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Coordinated Population Forecast for Klamath County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2018-2068

Portland State University. Population Research Center

Nicholas Chun

Portland State University

Kevin Rancik

Portland State University

Rhey Haggerty

Portland State University

Joshua Ollinger

Portland State University

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Authors

Portland State University. Population Research Center, Nicholas Chun, Kevin Rancik, Rhey Haggerty, Joshua Ollinger, and Charles Rynerson

Coordinated Population Forecast



2018

Through

2068

Klamath County

Urban Growth
Boundaries (UGB)
& Area Outside UGBs

Photo Credit: Odell Lake with Diamond Peak in the background. Gary Halvorson, Oregon State Archives.

**Coordinated Population Forecast for Klamath County, its
Urban Growth Boundaries (UGB), and
Area Outside UGBs
2018-2068**

**Prepared by
Population Research Center
College of Urban and Public Affairs
Portland State University**

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Project Staff:

Nicholas Chun, Population Forecast Program Manager

Kevin Rancik, GIS & Research Analyst

Rhey Haggerty, Graduate Research Assistant

Joshua Ollinger, Graduate Research Assistant

Charles Rynerson, Research Consultant

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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 (2018-2068).

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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 .4% between the 24th and 25th year of the forecast, we would project the county population thereafter using a .4% 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 2018 updated forecast for Klamath County and the 2015 version. The 2018-68 forecast for Klamath County is lower than the 2015 forecast by 2043. Fewer forecasted net in-migrants and a greater number of forecasted deaths account for this difference. These county-level differences translate to the sub-areas, though our expectations of future sub-area shares of county population are generally consistent with last round. The full breakdown of differences by county and sub-area is stored here: www.pdx.edu/prc/cycle-2-region-1-documents.

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.

Klamath County's total population grew slowly in the 2000s, with an average annual growth rate of .4% (**Figure 1**); however, some of its sub-areas experienced faster population. Malin posted the highest average annual growth rate at 2.4 percent during the 2000 to 2010 period, while all other sub-areas experienced average annual growth rates at or below that of the county as a whole.

Klamath County's positive population growth in the 2000s was the result of steady natural increase (more births than deaths), supplemented by periodic influxes of net in-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 children at older ages has led to births stagnating in recent years. A larger number of births relative to deaths caused natural increase (more births than deaths) in every year from 2001 to 2016, but it has diminished. In recent years (2014-16), an influx of net on-migration has bolstered natural increase, leading to slow population growth (**Figure 12**).

Forecast

Total population in Klamath County as a whole as well as within its sub-areas will likely grow at a faster pace in the near-term (2018 to 2043) compared to the long-term (**Figure 1**). The tapering of growth rates is largely driven by a growing natural decrease that will cut into population growth from net in-migration and eventually overtake it. Klamath County's total population is forecast to increase by just over 1,500 over the next 25 years (2018-2043) and decline slightly by 363 people in the second half of the 50-year period. Growth rates are expected to be fairly uniform across the sub-areas.

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

	Historical			Forecast					
	2000	2010	AAGR (2000-2010)	2018	2043	2068	AAGR (2010-2018)	AAGR (2018-2043)	AAGR (2043-2068)
Klamath County	63,775	66,380	0.4%	67,957	69,465	69,102	0.3%	0.1%	0.0%
Bonanza	400	401	0.0%	441	488	528	1.2%	0.4%	0.3%
Chiloquin	747	766	0.3%	770	798	822	0.1%	0.1%	0.1%
Klamath Falls	41,541	42,567	0.2%	43,684	45,231	45,650	0.3%	0.1%	0.0%
Malin	661	836	2.4%	838	863	879	0.0%	0.1%	0.1%
Merrill	960	939	-0.2%	935	951	949	0.0%	0.1%	0.0%
Outside UGBs	19,466	20,871	0.7%	21,288	21,133	20,274	0.2%	0.0%	-0.2%

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 (2018-2032) 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: www.pdx.edu/prc/cycle-2-region-1-documents.

