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Coordinated Population Forecast for Wheeler County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2019-2069

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Coordinated Population Forecast

2019

Through

2069

Wheeler County

Urban Growth Boundaries (UGB) & Area Outside UGBs

Population Research Center
PORTLAND STATE UNIVERSITY

Cover Photo: Downtown Fossil, Wheeler County, Oregon. Gary Halvorson, Oregon State Archives.

Coordinated Population Forecast for Wheeler County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2019-2069

Prepared by

Population Research Center

College of Urban and Public Affairs

Portland State University

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How to Read this Report

This report should be read with reference to the documents listed below—downloadable on the Forecast Program website (http://www.pdx.edu/prc/opfp).

Specifically, the reader should refer to the following documents:

- *Methods and Data for Developing Coordinated Population Forecasts*—Provides a detailed description and discussion of the forecast methods employed. This document also describes the assumptions that feed into these methods and determine the forecast output.
- *Forecast Tables*—Provides complete tables of population forecast numbers by county and all sub-areas within each county for each five-year interval of the forecast period (2019-2069).

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Modified Methodology

The Population Research Center, in consultation with DLCD, has identified cost savings associated with a modified methodology for the latter half of the 50-year forecast period (years 26 to 50). Based on feedback we have received, a 25-year forecast fulfills most requirements for local planning purposes and, in an effort to improve the cost effectiveness of the program; we will place more focus on years 1 through 25. Additionally, the cost savings from this move will allow DLCD to utilize additional resources for local government grants. To clarify, we use forecast methods to produce sub-area and county populations for the first 25 years and a modified projection method for the remaining 25 years. The description of our forecast methodology can be accessed through the forecast program website (www.pdx.edu/prc/opfp), while the summary of our modified projection method is below.

For years 26-50, PRC projects the county population using the annual growth rate from the 24th-25th year. For example, if we forecast a county to grow 0.4 percent between the 24th and 25th year of the forecast, we would project the county population thereafter using a 0.4 percent AAGR. To allocate the projected county population to its sub-areas, we extrapolate the change in sub-area shares of county population observed in years 1-25 and apply them to the projected county population.

Comparison to Cycle 1 (2015-17)

To keep up to date with local trends and shifting demands, OPFP regularly updates coordinated population forecasts for Oregon's areas. Beyond the modification to our methodology and additional forecast region (from three regions to four), there are differences between the 2019 updated forecast for Wheeler County and the 2016 version. Overall, the 2019 county forecast is consistent with last round for the 25-year period (2019-2044), though UGBs are expected to capture more of the county's forecasted population relative to last round. The full breakdown of differences by county and sub-area is stored here: https://www.pdx.edu/prc/current-documents-and-presentations.

Executive Summary

Historical

Different parts of the County experience different growth patterns. Local trends within UGBs and the area outside them collectively influence population growth rates for the County as a whole. UGBs in Wheeler County include Fossil, Mitchell, and Spray.

Wheeler County's total population had minimal decline in the 2000s (**Figure 1**). However, some of its sub-areas did experience population growth during this period. Spray, for example, grew 1.6 percent on average annually during the 2000 to 2010 period.

The population decline in the 2000s stemmed from consistent natural decrease and stretches of net out-migration. An aging population not only led to an increase in deaths but also resulted in a smaller proportion of women in their childbearing years. This, along with more women having fewer children and having them at older ages has led to births stagnating in recent years. A larger number of deaths relative to births caused a natural decrease (more deaths than births) most years from 2001 to 2017, resulting in minimal population change.

Forecast

Total population in Wheeler County will likely continue to decline but at a progressively slower pace throughout the forecast period (**Figure 1**). Population decline is largely driven by an aging population and natural decrease outpacing net in-migration. Wheeler County's total population is forecast to decline by roughly 125 people over the next 25 years (2019-2044) and by 200 over the entire 50-year period (2019-2069).

Figure 1. Wheeler County and Sub-Areas—Historical and Forecast Populations, and Average Annual Growth Rates (AAGR)

	Historical			Forecast					
	2000	2010	AAGR (2000-2010)	2019	2044	2069	AAGR (2010-2019)	AAGR (2019-2044)	AAGR (2044-2069)
Wheeler County	**1,547**	**1,441**	***-0.7%***	**1,363**	**1,238**	**1,161**	***-0.6%***	***-0.4%***	***-0.3%***
Fossil	469	473	*0.1%*	462	461	468	*-0.3%*	*0.0%*	*0.1%*
Mitchell	163	130	*-2.2%*	124	104	89	*-0.5%*	*-0.7%*	*-0.6%*
Spray	142	167	*1.6%*	161	163	168	*-0.4%*	*0.0%*	*0.1%*
Outside UGBs	773	671	*-1.4%*	615	510	436	*-0.9%*	*-0.7%*	*-0.6%*

Sources: U.S. Census Bureau, 2000 and 2010 Censuses; Forecast by Population Research Center (PRC).

Note: For simplicity each UGB is referred to by its primary city's name.

14-Year Population Forecast

In accordance with House Bill 2254, which streamlined the UGB process based on long-term housing and employment needs, **Figure 2** provides a 14-year population forecast (2019-2033) for the County and its sub-areas. Populations at the 14th year of the forecast were interpolated using the average annual growth rate between the 2030-2035 period. The population interpolation template is stored here: https://www.pdx.edu/prc/current-documents-and-presentations.

Figure 2. Wheeler County and Sub-Areas—14-Year Population Forecast

	2019	2033	14-Year Change	AAGR (2019-2033)
Wheeler County	**1,363**	**1,283**	**-80**	***-0.4%***
Fossil	462	458	-4	*-0.1%*
Mitchell	124	110	-15	*-0.9%*
Spray	161	162	1	*0.0%*
Outside UGBs	615	553	-62	*-0.8%*

Sources: Forecast by Population Research Center (PRC).

Note: For simplicity each UGB is referred to by its primary city's name.

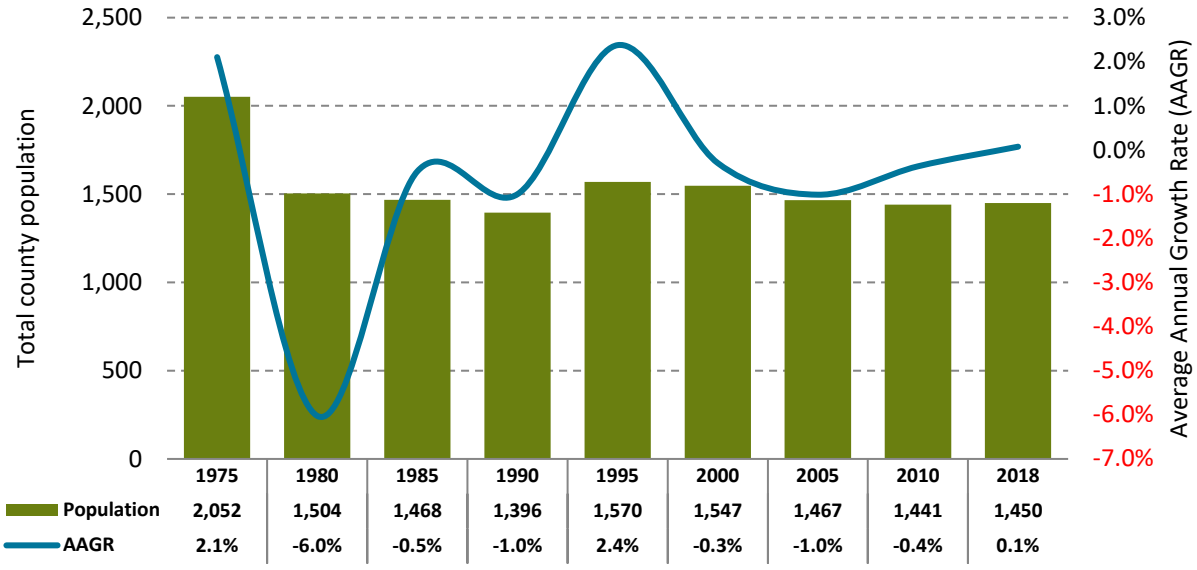
Historical Trends

Different growth patterns occur in different parts of Wheeler County. Each of Wheeler County's sub-areas were examined for any significant demographic characteristics or changes in population or housing growth that might influence their individual forecasts. Factors analyzed include age composition of the population, race and ethnicity, births, deaths, migration, the number of housing units, occupancy rate, and persons per household (PPH). It should be noted that population trends of individual sub-areas often differ from those of the County as a whole. However, population growth rates for the County are collectively influenced by local trends within its sub-areas.

