur 2013).

[80] Transamerica Corporation acquired a controlling interest in 1946, and in 1959 the CRPA division of Transamerica partnered with Wards Cove Packing Company, becoming the largest salmon packer in the world. In 1960, this company changed its name to Bumble Bee Seafoods, Inc. after Hawaii-based seafood giant, Castle & Cooke, acquired the company through a merger (Bumble Bee Foods, LLC. 2012; Martin 2013, 2009). The company continued to undergo structural changes in the 1970s, moving its headquarters from Astoria to San Francisco in 1975; two years later, the company acquired a tuna cannery in Puerto Rico, a fishing base operation in Ecuador, as well as Harbor Industry cannery in San Diego. Today, the company operates out of San Diego as Bumble Bee Foods, LLC. and is owned by Lion Capital, LLP (Bumble Bee Foods, LLC. 2012). Though the company has moved away from its original home and shut down Astoria canning operations in 1980, the history of the CRPA is still visible there. In 2003, Bumble Bee employees established the Hanthorn Cannery Foundation at the former Hanthorn Cannery, which houses Astoria's Bumble Bee Cannery Museum; this is the the oldest cannery building still standing on the Columbia River, and indeed the oldest waterfront structure still standing in Oregon ("Astoria Oregon" n.d.; Martin 2013). In order to continue to preserve the rich salmon canning history of the Columbia River, the Foundation is also currently attempting to create an interpretive center and a Cannery Woman's Memorial Park in Astoria ("Astoria Oregon" n.d.).

[81] The exact antiquity of the remaining piers remains ambiguous, though they do largely match the general configuration described in the 1943 CRPA insurance reports for the site and may largely date from early CRPA ownership of the site.

[82] Two NPS locations that are especially appropriate for the interpretation of Columbia-Pacific fishing history are Station Camp and the NPS "Dismal Nitch." Both were integral to the story of salmon harvesting on the lower Columbia. Regrettably, little remains of the original structures associated with salmon canning at these sites–remnant pilings being the main landmark visible today. These pilings, while of great interpretive value, do not have the integrity required for National Register listing. At Dismal Nitch, no structures remain and the site is apparently not of sufficient historic significance to warrant National Register listing (AINW 2005). The ancillary structures at Station Camp–the McGowan church, office and home–all date from after the golden era of salmon canning, and are only tangentially related to the industrial story told here. They do, however, have local significance worthy of documentation and commemoration (Wilson et al. 2009). Likewise, the story of the rise and fall of the salmon industry on the lower Columbia is a significant element of the region's history and will continue to be a mainstay of local historical commemoration and public interpretation for the foreseeable future.

[83] Elsewhere, P.W. Gillette noted,

"In 1852, R.M. Moore built at Fort Clatsop the largest steam saw mill then in Oregon. The mill stood on the bank of the river about 500 feet east of the Lewis and Clark fort. In cutting down timber for the mill, a bullet was found in one of the trees with 48 rings of annual growth outside of it, marking the exact number of years since they were there. Large quantities of lumber were shipped from this mill. I have seen five vessels loading lumber there at one time. It might not be amiss to mention the name of William

Irwin, the nephew of R.M. Moore, and afterwards governor of California, who worked this mill. He was "Bill" Irwin then and drove an ox team, cut saw logs, and did all sorts of work around the mill" (Gillette 1896).

[84] Some early logging operations used "jack screw" logging, cutting down trees to serve as rollers for trees that would be felled subsequently, rolling with gravity down to tidewater – a practice later refined into the "skid road."

[85] To be sure, the landscapes of early industrial logging, harvested and most replanted, abound throughout the study area and make up the better part of Clatsop, Pacific and Wahkiakum Counties. Other landscapes of industrial forestry can be seen, associated with these developments. In places where donkeys once pulled trees on low leads across the forest floor, this sometimes pulled away the topsoil; as a result, red alder – a tree with nitrogen-fixing root nodules, uniquely capable of occupying disturbed soils – often extend in radial patterns, spider web-like, centered on the site of the originally donkey, for example. Here too, these landmarks have stories to tell.

[86] Initially, many of the region's small-scale lumbermen were not interested in following Benson's innovative model. According to daughter Alice:

"Donkey engines had been profitably used in California for a number of years, but in the Northwest the engines had so far not been successful. Old-timers shook their heads and said, 'It is heresy to log with steam instead of oxen.' Despite the warnings and evidence to the contrary from other camps, Father was convinced that steam was practical" (Allen 1971:29).

After several successful years, other timber companies began following Benson's trend, building logging railroads into the small valleys of the Pacific Northwest previously untouched by the industry. In fact, the lower Columbia River estuary was one of the most heavily logged regions in Oregon by 1900, and by 1905, Washington produced the highest levels of lumber production in the country, while Oregon was a close second (Abbott 2004; Tucker 2002).

[87] These initial cigar rafts were assembled in the Wallace Slough near Clatskanie and brought to sea in the summer to begin the journey south to California. The rafts moved at a pace of no more than sixty miles a day, but they also carried freight such as shingles, telephone poles and finished lumber on their decks (Binus 2004; Crawford 2008). While Benson took a great risk in experimenting with this new technology, ultimately his invention of ocean-ready log rafts saved his company about $150,000 dollars a year, with two to six rafts arriving in San Diego each year (Crawford 2008; Flores and Griffith 2002a). Benson was an inspiration to other loggers along the lower Columbia River, however as a 1906 issue of the *Oregon Daily Journal* reports:

"The immensity of the stake that Benson is playing for is expected to tempt others into the hitherto untried field of ocean rafting of sawlogs. Others have in a measure succeeded in rafting piling by ocean from the Columbia River to the south coast, but never before has the sawlog project been attempted. Mr. Benson has had the courage to invest a large sum of money at San Diego in a sawmill plant that will be practically worthless should the ocean rafting industry prove unsuccessful. The large element of chance in the undertaking will, it is believed, deter others for a few years, at least" (Oregon Daily Journal 1906: 5).

[88] Upon retiring from the timber industry in 1911, Benson sold off a significant portion of his assets, choosing to turn his attention to civic matters in Portland and the Columbia Gorge. He was instrumental in the development of a number of hotels as well as contributing to the Multnomah Falls Recreation Area and the Columbia River Highway – a National Historic Landmark of tremendous regional importance.

Between 1909 and 1911, Benson decided to retire from the lumber business. He began selling off all of his landholdings in Clatskanie and San Diego at the price of $4.5 million (Abbott 2013; Binus 2004; Oregon Historical Society 2009). According to a 1916 article in the *Sunday Oregonian*, upon his retirement, *"Mr. Benson had title to one of the largest and finest bodies of timber in the state, his total holdings aggregating more than 45.000 acres, lying in almost a compact body in Columbia County"* (Sunday Oregonian 1916: 5). In his retirement, Benson oversaw construction of the Benson Hotel and the Columbia River Gorge Hotel near Hood River, Oregon. Benson was also instrumental in the creation of the National Historic Landmark, the Columbia River Highway, a 100-mile route that allowed for automobiles to travel from the mouth of the Columbia River, through the Cascade Range and into eastern Oregon. Benson also purchased 400 acres of land in the Gorge near Multnomah Falls and Wahkeena Falls in order to establish public parks in the area. Additionally, Benson

donated twenty bronze drinking fountains to Portland after Prohibition came to the city in 1916. In 1916, Benson donated $100,000 to the Portland School District to build Benson Polytechnic School, and Portland State University is home to another of Benson's landmarks, the Simon Benson House. Constructed just after 1900 on the corner of SW 11th and Clay in downtown Portland, the house was moved in January of 2000 to its current home at 1803 SW Park on the Portland State University campus, where it houses the PSU Alumni Association and the university visitor center (Portland State University 2013; Oregon Historical Society 2009; Flores and Griffith 2002b, 2002a; Horn 1965; Oregon State Parks n.d.).

[89] Today, Clatsop County has the most consolidated private land ownership among all 36 counties in Oregon – in 1991, just four companies controlled half of its 533,000 acres – while across the river, Pacific and Wahkiakum counties display a similarly concentrated pattern of land ownership.

[90] In addition, Congress allowed for an "indemnity" limit another 10 miles wide on each side of the primary grant, so that land "lost" due to preexisting claims or government reservations within that limit could be taken by the railroad inside the added strip. Through a legislated amendment signed into law on May 31, 1870, the Northern Pacific was granted a "second indemnity" strip of 10 miles in certain places where land could not be taken by the railroad in either the primary or "first indemnity" strips. This second line also affected western Washington and northwestern Oregon, but not until 1910 or so–almost 50 years after passage of legislation authorizing the initial grant.

[91] To be fair, the fixed price discouraged settlement on these lands, or the sale of such lands to settlers, since it amounted to no less than double the cost of government land available through the Homestead Act of 1864 and other public land laws.

[92] A government report by the Bureau of Corporations assembled charts and maps compiled from field work during the period of 1907 to 1910 and subsequently printed a three-part document that described the degree of concentrated timber land ownership in the Pacific Northwest and compared it with other forested regions of the United States. Its characterization of Washington and Oregon was that most private ownership of timber was held by Weyerhaeuser and a few other large concerns. At one point in the report, its authors used testimony from residents to provide a picture of the local situation at that time:

"*Weyerhaeuser absolutely controls all the timberland in [Pacific County]. They are a hard company to deal with. You cannot cross their land without paying them about what the land is worth. In the southern part of the county they will not sell any of the timber*" [U.S. Department of Commerce 1914a: 14).

[93] Oregon led the nation in use of the Timber and Stone Act, where it contained fully 30 percent of the total acreage disposed of in this way, or 3.8 million acres. To apply for land under the Timber and Stone Act, a claimant only needed to sign an affidavit at the time of application stating they intended to "appropriate it to his own exclusive use and benefit." Fully one-tenth of all private ownership in Oregon was patented in this way, mainly because a timber claim involved no residence or even pretense that one and the transaction involved only cash. Despite the provision for "exclusive use and benefit," the courts ruled that a person could sell their claim between initial filing and issuance of the patent. This allowed some people to double their investment in 90 days, especially in areas where lumber companies or timber brokers were actively buying. More than four-fifths of the acreage (3.08 million) purchased under this legislation in Oregon came during the boom decade of 1900-09 (O'Callaghan 1979).

[94] In truth two of these "scripper acts" directly affected the study area, beginning with a rider on an appropriations bill passed in 1897. It contained a provision that any tract located within a federal forest reserve (later known as "national forest") covered by a "bonafide unperfected claim" could be relinquished by an owner who might then select "in lieu" any tract open to settlement. Lieu selections often came in blocks outside of forest reserve boundaries, usually unsurveyed lands that private timber cruisers had identified as far more productive than what the government wanted to retain as forest reserves. The "forest lieu" provision was changed to allow acquisition of only surveyed lands on March 3, 1905. A second measure passed as part of the appropriations act in 1898 allowed the Northern Pacific to take any odd-numbered section not valuable for mineral or stone, in any state or territory in which its railroad grant existed when the NPRR relinquished its rights in any unsurveyed sections within its original grant, upon which there was a valid claim. Even more generous was the act establishing Mount Rainier National Park in 1899, where the NPRR gave up its sections located inside

the park and in the adjacent Pacific Forest Reserve in order to receive "in lieu" any nonmineral lands situated in any state through which the railroad passed. All three acts allowed the Northern Pacific and other entities to sell their rights to lieu lands through "scrip" that, in turn, became a popular way to buy timber. Syndicates organized for the purpose of buying timber land in virtually unlimited quantity, were waiting as the scrip became available, having already had the vast tracts of forest cruised to find the choicest parcels.