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

	2018	2032	14-Year Change	AAGR (2018-2032)
Klamath County	67,957	69,569	1,611	0.2%
Bonanza	441	468	27	0.4%
Chiloquin	770	773	3	0.0%
Klamath Falls	43,684	44,974	1,290	0.2%
Malin	838	851	13	0.1%
Merrill	935	946	10	0.1%
Outside UGBs	21,288	21,557	269	0.1%

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

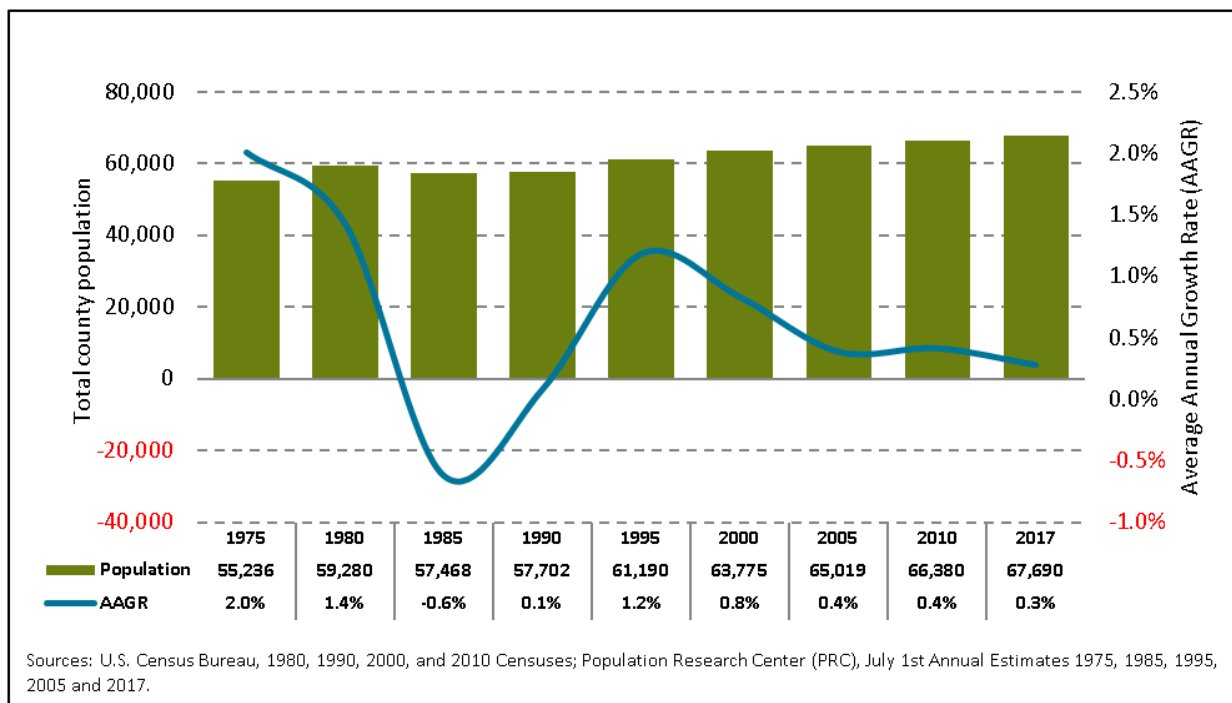
Historical Trends

Different growth patterns occur in different parts of Klamath County. Each of Klamath 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

Klamath County’s total population grew from roughly 55,200 in 1975 to about 67,700 in 2017 (**Figure 3**). During this 40-year 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 since then growth for the county slowed, averaging .4% of annual growth between 2000 and 2017.

Figure 3. Klamath County—Total Population by Five-year Intervals (1975-2017)



During the 2000s, Klamath County’s average annual population growth rate stood at 0.4 percent (**Figure 4**). Malin recorded a higher average annual growth rate (2.4 percent), while Merrill recorded a slightly negative growth rate (-0.2 percent). All other sub-areas experienced positive growth at or close to the countywide growth rate.