Population

Wheeler County's total population declined from roughly 2,050 in 1975 to about 1,450[1] in 2018 (**Figure 3**). During this period, the County experienced the highest growth rates during the late 1970s, which coincided with a period of relative economic prosperity. During the early 1980s, challenging economic conditions, both nationally and within the county, led to negative population growth rates. During the early 1990s population growth rates again increased but challenging economic conditions late in the decade again yielded declines that continued throughout the 2000s. Since 2010, Gilliam County has experienced negligible population change.

Figure 3. Wheeler County—Total Population by Five-year Intervals (1975-2018)



Sources: U.S. Census Bureau, 1980, 1990, 2000, and 2010 Censuses; Population Research Center (PRC), July 1st Annual Estimates 1975, 1985, 1995, 2005 and 2018.

[1] Population Estimates from the Oregon Population Estimates Program (OPEP) may not be consistent with the 2019 population forecast due to different methodologies and data sources.

During the 2000s, Wheeler County's average annual population growth rate stood at -0.7 percent (**Figure 4**). However, not all sub-areas experienced decline during this period. Spray and Fossil recorded positive average annual growth rates of 1.6 and 0.1 percent. Conversely, population loss in Mitchell and the outside UGB area outweighed growth in the other sub-areas, resulting in population decline for the County as a whole.

Figure 4. Wheeler County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)[2]

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
Wheeler County	*1,547*	*1,441*	*-0.7%*	*100.0%*	*100.0%*	*0.0%*
Fossil	*469*	*473*	0.1%	30.3%	32.8%	2.5%
Mitchell	*163*	*130*	-2.2%	10.5%	9.0%	-1.5%
Spray	*142*	*167*	1.6%	9.2%	11.6%	2.4%
Outside UGBs	*773*	*671*	-1.4%	50.0%	46.6%	-3.4%

Sources: U.S. Census Bureau, 2000 and 2010 Censuses.

Note: For simplicity each UGB is referred to by its primary city's name.

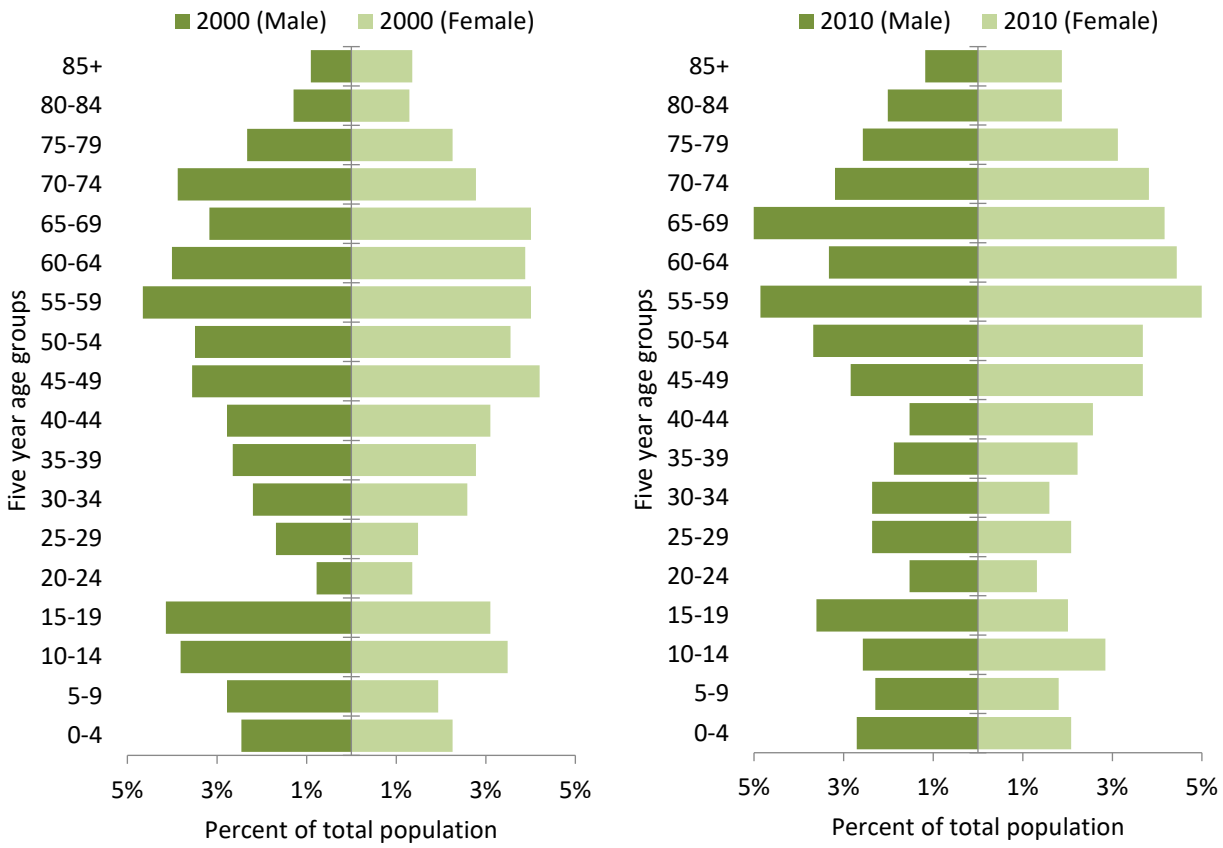
Age Structure of the Population

Similar to most areas across Oregon, Wheeler County's population is aging. An aging population significantly influences the number of deaths but also yields a smaller proportion of women in their childbearing years, which may result in a slowdown or decline in births. The shift in the age structure from 2000 to 2010 illustrates this phenomenon (**Figure 5**). Further underscoring the countywide trend in aging—the median age went from about 48.1 in 2000 to 53 in 2010[3].

[2] When considering growth rates and population growth overall, it should be noted that a slowing of growth rates does not necessarily correspond to a slowing of population growth in absolute numbers. For example, if a UGB with a population of 100 grows by another 100 people, it has doubled in population. If it then grows by another 100 people during the next year, its relative growth is half of what it was before even though absolute growth stays the same.

[3] Median age is sourced from the U.S. Census Bureau's 2000 and 2010 Censuses.

Figure 5. Wheeler County—Age Structure of the Population (2000 and 2010)



Sources: U.S. Census Bureau, 2000 and 2010 Censuses

Race and Ethnicity

While the statewide population is aging, another demographic shift is occurring across Oregon: minority populations are growing as a share of total population. A growing minority population affects both the number of births and average household size. The Hispanic population within Wheeler County decreased slightly from 2000 to 2010 (**Figure 6**), while the White; not Hispanic population declined moderately over the same time period. The increase in the population share of minority populations brings with it several implications for future population change. First, both nationally and at the state level, fertility rates among Hispanic and minority women tend to be higher than among White; not Hispanic women. However, it is important to note more recent trends show these rates are quickly decreasing. Second, Hispanic and minority households tend to be larger relative to White; not Hispanic households.