A fourth means to obtain timber land still in the public domain proved to be a favorite way for the syndicates or "rings" to "block up" holdings and thus increase land values, by including them in larger chunks so that the chances of logging became greater and protection costs dropped. More evident in Oregon than in Washington, it involved selling school lands (sections 16 and 36 in every township) for $1.25 per acre. When this was done within areas that became national forest, "school indemnity" represented an easy way to acquire "base" from which to make lieu land selections on public domain still open to "settlement." This method also stimulated a type of land fraud where schemers acted on inside information about boundary locations of the forest reserves so that they could quickly purchase prime school sections.

[95] The Oregon Central was purchased by Ben Holladay in 1870 and then merged with the Oregon & California Railroad.

[96] Hammond's line was later swallowed by the Northern Pacific in 1907, which combined with the Great Northern to complete the Spokane, Portland and Seattle (SP&S) line that ran along the north bank of the Columbia to Pasco and then to Spokane. As for the Astoria & Columbia River Railroad, Hammond negotiated a 99 year lease for use of the NPRR track from Goble to Portland. Without a land grant as incentive, Astorians provided Hammond with 3,000 acres near Astoria and 1,500 acres at Flavel to cover construction costs. The railroad discontinued passenger service in 1952; Corning (1956: 14).

[97] Most of Smith's holdings were assembled by use of the Timber and Stone Act, but some of it fraudulently, according to Puter and Stevens (1908: 33).

[98] Two separate groups of investors were delineated in the Bureau of Corporations' volume, *The Lumber Industry, Part 1,* (1913: 94). One group of timber land owners in Clatsop County were intermediate-sized companies, at least in 1914, with each landowner (there were 17 of this category statewide) having from 5 to 13 million board feet nationally. The other group was dispersed over a wider area of the county than the first three: these were smaller-scale landowner companies (there were 38 statewide) which could claim in the neighborhood of between 3.5 and 5 billion board feet nationwide.

Putting these figures into context, the U.S. Geological Survey paper titled *The Forests of Oregon* in 1902 provided the only reliable estimates of volume for that time, but designated Clatsop and adjacent Tillamook counties as having the two highest average stands of merchantable timber per acre of any in the state. Clatsop placed second (at 37,400 board feet per acre, as opposed to 39,500 in Tillamook), but fourth overall (at 16.7 billion board feet) despite being a relatively small county by Oregon standards. The investigators described it as covered by forests, where little cutting had been done, and the burned areas (although numerous) were small [in contrast to Tillamook County] and collectively amounted to less than five percent of county area (U.S. Dept of Commerce 1914a, 1914b; Gannett 1902: 18).

[99] Prior to the strike, Congress established the Aircraft Production Board in May of 1917 to oversee all issues pertaining to combat aircraft production. According to an August 1917 article in *The Timberman*, the Board then formed with War Emergency Spruce Council, which then formed the Pacific Aircraft Spruce Production Board. In May of 1917, the Board sent Major Charles R. Sligh, a furniture manufacturer turned military serviceman from Grand Rapids Michigan, to Portland in hopes of garnering an understanding of the spruce situation in Washington and Oregon. Though Sligh did not report back on the labor disagreements in the industry, he did suggest that government intervention would be necessary in order to meet the lumber needs of the Allies (Tonsfeldt 2013; Crosman 2011).

[100] While the entire Pacific Northwest region was crucial to the success of the SPD, the lower Columbia River region played a vital role in the Division. The SPD headquarters, which housed Disque and his staff, were located at the Yeon Building in downtown Portland. (This building was constructed in 1911 according to a design by John Baptiste Yeon, father of the celebrity architect John Yeon and his brother Norman, the original owner and builder of the Yeon House now managed as part of LEWI.) Spruce soldiers stationed at the headquarters were lodged in downtown Portland, as well. The Vancouver

Barracks, located in Washington across the Columbia River from Portland, was the location of the military command for the SPD. Just over a month after the formation of the SPD, the Vancouver Barracks transformed into the location of the Cut-Up Plant, a main Division spruce sawmill (Evans and Williams 1984:6). Construction of the plant began in mid -December of 1917, and by February 7, 1918 the facility opened with a ceremony, which Disque attended along with his wife. The plant acted as a re-manufacturing mill that cut cants and flitches of spruce, fir and Port Orford for airplane manufacture. While remanufacturing mills were common at the time, the Vancouver Cut-up Plant was unique in that it represented a rare instance of the military taking part in industrial production (Tonsfeldt 2013).

Vancouver Barracks was important not only for the Cut-up Plant, but also the role it played in soldiers' lives during the War. SPD officers and soldiers were stationed at Vancouver Barracks at all times, and tents and temporary structures were set up as accommodations for them. Additionally, spruce squadrons used the Barracks for induction services, medical purposes, uniforms, pay and a variety of other needs (Tonsfeldt 2013:54). In addition to the Vancouver Barracks, SPD soldiers were scattered throughout the lower Columbia River region in a variety of different camps. For example, the Clatsop District of the SPD had 3,342 solider assigned to it as of November 1918 (Evans and Williams 1984:A-2).

[101] Disque sought to counter the influence of the IWW in various ways, including the creation of a separate union that promoted patriotism and cooperation between mill workers and mill owners, as well as loggers and lumbermen. This new union, formed in 1917, was dubbed the Loyal Legion of Loggers and Lumberman, or the "4Ls" (Military Order of the World Wars 2011:9; Williams 1999:7). Captain Maurice E. Crumpacker, an attorney from Portland, was put in charge of the new union. Though both laborers and management rejected the 4Ls at the onset, Disque's power of persuasion plus strong nationalist sentiments led to broad public support of the union within six months of its formation, and by October of 1918, the 4Ls had 125,000 members. In the end, the union outlasted the SPD by twenty years (Military Order of the World Wars 2011:9).

[102] Four of the thirteen railroads were constructed with the intention of them becoming permanent railroads line, including SPD Railroads 11 and 12 of Lincoln County, Oregon and SPD Railroads 5 and 1 in Washington (Evans and Williams 1984:13).

[103] Meanwhile the Colorado Midland, having delivered a significant portion of the company's equipment to the USRA and retooled their organization almost entirely to support the war effort, collapsed and its assets sold in auction shortly after the war (Kaminsky 1989).

[104] Lands immediately west of the Netul Landing log dump, meanwhile, are reported to have been acquired by an Ole Nygaard at around the same time (Metsker 1930).

[105] The Crown Zellerbach Corporation was a titan in the papermaking industry of the twentieth century, and its presence in the Pacific Northwest shaped both the economic and physical landscape of the region. Both halves of the Crown-Zellerbach Corporation were rooted in California-based resource businesses of the 1870s. Zellerbach Corporation formed as a timber company in 1924 in San Francisco, then in 1927 merged with its own paper board industries (Adams 1951b:85; Crown Zellerbach Corporation 1998). Crown-Willamette itself was a conglomerate of California and Oregon timber interests formed during roughly the same period. Zellerbach merged in 1928 with Crown Willamette Paper Company, becoming one of the largest timber and paper companies and the second largest paper manufacturer in the United States. The new corporation now had assets amounting to almost $100 million, including over 350,000 acres of timberlands and the capacity to manufacture 1,450 tons of finished paper each day in paper mills located throughout the Northwest. The company manufactured building materials as well as wrapping paper, paper bags, newsprint, and other paper items (Harvard College 2012). Crown Zellerbach became a publicly traded company on the New York Stock Exchange in 1928, only 10 months before the beginning of the Great Depression (Harvard College 2012). The company languished during the Depression years, like many other firms, due to dramatic declines in demand for construction materials and other timber products. The paper industry, in total, saw a 44 percent decline in sales, and Crown Zellerbach reduced employee wages by 10 percent (Center for Columbia River History 2013).

[106] The exact succession of company ownership is difficult to disentangle based on records reviewed in the course of this study – a separate owner, the Lewis and Clark Narrow Gauge Railroad is also sometimes listed as an independent

entity in some accounts, perhaps as a holding company for railroad assets subsidiary to the larger interests of these timber companies.

[107] A fourth fire, occurring in the summer of 1951, is sometimes considered to be the final "Tillamook Burn." In 1978, thirty years to the day after the passage of the reforestation bond bill, Governor Tom McCall designated the burned lands in state ownership to be a part of the Tillamook and Clatsop State Forests, which now consist in no small part of former Tillamook Burn lands (Wells 1999; Kemp 1967).

[108] Crown Zellerbach purchased large tracts of foreclosed lands in the Columbia-Pacific region, as well as in other parts of the Northwest and the American South. Crown Zellerbach also participated in early experiments with industrial-scale reforestation on their Clatsop Tree Farm (Adams 1951b:95). By the 1950s, the Clatsop Tree Farm, located in Clatsop County, extended from Tillamook County to the south to the Columbia River on the north, and the Pacific Ocean in the west to near the summit of the Coast mountain range in the east. While Douglas fir production in the interior portion of the County supplied building materials, some portion of their Clatsop County operations supplied the growing pulp and paper industry – especially the coastal spruce and hemlock forests (Wahkiakum County Eagle 1965:7; Crown Zellerbach Corporation 1958). By 1958, the company had a total of twelve certified "tree farms" in the region. Northern Oregon was home to four of them, including Clatsop, E.P. Stamm Tree Farm in Columbia County, Tillamook Tree Farm in Tillamook County and Lincoln Tree Farm in Lincoln County. Southwest Washington was home to two: Pacific Tree Farm in Pacific County and Cathlamet Tree Farm in Wahkiakum County. In total, the company had 425,000 acres in seven Oregon farms and 230,000 acres in five Washington farms – roughly the apex of its ownership, in 1958 (Zellerbach Corporation 1958:13). Crown Zellerbach opened up the industrial timberlands of the area, many for the first time, building vast networks of logging roads, mills, and other logging infrastructure throughout the region – effectively dominating local timber production from the 1950s through the mid-1980s.

[109] To underscore the dynamism of recent ownership, it is worthwhile to review the recent history of the former Crown Zellerbach lands, which have represented between 140,000 and 175,000 acres of Clatsop County - the largest single ownership in the County. In 1985, the Oregon assets of Crown Zellerbach were lost to a hostile takeover by wealthy British industrialist, Sir James Goldsmith; Crown Zellerbach was dissolved in 1986, with assets divided between James River Company and Goldsmith's privately-held Cavenham Industries, with most Clatsop County lands going to the latter. The new owner, Cavenham Industries, was soon consolidated into a resource extraction conglomerate with Hanson Industries, becoming Cavenham-Hanson in 1990. For the duration of these operations, the company continued to operate both cardboard and lumber production facilities, but harvested very little timber on their Clatsop lands. Cavenham-Hanson's lands were then sold to Hancock Lumber in the mid-1990s. Willamette Industries soon acquired the majority of Hancock's Clatsop County lands in 1996, but by the end of that decade those lands were later acquired in a takeover by Weyerhaeuser. Weyerhaeuser sold most of these lands to the Campbell Group in 2009, except certain parcels that were retained or traded with other timber companies such as Stimson Lumber Company. Campbell Group, an investment company with only a small forestry staff, has since been restructured and the ownership of this majority stake in Clatsop County's timberlands is once again in flux at the time of this writing.