Figure 4. Klamath County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)¹

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010	Change (2000-2010)
<i>Klamath County</i>	63,775	66,380	0.4%	100.0%	100.0%	-0.0%
Bonanza	400	401	0.0%	0.6%	0.6%	0.0%
Chiloquin	747	766	0.3%	1.2%	1.2%	0.0%
Klamath Falls	41,541	42,567	0.2%	65.1%	64.1%	-1.0%
Malin	661	836	2.4%	1.0%	1.3%	0.2%
Merrill	960	939	-0.2%	1.5%	1.4%	-0.1%
Outside UGBs	19,466	20,871	0.7%	30.5%	31.4%	0.9%

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

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

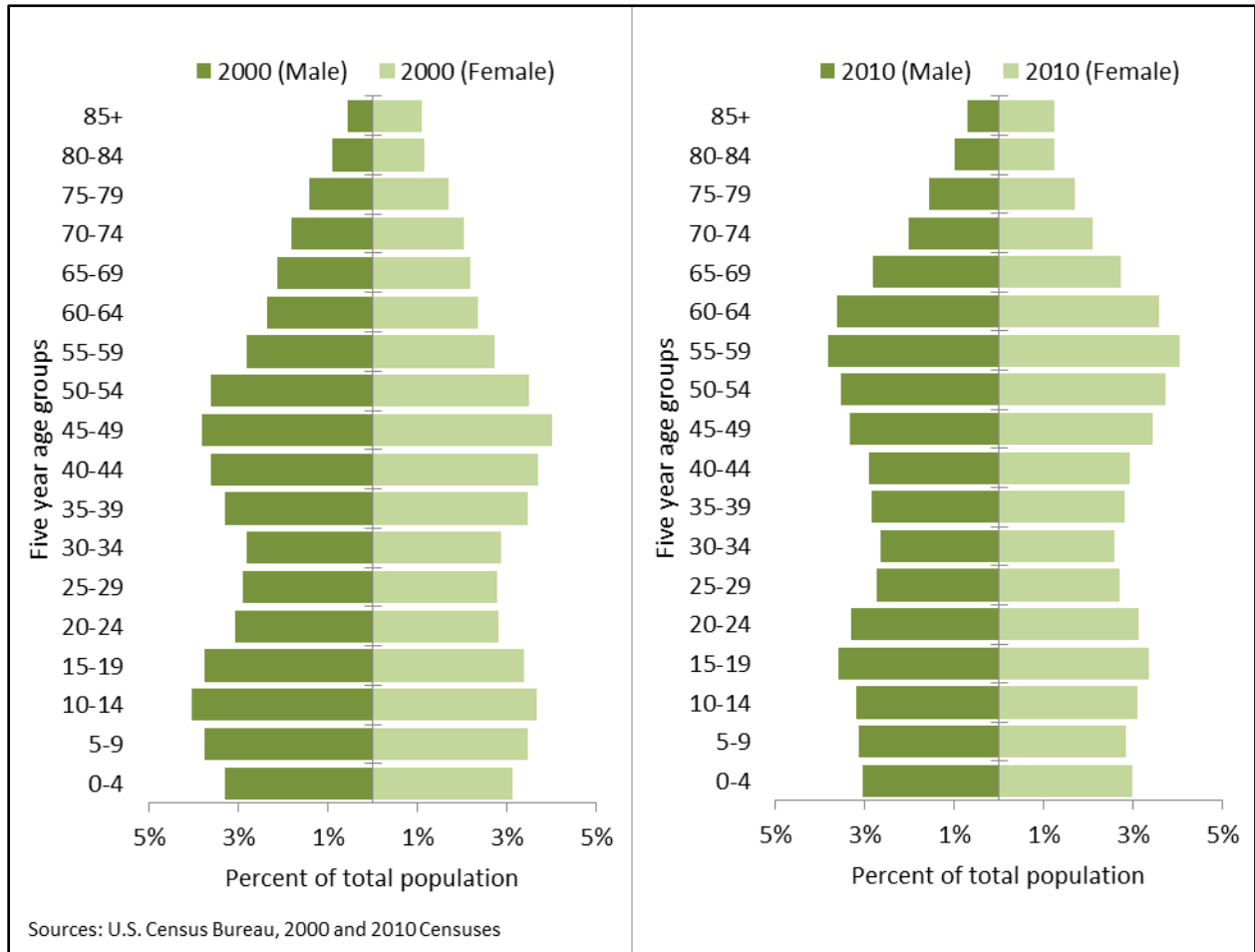
Age Structure of the Population

Similar to most areas of Oregon, Klamath 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 this countywide trend, the median age in Klamath County increased from 38.2 in 2000 to 41.7 in 2010².

¹ 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.

² Median age is sourced from the U.S. Census Bureau's 2000 and 2010 Censuses.

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



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 share of total population within Klamath County increased from 2000 to 2010 (**Figure 6**), while the White, non-Hispanic share decreased over the same time period. This increase in the Hispanic population and other 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, non-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, non-Hispanic households.

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

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