Figure 6. Wheeler County—Hispanic or Latino and Race (2000 and 2010)

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
Total population	1,547	100.0%	1,441	100.0%	-106	-6.9%
Hispanic or Latino	79	5.1%	62	4.3%	-17	-21.5%
Not Hispanic or Latino	1,468	94.9%	1,379	95.7%	-89	-6.1%
White alone	1,431	92.5%	1,307	90.7%	-124	-8.7%
Black or African American alone	1	0.1%	0	0.0%	-1	-100.0%
American Indian and Alaska Native alone	8	0.5%	16	1.1%	8	100.0%
Asian alone	4	0.3%	8	0.6%	4	100.0%
Native Hawaiian and Other Pacific Islander alone	0	0.0%	2	0.1%	2	--
Some Other Race alone	0	0.0%	5	0.3%	5	--
Two or More Races	24	1.6%	41	2.8%	17	70.8%

Sources: U.S. Census Bureau, 2000 and 2010 Censuses.

Births

Historic total fertility rates (TFR), or the average number of children that would be born to a woman over her lifetime, have increased substantially in Wheeler County in comparison to eastern Oregon counties as a whole (Region 2) (**Figure 7**). The county's age specific fertility rates fluctuated from 2000 to 2010 due to its small population size, but total fertility rates were lower in Wheeler County in 2000 compared to 2010, similar to Region 2 as a whole (**Figure 8**). Total fertility in both the County and the Region 2 were above replacement fertility (2.1) in 2010, indicating that future cohorts of women in their birth-giving years will grow overtime, excluding the influence of net in/out-migration.

Figure 7. Wheeler County and Region 2—Total Fertility Rates (2000 and 2010)

Total Fertility Rate (TFR)

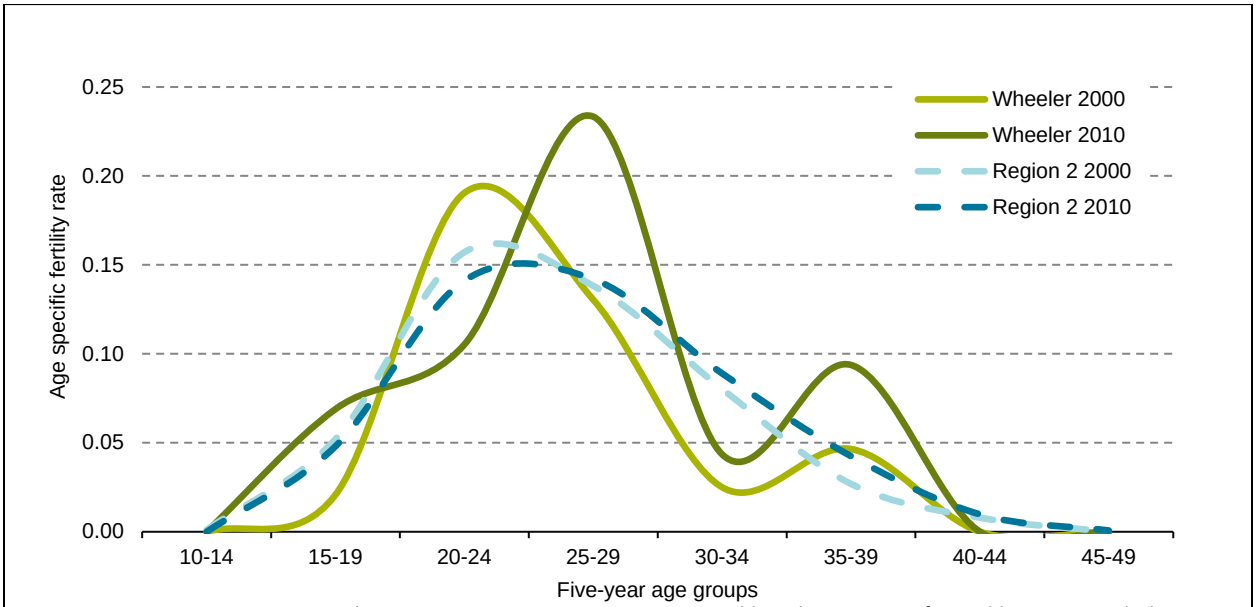
	2000	2010
Wheeler County	2.07	2.72
Region 2	2.32	2.37

Sources: U.S. Census Bureau, 2000 and 2010 Censuses.
Oregon Health Authority, Center for Health Statistics.
Calculations by Population Research Center (PRC).

	2000	2010
Wheeler County	2.07	2.72
Region 2	2.32	2.37

Sources: U.S. Census Bureau, 2000 and 2010 Censuses.
Oregon Health Authority, Center for Health Statistics.
Calculations by Population Research Center (PRC).

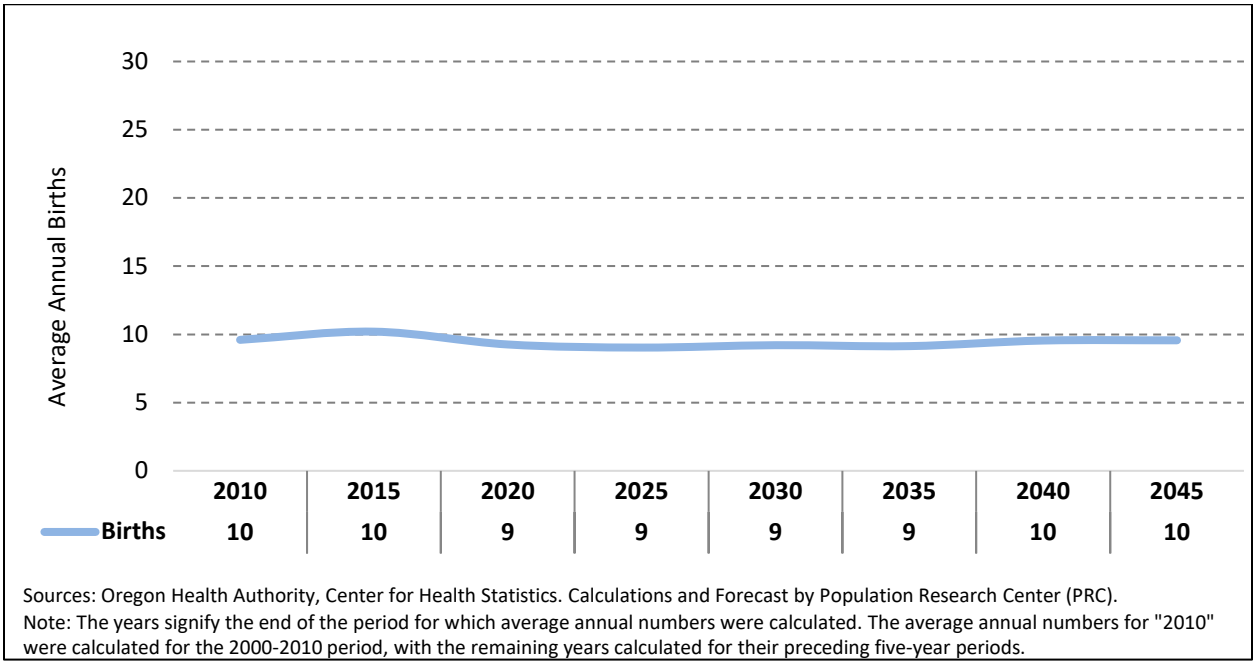
Figure 8. Wheeler County and Region 2—Age Specific Fertility Rate (2000 and 2010)



Sources: U.S. Census Bureau, 2000 and 2010 Censuses. PRC Estimates. Oregon Health Authority, Center for Health Statistics. Calculations and Forecast by Population Research Center (PRC).