[110] Of the various elements comprising Columbia-Pacific history, the theme of the industrial timber economy is one of the most critical. It has come to define the human relationship with a significant majority of the region, reshaping the landscapes of almost every part of the region's mountainous interior. Still, despite the importance of the theme, no resources remain in the park that are "significant" or that meet the integrity standards of the National Register of Historic Places. The one place of clear nationwide significance, the Spruce Production Division's Lewis and Clark Railroad log dump at Netul Landing, lacks the physical integrity that would be a measure of eligibility. The Spruce Production Division site was, after all, a short-lived railway terminus subsequently used for roughly seven decades as a working waterfront, through multiple stages of industrial forestry. Pilings on the site appear to date, in whole or part, from the final phases of this industrial lifespan, and the original railroad infrastructure was removed to accommodate log truck access well before those modifications.

Nonetheless, Netul Landing presents fine opportunities for interpretation. Almost all of the forested lands within the modern Lewis and Clark National and State Historical Parks were logged at some time, in part or in whole, though little remains from this history other than stumps and second-growth forest. In Ecola State Park, those portions of the land that

had to be purchased (rather than donated from public agencies or private landowners) were often logged beforehand so as to reduce their cost, though Oregon State Park Superintendent Samuel Boardman railed against this as antithetical to the purposes of park development (Boardman n.d.). Former logged areas can still be seen here and there within that park, shrouded in dense second-growth Sitka spruce. Other portions of Ecola, as well as Cape Disappointment, Fort Columbia, and Fort Stevens were logged in small areas–not as commercial ventures, but to accommodate military access, viewsheds and firing lines–especially during World War II. It is perhaps in the Fort Clatsop sub-unit of Lewis and Clark National and State Historical Parks, with its history of the Moore sawmill in the 1850s, the Spruce Production Division railroad in 1917-18, and its landscapes and long history of industrial forestry from that period into the early 21st century, that the story of logging can best be told.

[111] The story of each of these shipwrecks is rich and deserves more attention than can be provided here. Each has connections with people, places and events mentioned elsewhere in this document. A lifeboat from the Hammond lifesaving station was dispatched to rescue the crew of the *Peter Iredale*, for example, and these men later recuperated at Fort Stevens. The *Shark's* mission to the Oregon Territory, its ownership then contested between the United States and Britain, involved surveys and other actions meant to support the American side of that debate. Following the wreck, the crew of the *Shark* was taken back to the fort at Astoria; while recuperating there they carved their names on a local landmark known as "Shark Rock," which sits a short distance west of the fort site to this day amidst modern downtown commercial development. The cannons from that ship drifted as far south as the cape at Hug Point, on the north end of modern Arch Cape, were buried by sand, and some portion of them recovered in 1898 near the outlet of what is today known as "Shark Creek"; the post office of Arch Cape was named for these cannons, and that name was later applied to the town of Cannon Beach, a few miles to the north. In 2008, two additional cannons were discovered in the same general location, being recovered and since studied by the Oregon State Historic Preservation Office and others (Shine2008; O'Donnell 1996; Gibbs 1973).

[112] The National Park Service "Summary Context for NHL Nominations" (n.d.: 1) explains the Fresnel lens and its significance: "*The Fresnel lens, developed by August Fresnel, a French physicist, consists of a collection of glass prisms held together in a beehive shape by a brass frame. The light rays are bent by the prisms into one horizontal sheet of light which in a fixed lens shows a steady light and in a revolving lens, produces a flash or characteristic. These lenses were produced in seven standard orders or sizes, numbered one through six. Orders one through three were used in larger coastal lights, while four through six were used in harbor or bay lights*."

[113] A first order Fresnel lens arrived at the site in 1855, but did not operate until October 1856 because the lantern section of the lighthouse had to be modified to install the lens since the original plans called for a smaller lighting system. Invented by a French company in 1822, this type of lens with its multiple prisms slowly replaced an earlier system of lanterns throughout the United States over the following four decades, one where thin copper frames held the lanterns together and enclosed small panes of glass used to project the light. As installed, the Fresnel lens used at Cape Disappointment initially saw service starting in 1841 at Navesink Lighthouse in New Jersey. The U.S. Lighthouse Board ordered it shipped around Cape Horn to the Columbia River entrance, where the newly built lantern housed the lens for 42 years. Dimensions of the lens were 140 inches high and 77 inches in diameter, illuminated by a five-wick oil system (Lucero and Hobbs 2009).

[114] This is a large topic, only addressed briefly here. The Territorial Act of 1848 that established the Oregon Territorial Government and, thus, created the Oregon Territory, also authorized $15,000 for the lighthouse at Cape Disappointment in the present state of Washington. During the same period, President Millard Fillmore, in February of 1852, declared by executive order that all the public land lying within 1 ½ miles of the southern point of Cape Disappointment be withdrawn from sale or grant, and reserved for military purposes (Rodgers 1886). The Executive Order set apart 540 acres of public lands north of the southernmost point of the cape for military purposes. Another executive order on December 27, 1859, took 48 acres of the military reservation and made it a lighthouse reserve. These nearly simultaneous efforts at the mouth of the Columbia, both to protect navigation and defend the river, set in play competing land uses between the US Department of Treasury and US Department of War. Rather than subtracting from the initial reservation, the General Land Office added some acreage to the military reserve, so their combined total reached 588 acres in March 1863. When legislation authorized construction of a lighthouse at North Head a little less than three decades later (on February 15, 1893), the War Department and Treasury Department (which housed the U.S. Lighthouse Board) attempted to sort out

their respective jurisdictions on the cape. With three Civil War-era batteries located near the Cape Disappointment Lighthouse, officials in the two departments agreed that the military should have jurisdiction over both reservations, apart from four small tracts reserved exclusively for lighthouse use (Washington State Office of Archaeology and Historic Preservation 1975; Hussey 1957).

Development of the lighthouse reservation and the establishment of a military installation leap-frogged each other through the end of the nineteenth century. Early military efforts to fortify the mouth of the Columbia included the installation of smoothbore cannons at Cape Disappointment in 1862. The post and fortifications were constructed the following year, and the fort was activated in April 1864 (Weathers 1989 Washington State Office of Archaeology and Historic Preservation 1975). The commander of the US Volunteers of the District of Oregon, headquartered at Fort Vancouver, immediately began lobbying to have the lighthouse and fog bell relocated, "*I enclose a letter for Major R.S. Williamson of Engineer Corps, on the subject of the removal of the Light House at Cape Disappointment to a better and safer position, considering the danger of injury (in its present position) from the discharge of heavy cannon*" (Alvord 1864). Friction continued and in 1886, the Fort Canby Post Commander made a case to the Assistant Adjutant General at Vancouver Barracks for the relocation of the "*light-house life saving and signal establishment*" which warrants quoting nearly in full:

"*I desire to invite the attention of the Department Commander, especially to the occupation of sites for the buildings used by their employes within the limits of the military garrison and post, without first obtaining authorization of the War Department to said sites.*

"These establishments of stations are all located at this place by superior authority in their respective services and are entitled to suitable sites for their proper purposes and for the use of their employes, but the selection should be regulated. The tendency is to concentrate all buildings in the small cove at the foot of the hill near the wharf–to crowd together in this small place, interfering unnecessarily with each other and endangering all in case of fire in any one. It is apparent to all here that there should be some effective, recognized control on the ground to prevent this, and, this post having been selected as a permanent one for the concentration of all Artillery troops in the vicinity for instruction purposes, it is evident that the few available building sites along the only military road to the wharf should be retained for store-house and garrison purposes...

"The tract of land over which control is thus assumed by another department is that part of the Military reservation which is most valuable and necessary for Military purposes. The fortifications, magazines, powder house, Commissary and Qr.Mr's. store-houses, stables, woodsheds, shops guard-house, wharf, barracks, N.C.O. quarters and military roads are all located out it. The War Department has for years been building on this tract of ground and improving it with roads and bulkhead. The new hospital, and Ordnance store-house and bulkhead to cost $18,000 are projected on it.

"It appears a conflict of authority is slumbering here, to be raised at any moment. I report the facts and respectfully request that the question be authoritatively settled" (Rodgers 1886).

Despite such requests to remove nonmilitary operations from the reservation, the lighthouse and life-saving station remained. A new bell house had to be built in 1871 after a gun blast from a nearby battery shattered the old one. The station's fog bell proved ineffective because it could not be heard adequately by mariners from a suitable distance. The bell's service at Cape Disappointment was discontinued in 1881 and was transferred to West Point Lighthouse on Puget Sound. A massive 15-inch Rodman cannon at the fort was seldom fired because the concussion of the blast threatened the glass in the nearby lighthouse. The cannon was relocated in 1893 to the fort's Center Battery. The life-saving station, originally built on piles in the bay, was moved to its present site at Fort Canby in 1920. This uneasy relationship between the competing interests at Cape Disappointment continued until Fort Canby was deactivated in 1947 (Lighthouse Friends 2013; U.S. Coast Guard 2001; Washington State Office of Archaeology and Historic Preservation 1975).

[115] This includes most of 6N10W, SW ¼ of Section 31 – totaling 160 acres, minus some offshore areas (GLO n.d.).

[116] Nehalem elder Clara Pearson reported to John P. Harrington: "*The sea lions did not like it at all when they put the lighthouse on Til. Rock, they wd. Swim around the rock and look, and finally they started a sleeping place at dehontatch [Ecola Point]...that*

rock had been their bed for countless generations...sometimes the sea lions went and tried to climb up there and sometimes the whites would shoot them and kill a lot of them thus" (in Harrington n.d.: 454).

[117] The disposal planning report noted, "*It has been administratively determined that no appraisal will be required at this time because of the difficulty in contracting with an appraiser experienced in the type of property and the inaccessibility of the property*" (Merrifield 1958). Another report declared, "*Fair market value, considering location, is zero*" (in Miller 1958). In preparing to dispose of the light station, the Public Buildings Service reported,

"*The difficult access to the subject property will limit prospective purchasers. Range of possible uses could include an A.E.C. [Atomic Energy Commission] Test Station, Radio or T.V. Transmission Antenna Site, or a Radar Site" (Merrifield 1958). The recommendations for disposal were (in order of priority): US Navy, Oregon State Parks Division, and public offering by a sale of sealed bid (Merrifield 1958). The Navy, Oregon State Parks, and the National Park Service all declined to acquire the property. It was purchased for $5,600 through public auction by the Academic Economic Coordinators for "marine and scientific research*" (Gunn 1958).