<i>Total population</i>	63,775	100.0%	66,380	100.0%	2,605	4.1%
Hispanic or Latino	4,961	7.8%	6,915	10.4%	1,954	39.4%
Not Hispanic or Latino	58,814	92.2%	59,465	89.6%	651	1.1%
White alone	53,659	84.1%	53,822	81.1%	163	0.3%
Black or African American alone	362	0.6%	394	0.6%	32	8.8%
American Indian and Alaska Native alone	2,443	3.8%	2,407	3.6%	-36	-1.5%
Asian alone	482	0.8%	615	0.9%	133	27.6%
Native Hawaiian and Other Pacific Islander alone	72	0.1%	68	0.1%	-4	-5.6%
Some Other Race alone	96	0.2%	63	0.1%	-33	-34.4%
Two or More Races	1,700	2.7%	2,096	3.2%	396	23.3%

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

Births

Historic fertility rates for Klamath County mirror statewide trends in Oregon as a whole. Total fertility rates decreased for Klamath County and the state from 2000 to 2010 because of delayed child bearing (**Figure 7**). At the same time fertility for women over 30 increased in both Klamath County and Oregon (**Figure 8**). Total fertility in Klamath County was at replacement fertility (2.1) in 2010, indicating that future cohorts of women in their birth-giving years will remain stable overtime without the influence of net in/out-migration.

Figure 7. Klamath County and Oregon—Total Fertility Rates (2000 and 2010)

Total Fertility Rate (TFR)		
	2000	2010
Klamath County	2.20	2.10
Oregon	1.98	1.81

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

Oregon Health Authority, Center for Health Statistics.

Calculations by Population Research Center (PRC).

Figure 8. Klamath County—Age Specific Fertility Rate (2000 and 2010)