Figure 9 shows the number of historic and forecasted births for the county. Historically, the number of annual births has been stable and the forecast expects this trend to continue through 2045.

Figure 9. Wheeler County—Average Annual Births (2010-2045)

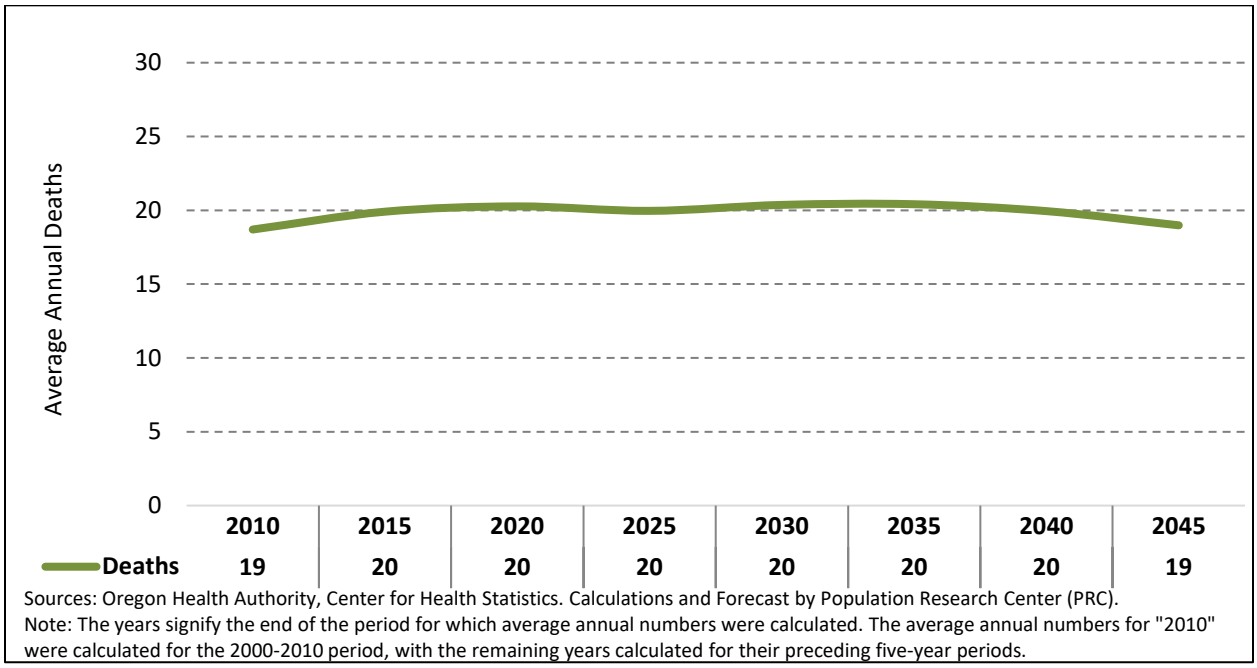


Sources: Oregon Health Authority, Center for Health Statistics. Calculations and Forecast by Population Research Center (PRC).
Note: The years signify the end of the period for which average annual numbers were calculated. The average annual numbers for "2010" were calculated for the 2000-2010 period, with the remaining years calculated for their preceding five-year periods.

Deaths

The population in the county, as a whole, is aging and contrary to the statewide trend, people of all ages are not necessarily living longer[4]. For both Wheeler County and eastern Oregon, the survival rates changed little between 2000 and 2010, underscoring the fact that mortality is the most stable component, relative to birth and migration rates, of population change. Average annual deaths are expected to be stable overtime (**Figure 10**).

Figure 10. Wheeler County—Average Annual Deaths (2010-2045)



Sources: Oregon Health Authority, Center for Health Statistics. Calculations and Forecast by Population Research Center (PRC).
Note: The years signify the end of the period for which average annual numbers were calculated. The average annual numbers for "2010" were calculated for the 2000-2010 period, with the remaining years calculated for their preceding five-year periods.

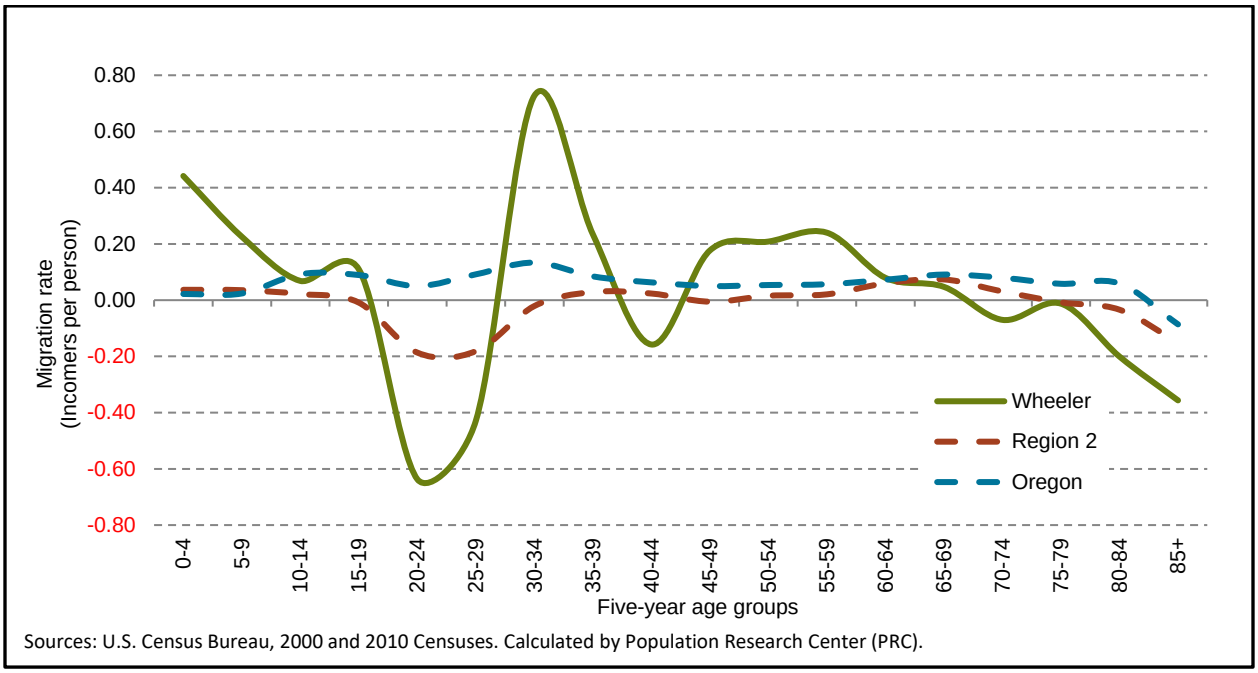
[4] Researchers have found evidence for a widening rural-urban gap in life expectancy. This gap is particularly apparent between race and income groups and may be one explanation for the decline in life expectancy in the 2000s. See the following research article for more information. *Singh, Gopal K., and Mohammad Siahpush. "Widening rural-urban disparities in life expectancy, US, 1969-2009." American Journal of Preventative Medicine 46, no. 2 (2014): e19-e29.*

Migration

The propensity to migrate is strongly linked to age and stage of life. As such, age-specific migration rates are critically important for assessing these patterns across five-year age cohorts. **Figure 11** shows the historical age-specific migration rates by five-year age group for Wheeler County, eastern Oregon (Region 2), and Oregon. The migration rate is shown as the number of net migrants per person by age group.