The AEC, as the organization called itself, comprised over 50 members, and its five-member advisory board consisted of five Las Vegas businessmen from the construction and engineering industries (Gunn 1959). AEC's stated purpose of marine and scientific research failed to materialize and the facility passed into more than 20 years of disuse under a succession of private owners with ambitions for enterprises such as a novel gambling casino (Eternity at Sea Columbarium 1981: 4). In 1980 the lighthouse on the basalt outcrop was bought by Mimi Morissette and a group of investors for $50,000. The interior was adapted as a repository for crematory remains but the business lost its license in 1999, halting further placement of remains (Yardley 2007).

[118] The lightships patrolling the river bar included the *Columbia River Lightship No. 88* that was superseded by *Columbia River No. 604*, which retired in 1979.

[119] In 1941, as the country became involved in World War II, the Navy ordered the Coast Guard to set up lookout posts at ten lighthouse stations along the Washington and Oregon coasts. These posts employed twelve-inch signaling lights operated by crews of four signalmen on a twenty-four hour basis. The signal crews' mission was to identify enemy submarines, and report enemy aircraft and the landing of enemy ships, in addition to other missions. To avoid infiltration by enemy ships, the Coast Guard ordered beacons and lighted buoys extinguished. This measure contributed to shipwrecks, such as that of the *SS Mauna Ala*, which, unaware of the light shutdown, raced directly into Clatsop Beach on December 10, 1941 (Kann and Kann 1990).

[120] Lighthouses, lightships, buoys, and beacons have aided ships in finding the entrance to the Columbia, but familiarity with the bar was, and continues to be, critical to a safe crossing. Local Native Americans and, later, members of the Hudson's Bay Company, served as the earliest pilots to meet ships and provide assistance across the Columbia bar. As the town of Astoria became established, experienced mariners would sail (and later steam) out beyond the breakers in their pilot boats and wait to guide arrivals across the bar for a fee. In 1846 the State of Oregon established the Oregon Board of Pilot Commissioners, which provided for formal licensing of the pilots. All vessels engaged in foreign trade are required to employ a state-licensed Columbia River bar pilot when making the crossing (Columbia River Bar Pilots 2010).

[121] The first U.S. Coast Guard unit established in the Pacific Northwest was the U.S. Revenue Cutter Service's *Jefferson Davis*, sent to the Puget Sound in 1854 to prevent smuggling. At this time, revenue cutters were at the disposal of customs collectors in the Pacific Northwest and elsewhere. The custom collectors also performed duties such as documenting vessels, supervising lighthouses, steamboat inspections and administering marine hospitals. In addition to custom's related responsibilities, the *Jefferson Davis* also aided in the transportation of government officials and rescue missions at sea (Nelson 1994; Noble 1989).

[122] He was also, among many other things, the person for whom Lane County, Oregon, was named, and a key opponent to the ratification of the Tansy Point treaties with the tribes of the Columbia-Pacific.

[123] In an effort to streamline government operations, the Revenue Cutter Service and the Life-Saving Service amalgamated in 1915 to create the US Coast Guard. In 1939 the Lighthouse Service merged into the Coast Guard, and in 1946 the Coast Guard absorbed the Bureau of Inspection and Navigation. The Coast Guard continued under the Department of Treasury until 1967, when it was transferred to the Department of Transportation, and in 2003 transferred again to the Department of Homeland Security (US Coast Guard 2012b; Weathers 2001; Noble 1989).

Assuming the motto of the Revenue Cutter Service, *Semper Paratus* (Always Prepared), the Coast Guard was established as "*a military service and a branch of the armed forces of the United States at all times*" (*38 Stat. L., 800*). Upon the declaration of war or when the President directs, the Coast Guard operates under the authority of the Department of the Navy. All Coast Guard stations, including those at the Columbia's mouth, were placed under the direction of the Navy by executive order from January 1917 to the close of World War I in November 1918. During both World War I and II, the Coast Artillery implemented additional fortification by placing mines at the mouth of the river. Today all mines have been removed or deactivated due to seepage (Willingham 1983: 125).

Prior to World War II the Coast Guard conducted neutrality patrols under the US neutrality act of 1939, and was assigned the mission of port security the following year. With US involvement in the war, the Coast Guard was again ordered to operate as part of the Navy. Coast Guard vessels, such as *USCGC 402,* joined the Harbor Defenses of the Columbia under the direction of the Navy. By April 1942, 26 coastal lookout posts and 13 lifeboat stations serviced the entire coastline, and guardsmen were armed with a range of weaponry. Principally between 1943 and 1944 Coast Guard beach patrols were conducted via horseback (Kann and Kann 1990: 30). Throughout the war the Coast Guard played an important role in defense of the mouth of the Columbia, as well as continued its safety missions in the region.

[124] As further technological advances reshaped helicopter technology during the Vietnam War era, these were reflected in Coast Guard fleets. In 1973, the two original helicopters were replaced with three HH-3F Pelican helicopters. The air station continued to grow and advance and, in May of 1983, it gained two HU-25 Guardian fanjets, and in 1987, three HH-65A Dolphin helicopters replaced the Pelican helicopters. In May of 1995, three HH-60J Jayhawk helicopters replaced the HH-65A Dolphins and HU-25 Guardians.

[125] Initially the National Motor Lifeboat School classes were meetings of surfmen stationed primarily along the Washington and Oregon coasts, but eventually the classes were developed into a systematic curriculum taught by permanent instructors assigned to the center. In 1980 the motor lifeboat school became a national training center, and is the only school for rough-weather surf rescue in the country. Over the years students from the US Coast Guard as well as the Canadian Coast Guard and Norway's Royal National Lifeboat Institute have taken courses at the center (US Coast Guard 2012a)

As of 2006, the station at Cape Disappointment had 50 assigned crew members, responding to between 300 and 400 calls for assistance every year.

[126] Andrew A. Humphries was a prominent Union General in the Civil War; as part of the Army of the Potomac, he was involved in the major battles at Antietam, Fredericksburg, and Gettysburg, later assuming the relatively calm but strategically important Chief of Engineers position, overseeing the development of harbors, forts and other facilities throughout the rapidly expanding nation through the 1870s. Also somewhat famous for his scientific writings on the hydrology and sediment dynamics of the Mississippi River, he was relatively well suited to oversee engineering matters relating to the Columbia River mouth at this time.

[127] In September 1877 C.W. Holt reported to Col. Wilson in the Engineers' Portland office that conditions at installations on the north side of the river were also in need of attention:

"*I have to say I have just arrived from Cape Hancock L H* [Cape Disappointment Lighthouse] *and in looking at the breakwater I find that it has changed very much since you were here last week. The water has broken over the wall and the banks washed in from the wall and back a distance of about 55 feet from the face of the wall...At ordinary low tide the water is within a very few feet of the wall which is being undermined and sinking while the top layers of stone are being carried in by the effect of the surf and drift*" (C.W. Holt 1877).

[128] As Robert N. Holt wrote from Fort Stevens on Christmas Day, "*I have to report that the very high tides of Thursday washed over the beach filling the lake or pond to overflowing and on Thursday evening or night the water cut through the sand on the beach about 500 feet south west of the flume*" (R.N. Holt 1881c).

[129] Capt. J.W. MacMurray at Fort Stevens, for example, made appeals to the Assistant Adjutant General of the Department of the Columbia,

"*For defense at the mouth of the Columbia, a well armed battery at Fort Stevens has superior advantages. Ships must cross the bar of the Columbia with closed ports and at great risk in the tortuous channel and heavy breakers under fire from guns of Fort Stevens, which from a central point would command the channel for a distance of nearly nine miles, at a range varying from 1000 to 8000 yards, and through an arc of almost 180 degrees*" (MacMurray 1882).

[130] When fully retrofitted, it was described as "*Chinook, sea dredge (steel), 5658 tons, 445 ft (length) x 49 ft 2 in (breadth) x 30 ft (depth), built 1892 in Belfast, Ireland, estimated cost $300,000*" (Bureau of Navigation 1904: 416).

[131] A.B. Leckenby's son, Harry N. Leckenby of Seattle, described the earliest stabilization work in a letter to KJR Radio Station,

"*I was listening to the Western Farm and Home Hour today, and was very much interested in that portion of their program relating to picket fences and dune grasses used in the control of shifting sands on the Oregon coast. I understood the speaker to say that the first work that was ever done on this was done by Mr. Harry Schoth... [M]y father, Mr. A.B. Leckenby, at the request of Mr. Judkins, who was then special emmigration and land agent for the O.R. & N. railroad, did a considerable work in the control of sand dunes at Gearhart and Seaside, Oregon, in the years 1897-8-9, and also... a particular friend of my father's, Mr. Edwin Johnson, who owned the Portland Seed Company, bought the tide lands at the north end of the Seaside, Oregon, and by the systematic installation of picket fences, added to the actual livable area of Seaside many acres located in the northern end of the city*" (Leckenby 1937).

[132] Maintenance of the Columbia River jetties is an ongoing struggle. Extensive repairs were needed in 1931, for example, because waves had lowered the elevation of the outer end of the south jetty. Additional major reconstructions have been required on several occasions since then. In recent years, frequent and large storms have accelerated wave damage to the jetties, thereby jeopardizing navigational safety. Outer sections of the jetties have eroded away, other sections are at risk of breaching, and receding beaches have exposed greater portions of the jetties to wave damage. Congress funded interim repairs to the north jetty that were completed in 2005. Interim repairs to the south jetty were conducted in 2006-07. At the time of this writing, the Corps of Engineers is evaluating the reliability of the jetties to identify the optimum methods for long-term rehabilitation. Construction for a complete jetty rehabilitation project has been estimated to require $400-470 million in federal appropriations over 20 years, creating political hazards in addition to those of a navigational nature (Columbia River Channel Coalition 2012a).

[133] In truth, the configuration of the dredged channel is complex. The outer channel is 2,640 feet wide and some 55 feet deep. The bar channel is dredged to a depth of 55 feet in the northern three-quarters, and to 48 feet in the southern quarter. The channel then narrows to 600 feet wide and 43 feet deep (Columbia River Channel Coalition 2012b; Columbia River Bar Pilots 2010).

[134] National Register eligible properties related to navigational aids and lying within Cape Disappointment State Park, include the North Head Lighthouse as well as residences and outbuildings associated with the lighthouse. The Cape Disappointment Lighthouse is also part of the existing historic district and has the distinctions of being the oldest lighthouse in Washington State, as well as the oldest functioning lighthouse on the west coast of the United States. It can be inferred from the Cape Disappointment Historic District nomination in 1975 that both lighthouses are contributing resources in that district. Both are of statewide significance, not least for the age of the lighthouse on Cape Disappointment but also the superb integrity of the lighthouse complex on North Head. As part of aiding navigation along this part of the Pacific coast, there are "contributing resources" within the properties in the two existing National Register properties on

either side of the river: the Cape Disappointment Historic District and Fort Stevens Military Reservation. The jetties in particular, as well as supporting infrastructure including the trestles built for jetty construction, may warrant focused attention in any revised nominations for these two areas. (One navigational aid of the past, Lightship WAL-604 "Columbia," was retired in 1979 but attained national historic landmark status in 1989. The ship remains docked at the Columbia River Maritime Museum.) The shipwrecks of the region, too, may warrant further consideration as part of a revised nomination process for Cape Disappointment or Fort Stevens, including, but not necessarily limited to the *Peter Iredale* wreckage on Fort Stevens' ocean shore.