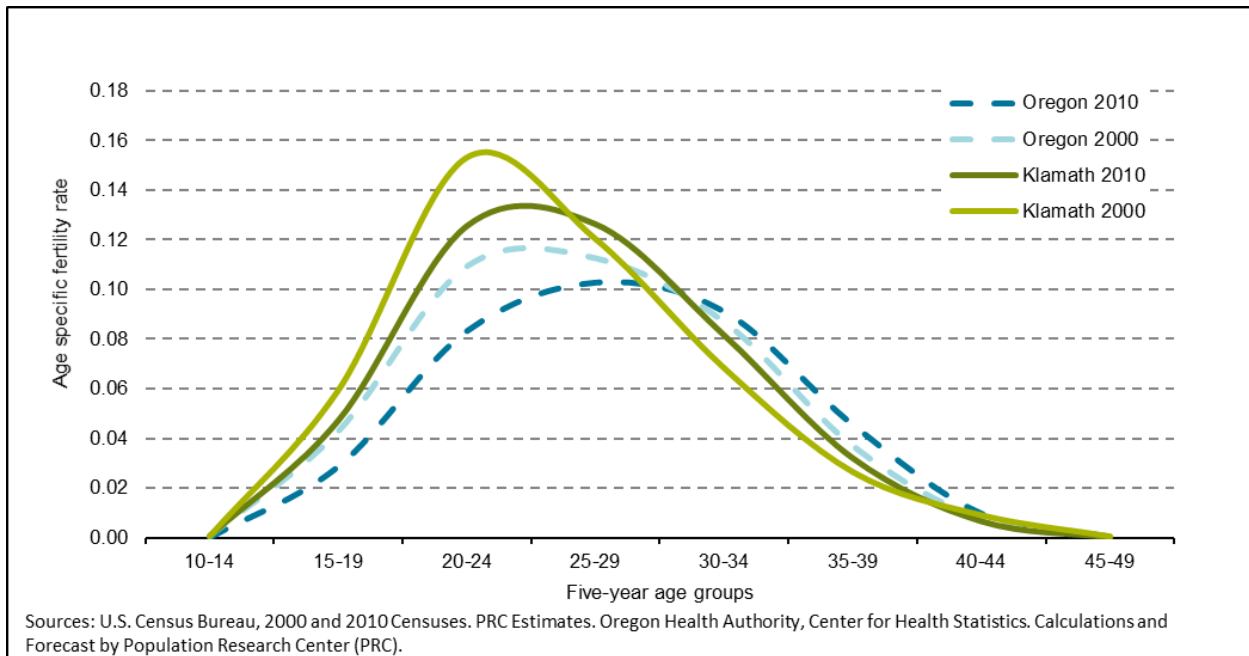
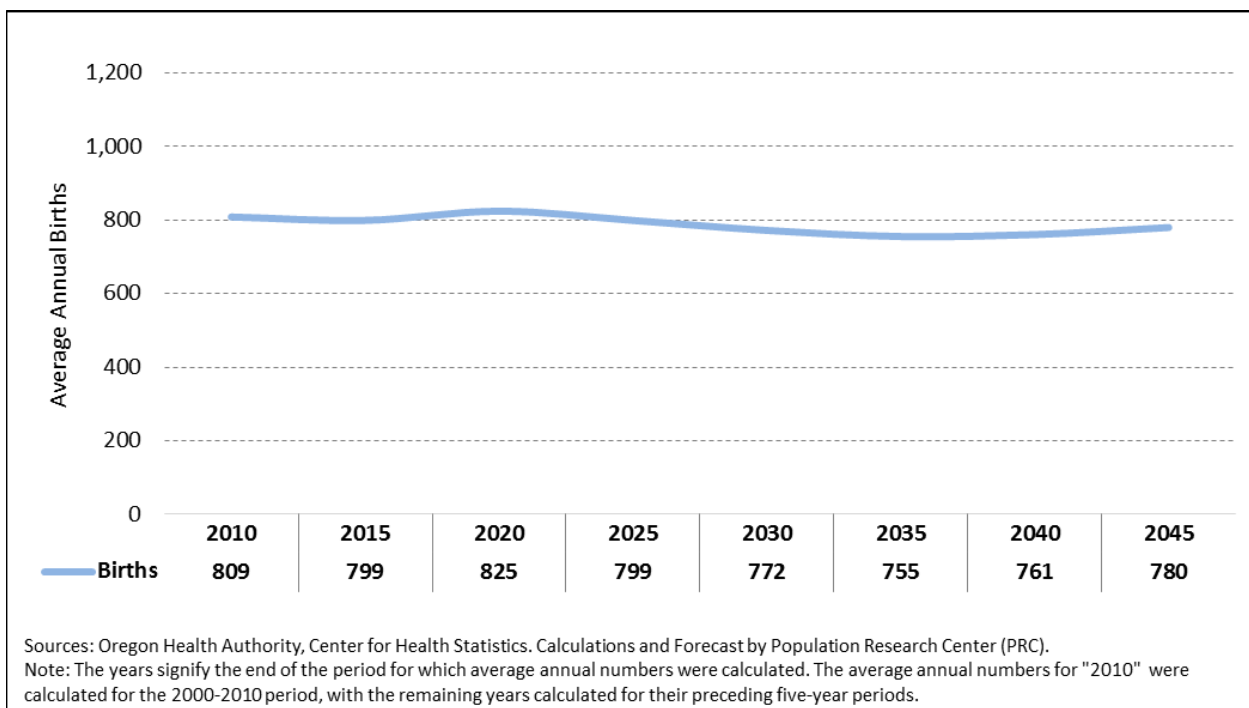