The County experienced a net out-migration in the 00s, but its age specific migration rates reflect the patterns of many other Oregon counties. Young adults (20-29) leave the County seeking higher education and employment opportunities, but return in their 30s with their children. People in their late 40s to 60s made up a large proportion of net in-migrants in the 00s, but left the County shortly thereafter for retirement of to areas with medical facilities and end-of-life care.

Figure 11. Wheeler County, Region 2, and Oregon—Age Specific Migration Rates (2000-2010)

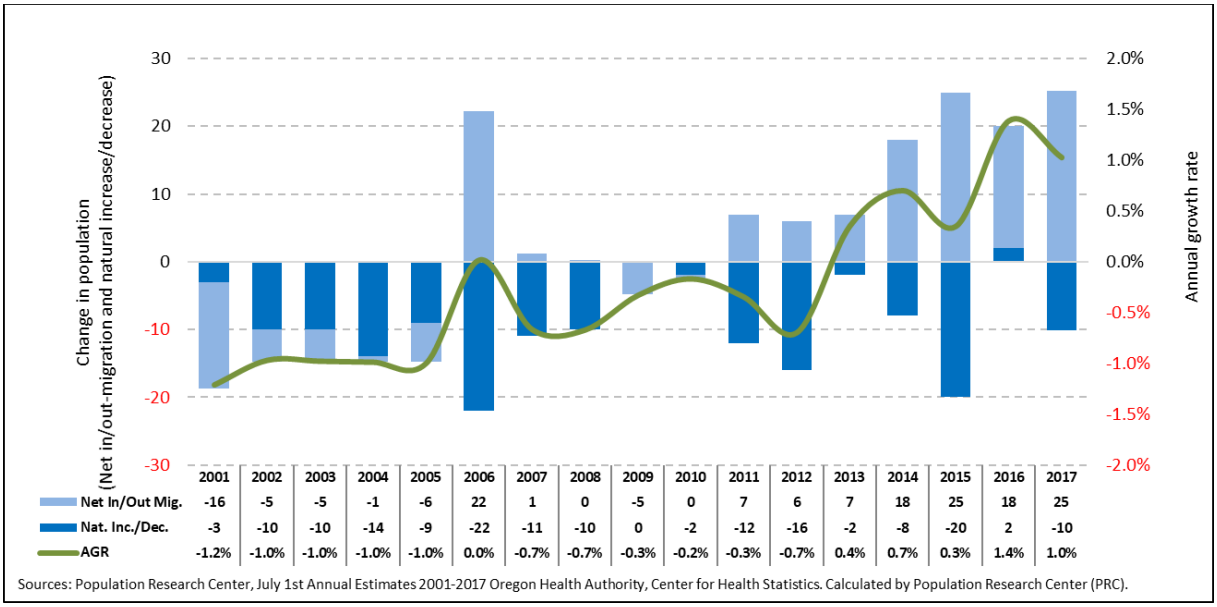


Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC).

Historical Trends in Components of Population Change

In summary, Wheeler County's population decline during the 2000s was the result of a consistent natural decrease (**Figure 12**). Sporadic net in/out-migration combined with natural decrease has produced minimal population change for the county.

Figure 12. Wheeler County—Components of Population Change (2001-2017)[5]



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Net In/Out Mig.	-16	-5	-5	-1	-6	22	1	0	-5	0	7	6	7	18	25	18	25
Nat. Inc./Dec.	-3	-10	-10	-14	-9	-22	-11	-10	0	-2	-12	-16	-2	-8	-20	2	-10
AGR	-1.2%	-1.0%	-1.0%	-1.0%	-1.0%	0.0%	-0.7%	-0.7%	-0.3%	-0.2%	-0.3%	-0.7%	0.4%	0.7%	0.3%	1.4%	1.0%

Sources: Population Research Center, July 1st Annual Estimates 2001-2017 Oregon Health Authority, Center for Health Statistics. Calculated by Population Research Center (PRC).

[5] Annual net in/out-migration estimates are based on population estimates from the Oregon Population Estimates Program. As such, migration assumptions for the 2019 population forecast may not be consistent with assumptions from OPEP.

Housing and Households

The total number of housing units in Wheeler County increased during the middle years of this last decade (2000 to 2010), but this growth slowed with the onset of the Great Recession in 2008. Over the entire 2000 to 2010 period, the total number of housing units increased by 6.3 percent countywide, or by 53 housing units (**Figure 13**). However, the increase was not consistent across all sub-areas. 20 new units were built in Fossil, while Spray lost 5 units. Overall, the majority of the housing growth occurred outside of the UGBs where 31 new units were built during this period.

Housing growth rates may differ from population growth rates because (1) the numbers of total housing units are smaller than the numbers of people; (2) the UGB has experienced changes in the average number of persons per household; or (3) occupancy rates have changed (typically most pronounced in coastal locations with vacation-oriented housing). However, the patterns of population and housing change in Wheeler County are relatively similar except for the areas outside of the UGBs.

Figure 13. Wheeler County and Sub-Areas—Total Housing Units (2000 and 2010)

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
Wheeler County	*842*	*895*	*0.6%*	*100.0%*	*100.0%*	*0.0%*
Fossil	245	265	0.8%	29.1%	29.6%	0.5%
Mitchell	88	83	-0.6%	10.5%	9.3%	-1.2%
Spray	90	97	0.8%	10.7%	10.8%	0.1%
Outside UGBs	419	450	0.7%	49.8%	50.3%	0.5%

Sources: U.S. Census Bureau, 2000 and 2010 Censuses

Note: For simplicity each UGB is referred to by its primary city's name.

Average household size, or persons per household (PPH), in Wheeler County was 2.2 in 2010, slightly down from 2.3 from 2000 (**Figure 14**). However, Wheeler County's PPH in 2010 was lower than Oregon's as a whole, which had a PPH of 2.5. The PPH of the County varied slightly across the sub-areas, with all of them falling between 2.0 and 2.3 persons per household. In 2010, the highest PPH was in the outside UGB area with 2.3 and the lowest in Fossil at 2.0. In general, areas with an older or aging population will, more often than not, experience a decline in PPH over time

Occupancy rates tend to fluctuate more than PPH. This is particularly true in smaller UGBs where fewer housing units allow for larger relative changes in occupancy rates. From 2000 to 2010, the occupancy rate in Wheeler County declined sharply (**Figure 14**). Mitchell experienced the greatest decline in occupancy rate of over 8 percent to 73.5 percent in 2010, followed by the outside UGB area that declined from 72.6 percent to 65.3 percent.

Figure 14. Wheeler County and Sub-Areas—Persons per Household (PPH) and Occupancy Rate

	Persons Per Household (PPH)			Occupancy Rate		
	2000	2010	Change 2000-2010	2000	2010	Change 2000-2010
Wheeler County	*2.3*	*2.2*	*-6.3%*	*77.6%*	*72.7%*	*-4.8%*
Fossil	*2.2*	*2.0*	*-6.5%*	*84.9%*	*84.5%*	*-0.4%*
Mitchell	*2.3*	*2.1*	*-5.9%*	*81.8%*	*73.5%*	*-8.3%*
Spray	*2.0*	*2.2*	*12.7%*	*76.7%*	*74.2%*	*-2.4%*
Outside UGBs	*2.5*	*2.3*	*-9.3%*	*72.6%*	*65.3%*	*-7.2%*

Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculated by Population Research Center (PRC)

Note: For simplicity each UGB is referred to by its primary city's name.