[135] While often cited as an "Executive Order," Fillmore's was responding directly to Conrad's February 24th letter and his February 26th reply is not ordinarily listed among Presidential Executive Orders. In truth, Fillmore replied with a statement that was brief, and to the point: "Approved February 26, 1852" (in U.S. Senate 1878: 2).

[136] P.W. Gillette's June 18, 1861 diary entry mentions the Shubrick near Fort Clatsop: *"I there found the steamship Shubrick, a government vessel, & the first steamship that has ever been in the Lewis and Clark"* (Gillette n.d.). Originally used in the Lighthouse Board vessel, to aid in the operations at the Columbia River bar, the ship had been placed in the Revenue Cutter Service by late summer of 1861 to support the war effort.

[137] On these matters, Hussey (1957: 22) cited letters between R.E. DeRussy and G.W. Elliot, July 4, 1863, as well as one sent by J.G. Totten to R.E. DeRussy, July 10, 1863, both in the Corps of Engineers, Portland District Defenses, Mouth of the Columbia River Letterbook, microfilm copy, Oregon Historical Society, Portland.

[138] W.W. Raymond was part of an early and locally famous contingent of settlers – including Elbridge Trask - who arrived on Clatsop Plains in 1843. He served for a time as an Indian agent, administering the Clatsops residing in the area from his home on Tansy Point, and was somewhat infamous for his mismanagement of that temporary subagency (see Deur 2005). Indiana-born B.C. Kindred came to Oregon in 1844 and settled on Point Adams by 1845. His family was reported to still be occupying what remained of their original claim in 1889 (North Pacific history Company 1889).

[139] From Portland *Oregonian*, February 20, 1875, and Evan Miles, Military History of Fort Canby, a manuscript compiled between December 21, 1874, and July 13, 1909, cited in Hussey (1957: 25).

[140]This material is synthesized from a variety of sources cited in the chapter of this document addressing navigational improvements to the river mouth. Important among these are Hansen 1997; Reckendorf, et al. 1985; Hanft 1980; Office of the Chief of Engineers 1899; Casey 1876; and Miller 1875.

[141] The "Endicott Report" is formally entitled *Report of the Board of Fortifications or Other Defenses Appointed by the President of the United States under the Provisions of the Act of Congress Approved March 3, 1885,* House Executive Document 49, 49th Cong., 1st Sess. (Washington, DC: Government Printing Office, 1886).

[142] Built in 1899, the Warrenton-Flavel line of the Astoria &Columbia River Railroad line effectively linked Fort Stevens to the national system of Northern Pacific (Laubaugh n.d.; Wolford 2011). Fort Stevens had a large government wharf, which connected to the rail link. In 1907, the Hammond spur of the Astoria & Columbia Railroad accessed the Fort Stevens Station, which helped to link the fort with other areas in the region. The Fort Stevens Post Office was in use between 1899 and 1949 (Hansen 1997; Hanft 1980).

[143] Hussey quoted from 42nd Cong., 2nd Sess., House Executive Document 1, Part II, 71.

[144] This evidently spelled the end for the Lifesaving Station and boiler house on Baker Bay, as indicated by Hussey, A Short History of Fort Canby, 28-29. He cited the Portland *Oregonian* of June 14, 1931, and the Ilwaco *Tribune* of June 24, 1949, among his sources.

[145] Changes to the mine casemate at Fort Columbia came later, but were less stout and generally limited to the existing envelope. Completed in 1921, this amounted to concrete walls now two to three feet thick, as well as a reinforced concrete and steel roof five feet through, and overlain with earth.

[146] This reached a total for all three forts of 127 officers and 2,574 enlisted men by June 1918; "Fort Stevens," p. 2 in http://fortwiki.com/Fort_Stevens, accessed October 29, 2013.

[147] This move largely stemmed from publication of the *Report of the Board of Review of the War Department to the Secretary of War (November 26, 1915) on the Coast Defenses of the United States, the Panama Canal, and the Insular Possessions*, House Document 49, 64th Cong., 1st Sess. (Washington, DC: Government Printing Office, 1916).

[148] This mobilization of the dunes contributed to the burial of a former Clatsop village site beneath the dune field. As described by Meriwether Lewis' journals, this village consisted of *"houses and about 12 families of the Clatsop Nation, we crossed to those houses, which were built on the S. exporsur of the hill, Sunk into the ground about 4 feet the walls roof and gable ends are of Split pine boards, the dores Small with a ladder to decend to the iner part of the house...those people treated me with extrodeanary friendship"* (Lewis, December 9, 1805)

[149] Most mine operations had been consolidated from Fort Stevens and went to the casemate at Fort Columbia in 1937. The Army had long recognized that the control cable at Fort Stevens could be seen during low tides and the mine plotting room there lacked protection and concealment. To correct these deficiencies, the Army deployed a new mine system and expanded the casemate at Fort Columbia beginning in 1941. The addition included gas proofing equipment, a power house for the searchlights on Chinook Point, and two entry tunnels. They added reinforcement to the casemate, most notably in the form of a cap composed of stone rubble intended to detonate any bomb or shell before it could penetrate the earth covering. Meanwhile, the Army converted the Columbia River minefields from buoyant devices to larger ground mines, each holding 3,000 pounds of high explosive (Lingo 2008; Hansen 1997).

[150] The war brought unprecedented resources into the war effort. As part of the Columbia River Harbor Defenses on the Oregon side, there was the "Columbia River Harbor Defenses" which included the Fort Stevens Military Reservation (2,826 acres), the one acre Hammond Fire Control Station, as well as the 39 acre Columbia Beach Military Reservation and the 15,000 acre Camp Clatsop, both in Warrenton (USOCE 1945). The Fort Stevens Military Reservation also was responsible for commanding the operations of facilities elsewhere on the coast, including the 32 acre Coos Bay Fire Control Station. The 59 acre Tillamook Head Radar Station, administered as part of a separate chain of radar stations along the Pacific coast, functioned largely independently of the Columbia River Harbor Defense system.

[151] A Memorandum dated November 6, 1942 from Headquarters IV Fighter Command, Office of the Commanding General, "New Code Designation of Radar Stations." Station "J-23" a CHL-588 (Chain Home Low, a Canadian built British radar) radar station was located at Tillamook Head. Certain military websites suggest that the site was instead a "ground control intercept radar" installation (a SCR-516 or SCR-588 facility), though this is not the terminology used in military documents of the day.

[152] As Oregon State Park Superintendent, Samuel Boardman noted, "*the Army built a road from Cannon Beach to the Head. When they came to the Indian village location the midden mound was leveled to the ground, though the road location missed it entirely*" (Boardman 1956).

[153] These accounts are derived from common and mostly verifiable accounts of World War II-era coastal residents gathered by the lead author; notes on specific interviews are in the author's possession.

[154] The military history recounted here is a significant story in the region's larger history. However, the military properties have undergone significant change over time. Civil War era fortifications at Cape Disappointment and Fort Stevens were almost completely subsumed by modernization during the first half of the twentieth century, being demolished to make way for the Endicott-era reconstruction of the batteries at around the turn of the century. Endicott-era gun batteries and associated infrastructure dominate all three fort sites, and are certainly contributing resources in any future National Register nominations to be completed. Yet these turn-of-the-century fortifications are in various stages of decay and have not always been preserved in a manner protecting their "integrity," as the term is employed in the National Register of Historic Places. World War II era construction also obliterated significant portions of the previous military infrastructure, a process compounded by the Army's decommissioning of the sites and scrapping of all mobile items at the conclusion of World War II. Still, much remains: there are gun emplacements corresponding to the locations of individual batteries,

searchlight shelters, power plants, and a variety of other standing structures, in addition to foundations, historical sites associated with military actions, portions of military road systems and many other landscape elements. Existing National Register nominations could be revised to include the full range and depth of military landscape, much of which is visible on site. Clearly remnants of these military forts will serve as cornerstones of public interpretation in area parks for generations to come.

[155] Since the early 1860s, a small number of steamers had entered and sometimes landed on the tidewater of the Lewis and Clark River from the Astoria waterfront. P.W. Gillette suggests that the first steamer – the famous *Shubrick*, the lighthouse tended that was enlisted for Revenue Cutter Service during the Civil War and targeted by Confederate privateers for hijacking – arrived on the river in June of 1881. Gillette and his contemporaries often mention a "landing" on the west side of the Lewis and Clark river estuary near Fort Clatsop when people traveled across that river, but provided few specifics about its functions and exact placement.

[156] Holladay's interests, including but not limited to the OR&N, owned various vessels that traveled the Columbia, and it is likely that these were Holladay steamers making landfall at the Fort Clatsop wharf. While exact evidence is thin in the sources consulted, there is circumstantial evidence suggesting that the small steamers used by the OR&N for the Ilwaco operations - *T.J. Potter* and *Ocean Wave* – may have been among the boats landing at this site (Jeff Smith, pers. comm. 2013).

[157] The hotel was placed on the National Register in 1978, and reopened as a rustic inn in the early 1990s.

[158] North Beach is the historical name for the Long Beach Peninsula. Long Beach became the common name after World War II when the Long Beach Merchants Association started to heavily promote the various communities of area under a unified moniker. Resident historians use the name "Historic North Beach" when talking about the early history of the IR&N but use the term Long Beach for anything more modern.

[159] This line linked Astoria and Portland, remaining separate from other ISNC operations until the 1880s, when rising demand motivated Loomis and his partners to add the *T.J. Potter* and *Ocean Wave* to directly link Portland to Ilwaco, instead of Astoria.

[160] Specifically during this time, Loomis won the contract for carrying mail between Astoria and Olympia, Washington, and took over Stout's stage route on the Long Beach Peninsula. With these new attainments, Loomis used the *General Canby* to shuttle mail from Astoria, across the mouth of the Columbia River, to Ilwaco. Mail was then transported along the coastline by the horse-drawn stage for thirteen miles before crossing the mile-wide peninsula to arrive at Oysterville. From Oysterville, the mail traveled by another of Loomis's steamers to North Bend, across Shoalwater Bay. The mail route finally reached Olympia after travelling on two more stages and a steamer. Though the route was complex, Loomis effectively fulfilled the mail contract and, building the mail service atop preexisting transportation services, achieved a level of financial success as a result of this contract (Jessett 1957: 145-46).

[161] Nahcotta was chosen as the final destination, because shipping proved easier there, as the water was deeper than at Oysterville (Becker 2012). The ISNC began track construction before the flatcars and locomotive arrived in town. The company laid the first tracks from the Ilwaco wharf to the depot, and the engine shed, water tank and turntable – parallel in construction to those at the Megler wharf – were built in close proximity. The ISNC purchased all of their rolling stock second-hand from the Utah Northern Railroad. A Baldwin Mogul locomotive, originally constructed in 1879, acted as the first locomotive for the rail (Jessett 1957: 146). Construction of the rail moved forward, and by July 12 of 1888, 4.1 miles of narrow gauge line were completed by the ISNC between Ilwaco and Tinkerville, Washington, now called Long Beach (Strack 2013). With the opening of the line on July 19, both the towns of Ilwaco and Tinkerville held banquets, and attendees were ushered down the new rail on flatcars equipped with benches and canopies to celebrate (Strack 2013; Becker 2012; Jessett 1988, 1957; Feagans 1972).

