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Emerging Contaminants in Oregon Coastal Waters: Hotspots, Landscape Drivers and Synergistic Effects on Bivalves

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(in collaboration with Elena Nilsen, Kathy Conn, Lori Pillsbury, Steve Rumrill)

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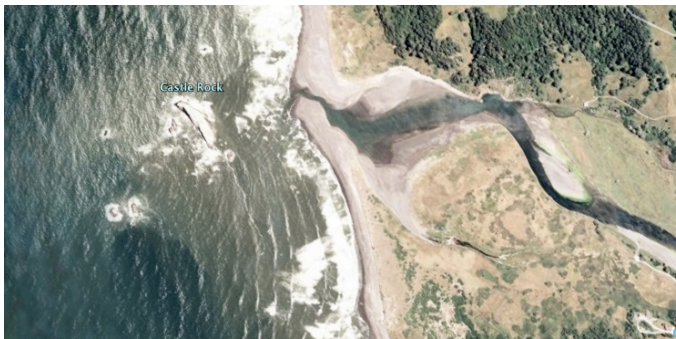
Research questions

- Types and levels of contaminants of emerging concern (CECs) in Oregon's coastal ocean?
- Hotspots and sources?
- Levels of CECs in native and commercial oysters?
- Ecological effects (growth, reproductive output, etc.) of these contaminants in marine bivalves?

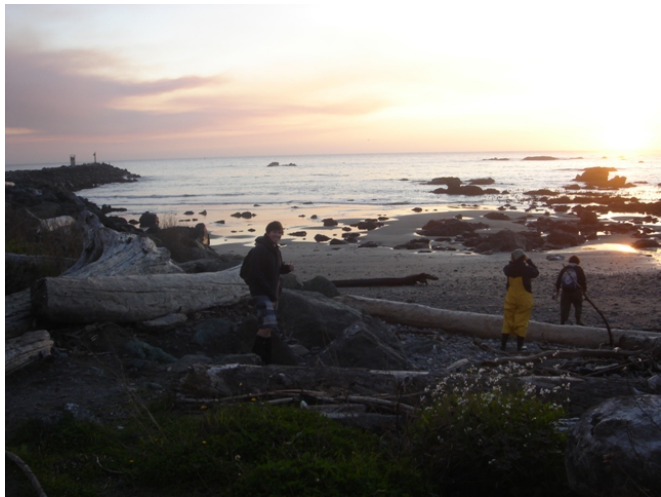


Methods: sample location selection

- Field sampling of water, bivalves
- Exposure experiments in tanks
- Transect sampling in groundwater and surface waters to identify sources and pathways
- GIS Analysis - distribution of contaminants and potential drivers

Previous findings

- Caffeine detected in Oregon's coastal ocean
- No correspondence with pollution threats
- High caffeine concentrations correlated with storm event on April 2, 2010
- Strong inverse relationship between caffeine concentrations in rivers and adjacent surf-zone sites



North Coast (4/3/10)

South Coast 4/10/10