Assumptions for Future Population Change

Evaluating past demographic trends provides clues about what the future will look like and helps determine assumptions of likely scenarios for population change. Assumptions about fertility, mortality, and migration were developed for Wheeler County's forecast and for each of its larger sub-areas[6]. Population change for smaller sub-areas is determined by the change in the number of total housing units, PPH, occupancy rates, and group quarters population. Assumptions around these components of growth are derived from observations of historic building patterns, current plans for future housing development, and household demographics.

Assumptions for the County and Sub-Areas

From 2000 to 2010, Wheeler County experienced 91 more deaths than births, causing a natural decrease. The population loss was further compounded by a slight net out-migration (15 persons), which resulted in an overall population decline of 106 people during the 2000 to 2010 period. We expect natural decrease to remain consistent over time, resulting in continued population loss throughout the forecast period.

During the forecast period, the population in Wheeler County is expected to age more quickly during the first half of the forecast period and then remain relatively stable over the forecast horizon. The total fertility rate is expected to decline slightly throughout the forecast period (1.96 in 2019 to 1.90 in 2044), though births will stagnate due to a net out-migration of young adults. Our assumptions of fertility for the county's sub-areas vary and are detailed in Appendix B.

Changes in survival rates are more stable than fertility and migration rates; overall life expectancy is expected to increase slightly over the forecast period. In spite of this trend, Wheeler County's aging population will increase the overall number of deaths throughout the forecast period.

Migration is the most volatile and challenging demographic component to forecast due to the many factors influencing migration patterns. Economic, social, and environmental factors such as employment, educational opportunities, housing availability, family ties, cultural affinity, climate change, and natural amenities occurring both inside and outside the study area can affect both the direction and the volume of migration.

We assume rates will change in line with historic trends unique to Wheeler County. Net out-migration of young adults and net in-migration of families and retirees will persist throughout the forecast period. We assume that as deaths rise over time, the County will experience a net in-migration as home turnover rates increase. Specifically, countywide average annual net in-migration is expected to increase from 3 net in-migrants in 2019 to 6 net in-migrants in 2044. A growing natural decrease is expected to curb net in-migration, which results in a slight population decline.

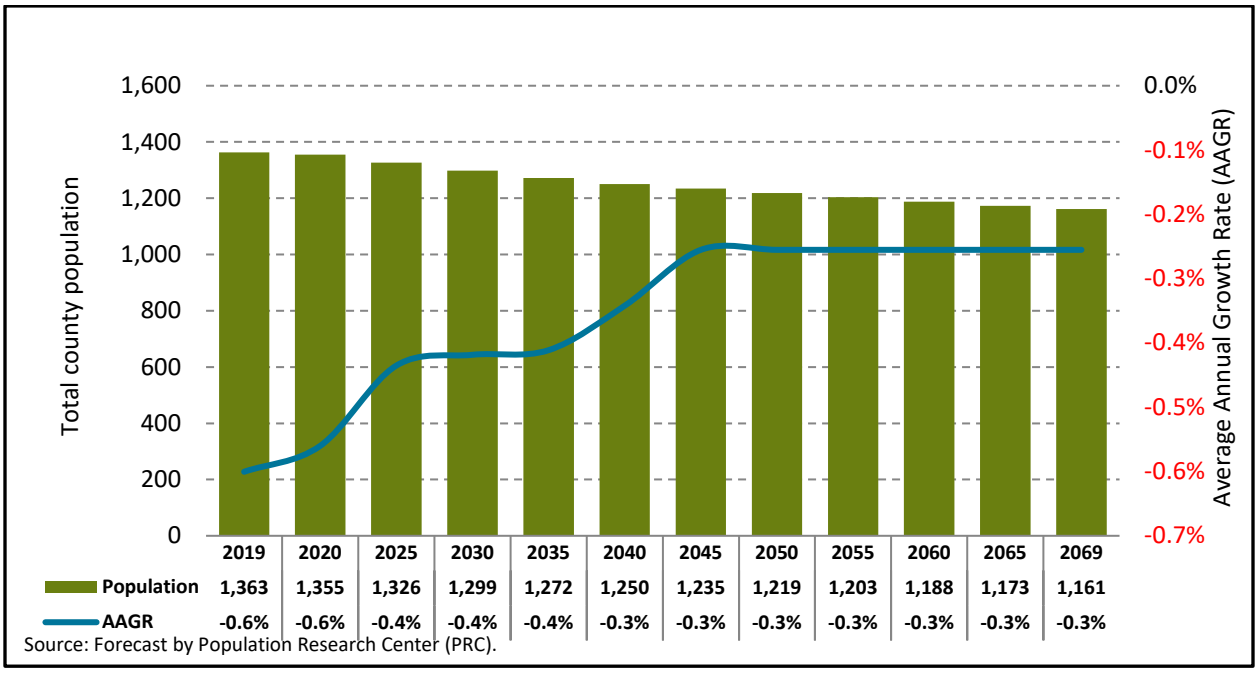
[6] County sub-areas with populations greater than 7,000 in the forecast launch year were forecast using the cohort-component method. County sub-areas with populations less than 7,000 in forecast launch year were forecast using the housing-unit method. See Glossary of Key Terms at the end of this report for a brief description of these methods or refer to the *Methods* document for a more detailed description of these forecasting techniques.

Forecast Trends

Under the most-likely population growth scenario for Wheeler County, we expect minimal change to countywide and sub-area populations over the forecast period. The declining countywide population growth rate is forecast to peak in 2020 and continue to decline at a slower rate throughout the forecast period. An aging population, contributing to steady increase in deaths, and stagnating births, drives population decline.

Wheeler County's total population is forecast to decrease by roughly 200 persons (14.8 percent) from 2019 to 2069, which translates into a total countywide population of 1,161 in 2069 (**Figure 15**). The population is forecast to decline at a higher rate of 0.5 percent annually during the near-term (2019-2025) compared to the remainder of the forecast.

Figure 15. Wheeler County—Total Forecast Population by Five-year Intervals (2019-2069)



	2019	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2069
Population	1,363	1,355	1,326	1,299	1,272	1,250	1,235	1,219	1,203	1,188	1,173	1,161
AAGR	-0.6%	-0.6%	-0.4%	-0.4%	-0.4%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%	-0.3%

Source: Forecast by Population Research Center (PRC).

Population change varies across the sub-areas within the County. The two largest UGBs—Fossil and Spray—are forecast to experience negligible change throughout the forecast period and grow by a combined total of 13 people from 2019 to 2069 (**Figure 16**). Mitchell, the other sub-area, is expected to experience population loss of 20 people from 2019 to 2044, and by another 15 people from 2044 to 2069. However, the most substantial decline in population is forecast to occur outside of the UGBs. The outside UGB area is forecast to lose over 100 people from 2019 to 2044 and another 74 people during the latter half of the forecast period.