[162] As Sydney Stevens has noted, "*Another advantage to ending the line at Nahcotta was the proximity to shore of a deep-water channel. A much shorter dock, only 1,700 feet was needed in comparison to the mile-long wharf that would have been required at Oysterville*" (Stevens and the CPHM 2009: 22).

[163] As Weathers notes, "*The Ilwaco railroad bought the deep water site for their terminus around 1906 and initially called it "Cook's Station". When the first train arrived at the train terminus and ferry dock in 1908 the name had been changed to Megler Station. Automobile traffic finally forced the Ilwaco railroad to discontinue train service on September 9, 1930. Ferries operated by Fritz Elfving and later the Oregon Department of Highways continued to serve the Megler to Astoria run until July 29, 1966, when the last regular ferry operation ceased with the opening of the Astoria Bridge*" (Weathers 1989: 40).

[164] The change in ownership officially occurred on June 12, 1907. At this point, the rail consisted of 15.26 miles of track (Strack 2013; Feagans 1972).

[165] The Union Pacific had financial interests on both sides of the river, sometimes emerging from the purchase of competing enterprises. By 1898, the Union Pacific Railroad purchased a majority share of the Oregon Railway and Navigation Company, giving the Union Pacific unparalleled influence on the lower Columbia; at this time the ORNC was renamed as the Oregon-Washington Railroad and Navigation Company and became a subsidiary of the Union Pacific until 1936, when the subsidiary was fully absorbed into the UP.

[166] The ferry dock sat at the eastern end of today's parking lot; the rail depot sat adjacent, somewhat to the west of the dock, while the rail access and turntable was centered on the western end of today's parking lot. There were two parallel rails in this wharf area, allowing trains to come and go with the aid of the turntable. Many of the pilings offshore from the Dismal Nitch parking lot are related to this operation, including those on the eastern end of the lot, which were piers and "dolphins" that helped to direct and stabilize the steamers and, later, ferries that used the site.

[167] Somewhat less affectionately, it was known by nicknames such as "Irregular Rambling" and "Never-get-there Railroad" (CPHM 2013).

[168] Some have suggested that, in the years after Holladay's passing, Gearhart sought to market itself as a summer resort for affluent Portlanders, while the A&SCR and Holladay's successors in the Seaside hotel business attempted to promote a more populist view of Seaside, in an effort to foster a broader spectrum of visitors – a distinction that might still detectable in the communities' identities today. By 1902, Seaside's two halves, Seaside and West Seaside, sitting on opposite sides of the Necanicum River, boasted a summertime population of between five and ten thousand residents, and by 1907 the rail line had been extended to the south "Holladay" end of town. The new rail system's arrival into the region also promoted industrial developments in the two "Seasides." While tourism may have been the impetus for the rail line, its presence also fueled the development of small industry, including box factories and other small mills. By 1913, the two Seasides officially merged, growing together into a single community (Paulson 2007; Mille 1958).

[169] Plat maps, and indeed the entire pattern of modern lot divisions in certain coastal communities south of this railroad's ultimate terminus, such as Arch Cape, are still oriented toward this imagined railway today.

[170] Following completion of the Seaside segment, rail promotes immediately prioritized railroad construction linking Seaside to Hillsboro. The initial plan was to connect the two towns via a 71-mile route that followed the Lewis & Clark River and the Nehalem River over the coastal mountain range, including ambitious plans for a 1,500 foot-long tunnel near Saddle Mountain. Work on this extension proceeded haltingly in 1891 and 1892, but consistently suffered from changes in rail ownership and financial troubles (Laubaugh n.d.). In March of 1892, the company was reorganized into the Astoria and Portland Railway, and construction began with the boring of an 1100-foot summit tunnel. Quickly, however, financial troubles dogged the effort, and its ownership changed again, becoming the Seashore Railway, or Seashore Road Company in May of 1893. The new company continued the rail services between Youngs Bay and Seaside, but developed no further until the intervention of A. B. Hammond (Wolford 2011).

[171] Some portion of the Sunset Beach lands, undeveloped, were apparently later lost for taxes to Clatsop County, which sold them in turn to the Oregon Parks and Recreation Department. The exact circumstances of county ownership are unclear from the written record consulted, however.

[172] Linking older roads and trails, this new highway was tied together by the Roosevelt Highway's classic bridges, designed by Conde McCullough. A gifted engineer, McCullough developed most of Oregon coast's bridges, with growing art nouveau

sensibilities, between 1921 and 1936 in his role as Oregon Department of Transportation Bridge Division Director. Two of his earliest projects were in Clatsop County, very near Fort Clatsop, including the old Young's Bay Bridge (completed in 1921) and the Lewis and Clark River Bridge (completed in 1924) (Blakeley 2006; Hadlow 2001).

[173] Construction on Highway 26 began as early as January 1933, at the height of the Great Depression. Originally called the "Wolf Creek Highway," members of the WPA and CCC both collaborated on its construction, developing bridges and grading along significant portions of the route. Construction efforts were intensified as the prospect of military action in the Pacific became clear to federal authorities and portions of the highway were opened for public access by September 19, 1941, on the eve of American entry into World War II. The route was used to transport military equipment and supplies between the Portland area and the coast through the war, but was not fully functional as a public highway along its entire route. In January of 1946, the highway was renamed for the 41st Infantry Division of the United States which was also known as the "Sunset Division." Originally mobilized from Fort Lewis, Washington to protect the outer coasts of Oregon and Washington in World War II, the Sunset Division was later sent to the Pacific theater where its troops saw considerable action against Japanese forces in New Guinea (Battle of Buna-Gona), the Philippines, and elsewhere; the Sunset Division later participated in the occupation of Japan, being stationed on the northern island of Honshu. By 1949, the highway was completed for public use, providing an unimpeded and efficient roadway between Clatsop County and Portland. Linked into the State highway system, the Sunset Highway connected Highway 101 (the Roosevelt Highway) to the Portland area, Oregon's vast interior, and the intermountain West; today the highway extends as far east as Ogalalla, Nebraska, where it intersects with Interstate 80 (Clatsop County Historical Society n.d.).

[174] Construction on the bridge began in November of 1962; taking almost four years of construction, the bridge was completed in late August of 1966; highway departments and private transportation interests retooled their infrastructure in anticipation of the change through the 1960s.

[175] The SP&S merged with Burlington Northern in 1970, in an era of contracting freight and passenger service. Much of the original A&CR segments have been abandoned or sold (Gordon 2013). In 1997 the 91.77-mile segment between Portland and Tongue Point was sold to Portland & Western Railroad. Shortly after, the final portion of 5.04 miles of track between Tongue Point and Astoria were purchased by the City of Astoria, the downtown segment being redeveloped for tourist purposes. The remaining 25 miles between Portland and Wauna is used to store surplus freight cars. In 2003, as part of the Lewis & Clark Bicentennial Commemoration, the train service between Astoria and Portland reopened for the first time since 1952. The train operated for three seasons, concluding in 2005 (Astoria n.d.). Several events were influential in closing this line, however, including a landslide near Brownsmead and a washout at Knappa (ARPA n.d.).

[176] The Oregon Historical Society acquired the fort and assisted in developing the replica fort there, managing the area for historical interpretation with the support of various local organizations until its transfer to the National Park Service. This history is addressed in detail in other NPS reports (specifically Cannon 1995, 1994) and is not repeated here.

[177] The Salt Works was incorporated into the National Monument in 1978. See Lewis and Clark Trail Heritage Foundation 1974.

[178] As home to some 325 taxa, Saddle Mountain is the highest point (at 3283 feet) in the study area. With its double peak and a "saddle" between, the official name was bestowed by Lt. Charles Wilkes, commander of the United States Exploring Expedition, in 1841; Lewis and Clark referred to the potential elk hunting there, describing it as "*ruged and uneavin*" in December 1805, but did not provide a name. Of tremendous importance to the Native American tribes of the lower Columbia and vicinity, the mountain has been widely seen as a creation site of great and enduring power (OPRD 2010; Sayce 2010; Merriam 1992).

[179] C.W. Fulton (United States Senate) to J.R. Garfield, Secretary of the Interior, November 2, 1908 in Boardman (n.d).

[180] Introduced by Charles W. Fulton of Oregon, S. 7372 was passed by the Senate on February 1, 1909, but failed to emerge from the House Committee on Public Lands. Similarly, S. 5629 introduced by Senator George Chamberlain of Oregon also passed the Senate on March 15, 1910, but again did not leave the House Committee on Public Lands for a floor vote. The temporary withdrawal took place on November 11, 1908 (Merriam 1992: Boardman n.d.).

[181] Senate passage of the bill (S. 2186) occurred on March 21, 1912. Its failure in the House took place despite a favorable report from the War Department, whose representatives thought the view from the summit of Saddle Mountain had merit from a military standpoint; Astoria *Budget*, April 15, August 5, and August 21, 1912 (Astorian 1912).

[182] Chamberlain introduced S. 531 on April 9, 1913.

[183] A second withdrawal occurred by executive order on April 18, 1913. Chamberlain changed his bill authorizing establishment of a national park to a grant to Oregon for a state park on March 12, 1914.

[184] Details are provided in correspondence between "A.M. Smith and G.W. Shirley, Grand Rapids – Oregon Timber Company to Commissioner, General Land Office, March 20, 1914" (in Boardman n.d.)

[185] The likely reason behind the donation was that the 600 acre parcel stemming from the Northern Pacific Railroad grant was tied up by the attempt of Smith and Shirley to secure title by means of so-called location "rights" through scrip. In any event, the total of 1,400.96 acres went to the State Land Board until a state park could be established by the Oregon State Highway Commission at Saddle Mountain.

[186] Both Armstrong (1965) and Merriam (1992) recounted subsequent land acquisitions, so that 2,911 acres of park land existed as of 1992.

[187] The CCC reports are in RG 79, Stack 150 (35:22:4), Box 120, NARA II, College Park, Maryland. Logging during the 1920s greatly reduced the older forests that once surrounded Saddle Mountain, as did fires in 1936 and 1939. Reforestation of the native Douglas fir, Sitka spruce, western hemlock, and alder was nevertheless generally successful. The park is officially dedicated as a state natural area, the highest level of protection given under the Oregon Natural Heritage Act (Armstrong 1964: 183). Until the Sunset Highway opened from Portland just after World War II, most visitors had to go through either Seaside or Tillamook to reach the park. Attendance then increased enough to build a small overnight camp consisting of six tent sites in the early 1950s, a number eventually increased to ten. Most visits to what is now Saddle Mountain State Natural Area are day use, however, something that has roughly doubled (to almost 56,000 in 2011) over the past half century (White et al. 2012: 19; Armstrong 1965: 183).

[188] The larger context of those comments are as follows:

"*The preservation of forest beauties is a matter of deep concern to the lumber industry. And it is not my intention or wish to deprive private owners of valuable lands of those things which they have acquired by rightful and legal process. This move is not backed by socialistic intent, now any propaganda to disturb the progress of an industry. Rather, I find the timber owners generally eager and willing to cooperate. But it would be wrong to ask them to surrender vast tracts of valuable timberlands without just compensation, nor do I believe it could be done. In fact, vast tracts are not needed to carry this plan to fruition. Isolated tracts tucked away in pretty nooks; virgin stretches of forest along highways, to be retained of sufficient width to leave the beauties of the landscapes unimpaired; new plantings of trees, shrubberies and foliage along the highways, all of these things can be accommodated without too great expense and without arbitrary confiscation of property.*

"Some state agency should be the directing head in these endeavors, and I believe that the state highway commission, working in cooperation with the forestry department, the proper body to be clothed with necessary powers.

"This matter should not be cast lightly aside. While the hand of man has done much and is doing much to make Oregon a great state, the hand of God fashioned here in the primeval wilderness an ideal earthly paradise which we must preserve as nearly intact as possible without impeding the ordinary progress of civilization…One large company, the Crown Willamette Paper Company, immediately ceased cutting of timber along the Seaside-Cannon Beach Highway in Clatsop county and I understand is marking time pending action of your honorable body. That road probably accommodates more tourists than any other single road in the state during the summer season and on that road is demonstrated very forcibly the difference between natural timber beauties and the naked stretches left after logging operations with modern machinery have denuded the hillsides. So marked is the difference I venture to say no person passes over the road but comments upon it. That is a single instance. Hundreds of others

present themselves. The highway department has cooperated in keeping the executive office advised as to these things and that department I am certain would throw itself into assisting in the work with whole-hearted energy" (Olcott 1921).

[189] An unusually wide and densely forested Highway 101 state right-of-way runs through the area seen by Olcott today, apparently connected to these events.

[190] Arriving from Colorado, Samuel Boardman had founded a homestead east of the Cascades near the community that now bears his name. Having mixed success farming in this very arid part of the state, he began to take extra work planting shade trees at scenic waysides for the state's Highway Department in the early decades of the 20th century. He was hired as Oregon began to develop its state park system as a branch of that department, focusing on the protection of roadside scenery and wayside development (Boardman 1956; Boardman n.d.).

[191] Though the point is often overlooked in conventional historical accounts, this was an extended family. Glisan and Minott were brother and sister; their mother was a member of the Couch family. Caroline and Louise Flanders were sisters, and apparently second cousins to the Minotts and Glisans; they were also daughters of John Couch Flanders, for whom Flanders Street is named in Portland. (John Couch Flanders was named for his uncle, former sea captain, John C. Couch, Glisan and Minott's grandfather). The Couch, Flanders, Glisan and Minott families were all involved in the Portland Chamber of Commerce and the Glisan and Flanders men were prominent attorneys in the city. They were of New England ancestry and the families had been early homesteaders in the Portland area. Meanwhile L.A. Lewis was also on the Portland Chamber of Commerce; working in retail, mining and banking, he became prominent in Portland real estate in the first decades of the 20th century, serving as director of the Pioneer Real Estate Company and the Lewis Investment Company, as well as resource firms including the Columbia Mines Company. The records of his real estate interests are held in the University of Oregon Libraries' Special Collections. He was also the national "Grand Exalted Leader" in the "Benevolent and Protective Order of Elks" in 1947. The Lewis, Glisan, Minott and Flanders families were reported to be fellow adventurers on the coast, exploring its many beaches and headlands on extended hiking trips by the first decade of the 20th century (Glisan 1909; Yale University 1905).

[192] In truth, the land ownership patterns at Ecola were complex in the early 20th century, reflecting the circuitous process of federal lighthouse planning relating to Tillamook Head, as well as the interests of both timber companies and second-home owners in these properties. In 1910, a U.S. Lighthouse Reserve still sat on the westernmost tip of Tillamook Head. The interior lands of Tillamook Head were largely owned by H.E. Noble, an investor in timberlands. The southern shoreline – from Indian Beach to Chapman Point – was owned by the Glisan, Flanders, and Lewis families, who would ultimately contribute portions of their lands to the State of Oregon for the creation of a park; the Minotts, who are listed as partial owners at the time of park creation, were part of the Glisan family. There was little development in the park other than the homes of these families. Rodney Glisan (1909) mentioned a "Sea Lion hunter's trail" descending to the rocky shore near Ecola Point. In the 1930s, much of Ecola State Park was largely situated within tracts of timberlands owned by Willamette Paper Company – which owned much of the southwestern county timberlands – with smaller tracts owned by small private investment firms. The "Ecola Point and Indian Beach Company" owned the immediate shoreline from just north of Indian Beach to the north face of Chapman Point at that time (Metzger 1930, 1910, Glisan 1909; Gainor Minott pers. comm. 2009).

[193] Descendants continue to own homes on the park's southern boundary to this day. As an outcome of negotiations for the land purchase, State Park staff maintained a trail leading from their homes to Crescent Beach, through the southern end of the park. Still maintained by park crews today, this trail is known locally as "Gainor's Trail" in reference to Minott descendant Gainor Minott who continued to occupy the family's home at the trailhead until her death – which occurred during the writing of this document; Minott could still recall many details of Boardman's negotiations with her family surrounding the donation Ecola State Park from her childhood, which have contributed to the current account (Gainor Minott, pers. comm. 2009).

[194] Specifically, in 1934, the Oregon State Planning Board reported of Tillamook Head,

"*This high forested promontory is conspicuous from the Clatsop beaches and is a scenic feature upon which much of the property values and resort patronage of these communities have been indirectly predicated. The preservation of the Head in its natural*

condition is important for this reason as well as for the conservation of the recreational resources existing within the area... The transfer of this unused lighthouse reserve to the state and acquisition of Tillamook Head would complete this park unit and insure the conservation of a valuable recreational area" (Oregon Planning Board 1934).

[195] Civilian Conservation Corps activities, beginning in 1935, included the development of the 7-mile long entrance road still in use today. Over the next four years, enrollees built an entrance road from the nearest highway, a 2.5 mile trail from the parking area that climbs 1,600 feet to the top of Saddle Mountain, as well as several other major improvements (Merriam 1992: 219-20; Armstrong 1965: 128; Portland Oregonian 1928). As Oregon State Parks Superintendent, Samuel Boardman would note,

"*During the CCC movement in Oregon, a camp of two hundred boys was set up for the development of Saddle Mountain Park [building roads, bridges, and trails, planting trees and conducting surveys]. The park wouldn't have become a reality if it hadn't been for the regulations of the CC agenda to construct roads*" (Boardman 1952).

[196] Cumulatively, in part due to its exposed and unstable geology, the cultural resources of Ecola are modest, considering the extent to which they were developed by the mid-20th century. In 1961, several days of heavy rains had saturated the soils of Oregon's north coast, contributing to a landslide that slumped roughly 125 acres of the park westward into the Pacific. Damaged were the core portions of the park, including portions of the Ecola Point village complex archaeological site and a significant proportion of the CCC facilities. An entire lake on Ecola Point, sometimes used by boating visitors, disappeared almost overnight. No single event has ever had such a disastrous effect upon the cultural resources of the park since its genesis in 1932. The scarp at the head of the slide can still be clearly seen to the east of the Ecola Point parking lot, and the slide area continues to exhibit younger trees and muddy, unsettled slopes compared to the adjacent terrain (North and Byrne 1965).The archaeological sites at Bald Point have eroded dramatically in recent decades, while petroglyphs reported at Indian Beach early in the park's history are no longer visible due to erosion, vandalism, or both.

[197] U.S. Congress established the parallel National Wildlife Service managed Washington Islands Wilderness in 1970 under Public Law 91-504, but this only included the rocky northern Pacific coast of Washington.

[198] Willapa National Wildlife Refuge added Leadbetter Point in 1968, the turbulent sandspit tip of the Long Beach Peninsula; lands to the south of this preserve were acquired by Washington State Parks, to produce Leadbetter Point State Park. The point is named for Lt. Danville Leadbetter of the 1850s Coast Survey. Later additions to the Willapa National Wildlife Refuge Complex included the 1972 addition of the Lewis and Clark National Wildlife Refuge, extended from just upstream of Tongue Point near Astoria to the vicinity of Skamokawa. Set aside to protect some 33,000 acres of complex intertidal, water and shoreline – including islands, sand bars, mud flats and tidal marshes on the Columbia estuary – added initially to protect shorebird habitat for ducks, tundra swans, and Canadian geese. Also added in that year was the Julia Butler Hansen National Wildlife Refuge for the Columbian White-tail Deer, established in 1972 in Cathlamet; largely to protect the Columbia white-tailed deer, which was endemic to the Columbia riparian and had come close to extinction (though the reserve clearly had other values for fish, waterfowl, amphibians, and a diverse range of other species). The reserve was named in honor of Hansen (1907-88), a woman raised locally, who went on to be a member of the Washington State House of Representatives, followed by over six terms in the U.S. Congress, as well as other high public offices.

[199] These reviews of deed transfers for Fort Columbia and Fort Canby are based on a detailed review of files available in the Washington State Park files in Olympia by Alex McMurry, Cultural Resources specialist for that agency.

[200] This account of Fort Stevens' turbulent transfer to State of Oregon management is synthesized from a compilation of Boardman's correspondence from 1946-1949 regarding the status of the proposed park lands at Fort Stevens from the files of Oregon Parks and Recreation Department in Salem. Key correspondents include William Whipple, J.W. Miles, Robert Hickson, O.E. Walsh, Dick Darnielle (U.S. Army Corps of Engineers), James Hogg (Astoria Kiwanis Club), Frederick Hetzel (Astoria Chamber of Commerce), and A.Walter Norblad (Oregon 1st District U.S. Congressman) (Boardman n.d.). State parks brought their own Scots broom planting programs, often making arrangements with local growers to produce nursery stock that was planted on shifting dunes (Boardman n.d.)

[201] Samuel Boardman, Oregon State Parks to Fred L. Andrus, the Astorian Budget, November 28, 1947. In Boardman (n.d.).

[202] Yeon was also influential in prompting Oregon State Parks to improve public beach access in various ways; see Talbot (1992:97).

[203] The acquisition of the Yeon property by the National Park Service occurred concurrently with the current research; the property is still being assessed, while much of the written record regarding the transfer of both the Norman Yeon property on Clatsop Plains and the John Yeon property in Cannon Beach has not become part of the public record. Much of the discussion here, by necessity, is based on a series of informal interviews by the lead author rather than a thorough written record. Points of reference in this narrative include the accounts of personal friends of the Yeon family still living in the area (e.g., William Itman and Andrew Kerr, pers. comm. 2012), City of Cannon Beach planning staff (Rainmar Bartl, pers. comm. 2011), agency and non-profit staff who participated in the transfer of the Norman Yeon property from his estate, via the Trust for Public land to the National Park Service (e.g., Neal G. Maine, pers. comm. 2011; David Szymanski, pers. comm. 2012), and professional architectural specialists who have been recruited to assess the site since its acquisition (e.g., John Goodenberger, pers. comm. 2011). A full study of the site's history and architecture is pending at the time of this writing.