Figure 16. Wheeler County and Sub-Areas—Forecast Population and AAGR

	2019	2044	2069	AAGR (2019-2044)	AAGR (2044-2069)	Share of County 2019	Share of County 2044	Share of County 2069
Wheeler County	**1,363**	**1,238**	**1,161**	***-0.4%***	***-0.3%***	--	--	--
Fossil	462	461	468	*0.0%*	*0.1%*	*33.9%*	*37.2%*	*40.3%*
Mitchell	124	104	89	*-0.7%*	*-0.6%*	*9.1%*	*8.4%*	*7.6%*
Spray	161	163	168	*0.0%*	*0.1%*	*11.8%*	*13.2%*	*14.4%*
Outside UGBs	615	510	436	*-0.7%*	*-0.6%*	*45.1%*	*41.2%*	*37.6%*

Source: Forecast by Population Research Center (PRC)

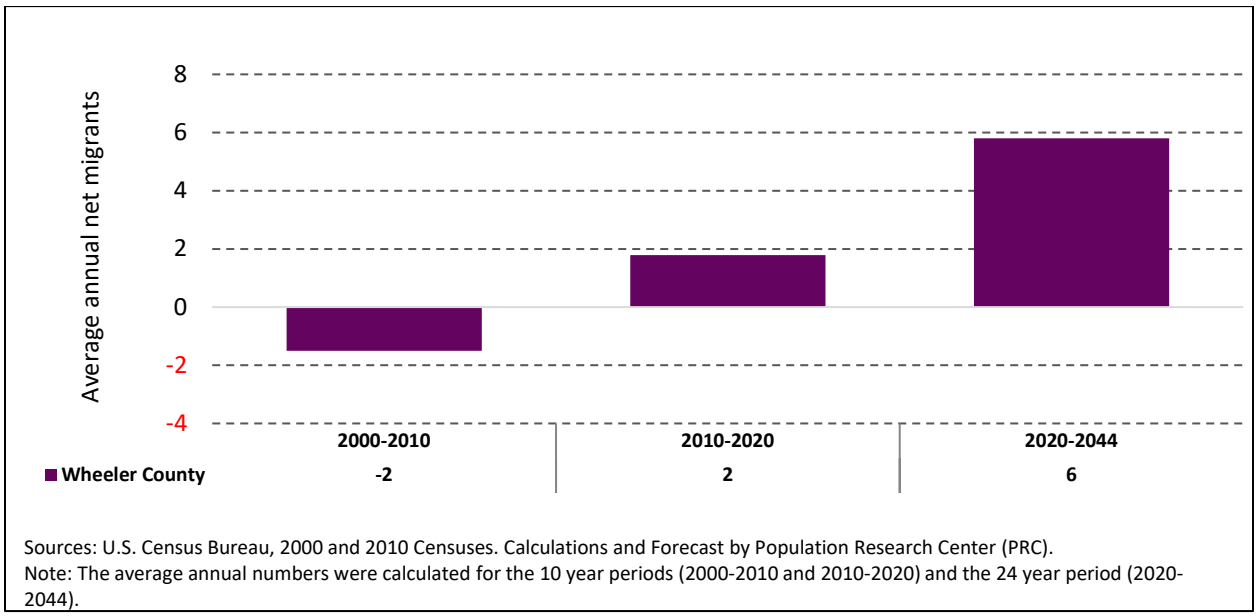
Note: For simplicity each UGB is referred to by its primary city's name.

We forecast population decline in the outside UGB area as PPH and occupancy rates decline from an aging population. This, coupled with the minor growth of populations within the UGBs, is expected to create a slight redistribution of the population. The countywide population share for Fossil is forecast to increase from 34 percent in 2019 to over 40 percent in 2069, and surpass the number of residents living outside of the all the sub- areas. Concurrently, the share for Spray is expected to increase by 2.6 while the share for Mitchell is expected to decrease by 1.5 percent. The majority of countywide loss is forecast to occur in the outside UGB area, where the share declines by 7.5 percent from 2019 to 2069.

Forecast Trends in Components of Population Change

As previously discussed, the number of in-migrants is forecast to outweigh the number of out-migrants in Wheeler County, creating a positive net in-migration of new residents that is expected to persist throughout the forecast period as housing turnover increases with deaths. Furthermore, the current average annual net out-migration is forecast to increase from the near-term rate of 2 individuals (2010-2020) to an average annual net in-migration rate of 6 individuals (2020-2044) (**Figure 17**). The majority of these net in-migrants are expected to be families and middle-aged individuals.

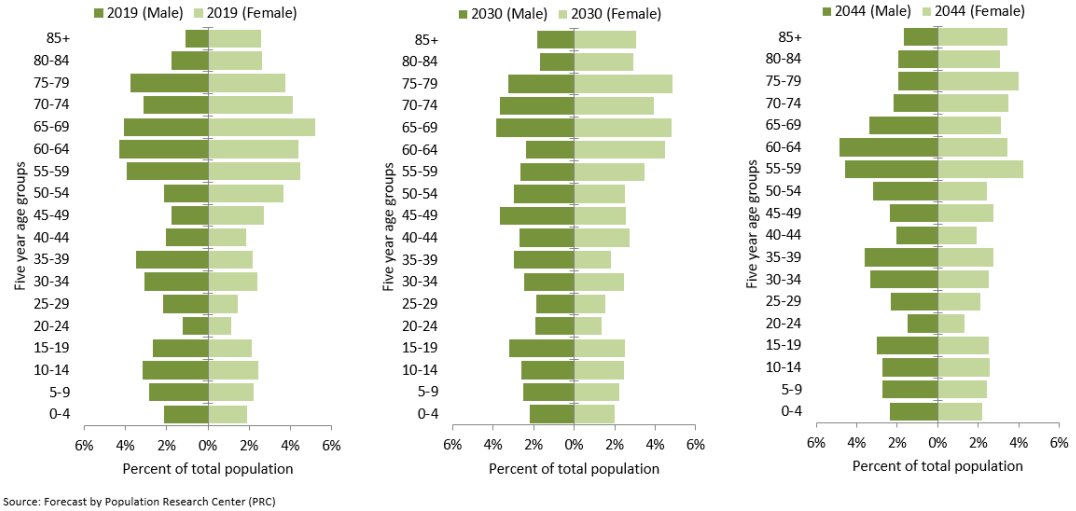
Figure 17. **Wheeler County—Average Annual Net In/Out-Migration (2000-2010, 2010-2020, and 2020-2044)**



Sources: U.S. Census Bureau, 2000 and 2010 Censuses. Calculations and Forecast by Population Research Center (PRC).
Note: The average annual numbers were calculated for the 10 year periods (2000-2010 and 2010-2020) and the 24 year period (2020-2044).

In addition to net in-migration, the other key component shaping Wheeler County's forecasted population is the aging population. From 2019 to 2030, the proportion of the County population 65 years of age or older is forecast to increase slightly from roughly 32 percent to 34 percent, before declining substantially to 28 percent by 2044 (**Figure 18**). For a more detailed look at the age structure of Wheeler County's population, see the final forecast table published to the forecast program website (https://www.pdx.edu/prc/current-documents-and-presentations).

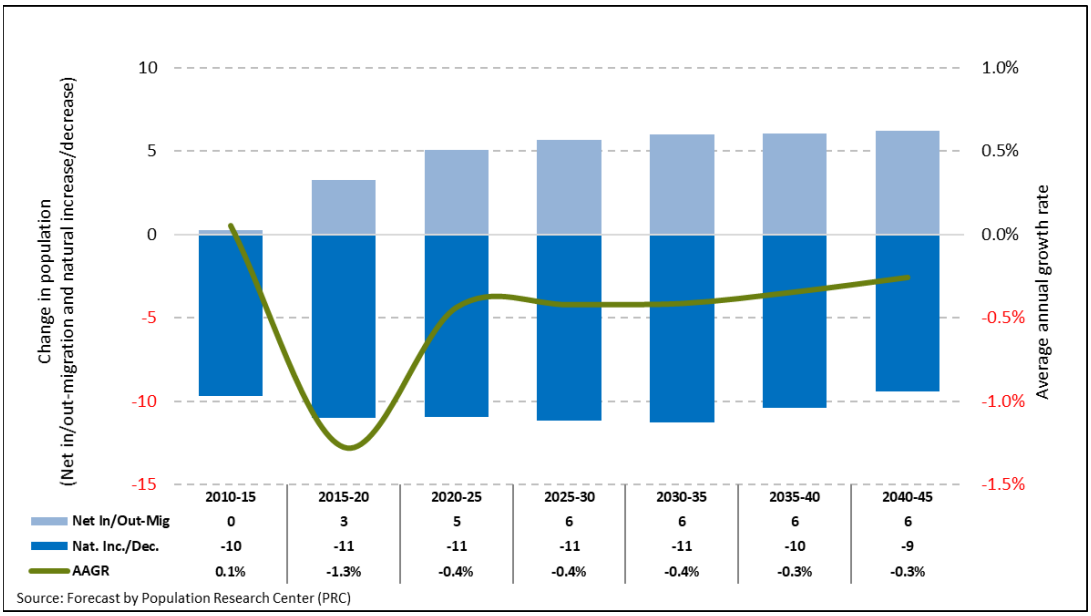
Figure 18. Wheeler County—Age Structure of the Population (2019, 2030, and 2044)



Source: Forecast by Population Research Center (PRC)

In summary, population decline is expected to peak in the near term (2020-2025) before slowing down during the latter half of the forecast period (**Figure 19**). As the population ages, the number of deaths are forecast to outweigh the number of births leading to consistent natural decrease. However, as deaths increase and houses turnover, a growing net in-migration slows the overall population decline during the latter half of the forecast.

Figure 19. Wheeler County—Components of Population Change (2010-2045)[7]



Source: Forecast by Population Research Center (PRC)

[7] 2010-15 components are based on population estimates from the Oregon Population Estimates Program. As such, natural increase/decrease and net in/out-migration for that period may not be consistent with the 2019 forecast assumptions.

Glossary of Key Terms

Cohort-Component Method: A method used to forecast future populations based on changes in births, deaths, and migration over time.

Coordinated population forecast: A population forecast prepared for the County along with population forecasts for its urban growth boundary (UGB) areas and non-UGB area.

Housing unit: A house, apartment, mobile home or trailer, group of rooms, or single room that is occupied or is intended for occupancy.

Housing-Unit Method: A method used to forecast future populations based on changes in housing unit counts, vacancy rates, the average numbers of persons per household (PPH), and group quarter population counts.

Occupancy rate: The proportion of total housing units that are occupied by an individual or group of persons.

Persons per household (PPH): The average household size (i.e. the average number of persons per occupied housing unit).

Replacement Level Fertility: The average number of children each woman needs to bear in order to replace the population (to replace each male and female) under current mortality conditions in the U.S. This is commonly estimated to be 2.1 children per woman.

Appendix A: Surveys and Supporting Information

Supporting information is based on planning documents and reports, and from submissions to PRC from city officials and staff, and other stakeholders. The information pertains to characteristics of each city area, and to changes thought to occur in the future. The citiy of Fossil did not submit survey responses.

General Survey for Oregon Population Forecast Program	
Jurisdiction: City of Mitchell	Date: December 15, 2018
Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	Our population is more elderly, fewer children each year, mostly white, with some Latinos.
Observations about Housing	The whole county of Wheeler needs housing desperately, and Mitchell needs housing funding and grants now.
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	Mitchell Oregon has no planned or projected developments.
Planned future construction of Group Quarters facilities	None to my knowledge.
Future Employers Locating to the Area	None have come forward to date.
Capacity and condition of infrastructure to accommodate growth.	Is in need of repairs from water system overhaul, street repairs, restructuring of the city park, expansion of and retention of city growth boundaries, and sewage waste system.
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	Promotions of The Painted Hills National Park, which is only 15 miles away, has increased the exposure of Mitchell to the rest of the world. With nowhere to grow, the people that would and or could move into Mitchell are not able to because of aging infrastructure, and BLM retaining our expansion property.
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth (including any plans for UGB expansion and the stage in the expansion process)	Have not seen those documents.
Comments?	

Patty Verbovanec	City of Mitchell	City Councilor
Name	*Organization*	*Title*

General Survey for Oregon Population Forecast Program

Jurisdiction: City of Spray Date: November 6 , 2018

Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	A mix between elderly and families with children. Mostly white, some Asian.
Observations about Housing	Most houses are occupied. Around 3 houses that are not occupied at any time of the year.
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	none
Planned future construction of Group Quarters facilities	none
Future Employers Locating to the Area	none
Capacity and condition of infrastructure to accommodate growth.	none
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	none
Highlights or summary from planning documents and studies on influences and anticipation of population and housing growth (including any plans for UGB expansion and the stage in the expansion process)	In the process of working on a grant for Wheeler county on county/city growth.
Comments?	In the three years, more families have moved into Spray, some with children some are retired couples.

Crystal Rey	City of Spray	City Recorder
Name	*Organization*	*Title*

Appendix B: Specific Assumptions

Fossil

We assume steady housing unit growth throughout the forecast period. We assume the occupancy rate will decline from 84.5 percent to 82.5 percent and persons per household (PPH) will decline from 1.94 to 1.72 for the 25-year horizon. We assume the group quarters population to remain at 17.

Mitchell

We assume no change to the housing unit inventory for the forecast period. We assume the occupancy rate to be stable at 73.5 percent while persons per household (PPH) will decline from 2.03 to 1.71 for the 25-year horizon. There is no group quarters population in this sub-area.

Spray

We assume the housing unit growth to be slow, but stable throughout the forecast period. We assume the occupancy rate to be stable at 74.2 percent while persons per household (PPH) will decline from 2.12 to 1.93 for the 25-year horizon. We assume the group quarters population to remain at 7.

Outside UGBs

We assume steady housing unit growth throughout the forecast period. We assume the occupancy rate will decline from 61.3 percent to 50.3 percent and persons per household (PPH) will decline from 2.13 to 1.76 for the 25-year horizon. We assume the group quarters population to remain at 1.

Appendix C: Detailed Population Forecast Results

Figure 20. Wheeler County—Population by Five-Year Age Group

Population Forecasts by Age Group / Year	2019	2020	2025	2030	2035	2040	2044
00-04	55	54	53	55	54	56	56
05-09	69	67	62	61	63	62	64
10-14	77	81	70	66	65	66	65
15-19	66	63	84	74	68	67	68
20-24	32	33	29	42	38	35	35
25-29	49	46	52	45	64	58	55
30-34	75	75	56	64	54	78	72
35-39	77	81	83	62	70	59	79
40-44	53	54	69	70	49	56	49
45-49	61	59	62	81	82	57	64
50-54	79	75	67	71	92	93	70
55-59	114	114	87	79	84	109	109
60-64	118	114	114	89	80	84	103
65-69	126	131	110	112	87	77	80
70-74	99	94	116	98	100	77	70
75-79	102	105	85	105	88	89	74
80-84	60	60	72	60	74	61	62
85+	50	50	54	63	60	66	63
Total	**1,363**	**1,355**	**1,326**	**1,299**	**1,272**	**1,250**	**1,238**

Figure 21. Wheeler County's Sub-Areas—Total Population

Area / Year	2019	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2069
Wheeler County	1,363	1,355	1,326	1,299	1,272	1,250	1,235	1,219	1,203	1,188	1,173	1,161
Fossil	462	462	461	458	458	459	461	464	469	470	469	468
Mitchell	124	124	118	111	109	106	103	100	96	93	91	89
Spray	161	161	162	162	162	162	163	165	167	168	168	168
Outside UGB Area	615	608	585	567	543	523	507	490	472	457	445	436