[204] This log house – faintly visible in the middle distance from Ecola Point – was determined to be National Register eligible. However, an arsonist burned it to the ground in the 1990s; the current house on the site is an exact replica. Oswald West State Park, one of the Oregon coast's larger state parks, sits on the southern end of Clatsop County and is also visible from Ecola Point. This park, originally named Short Sand Beach State Park, is named for him; Samuel Boardman tried unsuccessfully to develop this into a much larger park of national consequence, by adding to it most of the large mountains visible from Ecola State Park to the south of Cannon Beach – an initiative that has recently been resumed by non-profit conservation organizations.

[205] Some portion of the lands originally given to the state of Oregon for the creation of a Saddle Mountain park were transferred to Crown Zellerbach in the course of these negotiations, ostensibly to offset the loss of stumpage revenue to Clatsop County. The Elmer Feldenheimer State Natural Area was named after Elmer Feldenheimer, an Oregon-based outdoorsman at the request of his family, who provided substantial financial support for the transaction. There are no public facilities on these lands, and no plans to provide access in the future; an extended moratorium on public facilities on these lands was a condition to their acquisition (Merriam 1992; Boardman n.d.).

[206] As the preceding pages attest, the LEWI parks provide ample opportunity to share these historical events with the public–from the early history of rail-based tourism and tourist promotion, to the history of conservation and parks movements. Still, surprisingly little remains of the historic landmarks associated with these events, due to the newness of the park's recreational uses and the loss of key landmarks to time, nature, and progress. The CCC infrastructure at Ecola State Park was largely lost to landslides and the elements, while the landmarks of the "Clamshell Railroad" were largely obliterated to make way for transportation developments at what became the Dismal Nitch and Station Camp units of the park. The fort structure at Fort Clatsop is a recent replica, built to replace the 1955 replica that burned to the ground during the 2005-06 bicentennial. The Salt Works presents visitors with another historical replica. At Cape Disappointment and Fort Stevens, there was little opportunity for tourist development until the second half of the 20th century. The parks, themselves, are testament to these stories. Situated at the parks, visitors have the opportunity to encounter this history–and it's a history that continues to be written.

[207] The National Register implications of this research are many. The existing nominations for all of the park units might benefit from revision and elaboration, aided in part by this document. Cape Disappointment's nomination, from 1975, is thorough for its time, centered on the cape's role in the history of European exploration and military fortification on the lower Columbia River. Supplementary materials of this study (an unattached appendix) add themes and a level of detail that could be used to revise the cape's nomination to good effect. The existing Fort Columbia nomination, an early National Historic Landmark nomination, focuses almost exclusively on the importance of the landmark (which may, in truth, be misidentified) in the 1792 "discovery" of the Columbia by Robert Gray. Another supplementary appendix includes several themes likely to be included in preparations of a National Register nomination for that site, including Chinook use of the site and Euro-American attempts at early settlement, as well as the site's considerable military history. Fort Stevens, too, might benefit from a revision of its very brief 1971 nomination, which focused on military structures. Another

supplementary appendix provides guideposts for this effort, which might incorporate themes of Clatsop Native American history, early Euro-American settlement, lifesaving and navigation facilities, and even the history of park development in the mid-20th century–all themes relevant to the location where Fort Stevens now resides that were not included in the original nomination.

The National Park Service will need to revisit the National Register documentation for the park in light of the mid-2000s park expansions, as well as the information provided in this study. While there are no new properties within NPS management that are expected to meet the integrity standards of the National Register within the expanded park footprint, it's likely that a revised Fort Clatsop nomination is in order, and that the nomination will include new themes in its context statement, reflecting broader historical events that occurred there over time. In the Fort Clatsop portion of the park, the National Park Service would be justified in adding references to the use of the Netul Landing area for Spruce Production Division operations during World War I, as well as the later use of that site as a log dump facility by private rail- and later truck-based logging operations. This document, as well as documents recently developed by the park's interpretive volunteers and staff, will constitute guideposts in that effort. References to 19th century homesteading and the early development of tourist facilities can be added too, accentuating the story of the Shane farm, their brief collaboration with rail magnate Ben Holladay to develop a steamer dock and wagon road on the property, and later efforts to develop a Fort Clatsop memorial park on the site (including the 1955 replica and its 2005-06 replacement). Native American use and occupation of the site as well as the 1850s Moore sawmill, while thinly documented, may also warrant inclusion in such a nomination's general historical narrative. No additional information would be required to update that portion of the existing 1988 Fort Clatsop nomination relating to the Seaside Salt Works. Little has changed there since the late 1980s. The Fort-to-Sea Trail, meanwhile, only approximates the trail used by Lewis and Clark, as well as the Clatsops and the 19th century settlers and travelers, and relates only indirectly to the story of transportation between the Fort Clatsop area and the Pacific coast beaches. It remains an important interpretive tool for the park, as well as a recreational resource. While there are many sites of historical significance along the Fort-to-Sea Trail, none of these lands are in NPS ownership. They are likely to be of interpretive value, but the public lands along the trail's length do not independently warrant inclusion in a revised Fort Clatsop nomination. The National Register status of the newly-acquired Yeon property rests largely on the Yeon house's architectural significance, which is beyond the scope of this document (though it is in the process of being evaluated for the NPS by architectural historians familiar with Yeon's biography and architectural influences).

As part of its recent expansion, the NPS also acquired the "Dismal Nitch" rest area on the north side of the Columbia River. This site could be included within a revised Fort Clatsop nomination. While the Lewis and Clark associations with the site remain ambiguous, the Dismal Nitch rest area does have its own unique history post-dating the Corps of Discovery that is nonetheless worthy of mention in a revised nomination. Most significantly, the site served as the terminus of the "Clamshell Railroad," where the narrow-gauge railway reached its steamboat wharf. The railroad served as the cornerstone of Pacific County's early tourist industry and contributed to the development (or persistence) of a number of Long Beach Peninsula communities. There are no resources in NPS management warranting National Register status, as the facilities have been largely demolished, the former rail terminus and wharf site now being occupied by the Dismal Nitch parking lot. Dismal Nitch was also a minor landmark within the booming salmon canning industry of the latter 19th century–situated between fish receiving stations for decades, and serving as safe harbor to small-scale gillnetters working the prime fish netting grounds just offshore. Fish weirs, fish wheels, gillnets, and any number of other technologies were employed on, or very near this cove. No associated structures persist, save a few pilings in the river shallows, and it's unlikely these would warrant independent National Register listing. Still, these features, and the fishing history they represent, provide an outstanding opportunity for public education and interpretation, from the convenient vantage point of the Dismal Nitch rest area.

The two remaining Oregon State Parks within the LEWI umbrella–Sunset Beach State Recreation Area and Ecola State Park–have their own histories that may warrant broader Oregon Parks and Recreation Department (OPRD) interpretation. In the case of Ecola State Park, OPRD might consider revisiting their National Register status. Ecola's archaeological sites have been listed on the National Register in the course of a broader OPRD effort to document and nominate archaeological sites in many Oregon coast state parks. As at the three military parks addressed in supplementary appendices, Ecola State Park might be well represented by a cultural landscape nomination that would account for its Native American occupation and use, its Lewis and Clark history, early efforts to develop lighthouse facilities, the development of a World War II radar installation in its boundaries, and its prominent role within the history of state park

development in the 1920s and 1930s, including the nascent conservation movement and the use of Civilian Conservation Corps crews to develop early park infrastructure. Unfortunately, the combined effects of building demolition, major landslides, and uneven attention to the integrity of historical properties have left few enduring resources that speak to this history–save perhaps archaeological sites, military infrastructure, and sparse historical sites linked to the Lewis and Clark story but having no material manifestation. In truth, the information contained in the current document may ultimately be of greater value to interpretation than to any National Register nomination effort.

At the time of this writing, several studies are in planning stages that could help accomplish the interpretive and management goals of the National Park Service and its state park partners in Oregon and Washington. An investigation of the history of the Yeon property, especially focusing on the architectural history of the site, was launched by that land's acquisition and will surely add considerable depth to our knowledge of that site. The study may also clarify whether a National Register nomination is warranted for the property and, if so, what it might contain. A Traditional Use Study has been proposed for the park, involving not only the review of the published and archival record of the Native American tribes associated with the park's sub-units, but also the direct involvement of these tribes in contributing information they may wish to share. This might prove an invaluable source of cultural information to clarify not only the historical Native American use of these lands, but their enduring use and significance today. As such, such an investigation can help not only to identify additional resources, such as archaeological resources, deserving of protection, but can help determine whether there are places within the park sub-units–most of them possessing a rich Native American history–that warrant the designation as "Traditional Cultural Properties." If undertaken with due sensitivity, oral history research with interested Native American interviewees, either as part of this study or independently, has the potential to yield benefits to Native American communities in addition to parks and park visitors. The process of tribal consultation associated with such an undertaking may also yield its own rewards, helping the tribes and agencies to identify issues of mutual concern and possibilities for future collaboration.

Other studies, proposed or underway with the aid of LEWI partners at the Washington State Historical Society, have the potential to expand our knowledge of the north shore of the Columbia in a variety of ways. A study of the location of Clark's Dismal Nitch, currently underway, may yet conclude that the actual Dismal Nitch location lies to the east of the current NPS rest area, based on a variety of historical clues. Another study being initiated at the time of this writing, will involve a detailed review of accounts of Chinook interaction with traders along the northern bank of the estuary; this effort may be expanded over time to include discussions of the changing landscapes of the northern Columbia River estuary bank from European contact to the present day. Such a study may clarify the exact chronologies and locations of human occupation in more detail than was attempted in the current document, thus clearing up such mysteries as the changing location of the landmarks called "Chinook Point" through the 19th and early 20th centuries.

Yet there are a variety of other specialized studies that might be considered based on findings of this study that have yet to be formally proposed. Park sub-unit histories–written specifically about individual sub-units of LEWI, and with greater depth and cohesion that what can be provide here–would clearly be of value to park interpreters and to the visiting public alike. Such histories could be compiled readily, using some of the same sources and methods employed in the current report, and drawing on the considerable expertise of local historians. Focused guides for interpreters, or for the public, based on such content are likely to be well-received. Also, while the NPS has been involved in a modest amount of oral history research with, for example, logging operators who used the Netul Landing log dump in the 20th century, there are other communities whose stories would provide a welcome window onto the history of park lands and resources: there are, for example, many people still alive who remember the circumstances of World War II on this coast, but their knowledge is, in all honesty, a steadily diminishing resource as that generation grows older and many pass from the scene, their recollections unrecorded. Collaborative research with the Columbia Pacific Heritage Museum's growing oral history program on such an effort might be one appealing option for pursuing such research.

Other opportunities have presented themselves in the course of this research that span somewhat beyond the immediate interests of the National Park Service, but would be of great value to its partner state parks. For example, while there are a number of detailed histories of the development of the Oregon State Park system (e.g., Merriam 1992; Talbot 1992; Armstrong 1965; Boardman 1954), the history of Washington state parks has received relatively cursory treatment, making it exceedingly difficult for interpreters, researchers, or resource managers to provide a statewide context for parks on the north side of the river (cf. Washington State Parks and Recreation Commission 1988). The partner agencies of LEWI would be performing a very valuable service in advocating for such a broader study, which could be readily developed based on available archival sources.

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