Figure 9 shows the number of historic and forecasted births for the county. The number of annual births from 2000-10 to 2010-15 remained relatively unchanged. Due to a shrinking cohort of women in their birth giving years and high fertility rates, births are expected to remain stable throughout the forecast period.

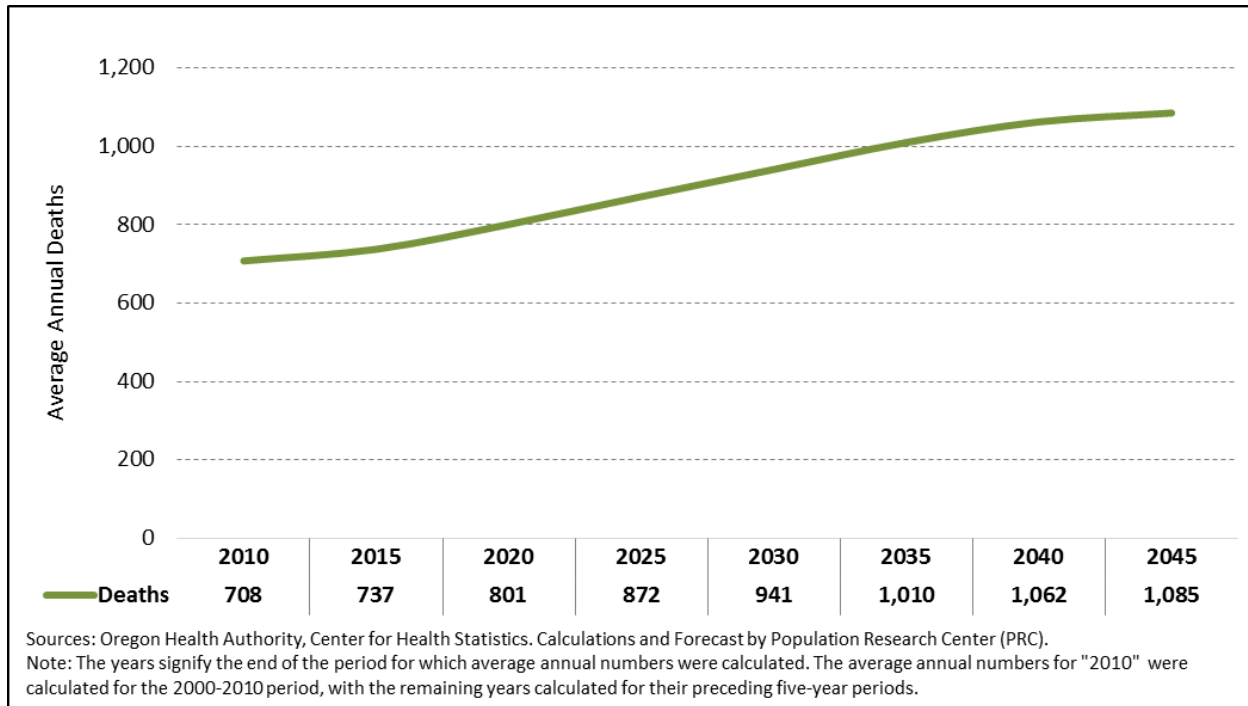
Figure 9. Klamath County—Average Annual Births (2010-2045)



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 longer³. For both Klamath County and 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. Even so, average annual deaths increased slightly from 2000-10 and 2010-15 and are expected to rise overtime (**Figure 10**).

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



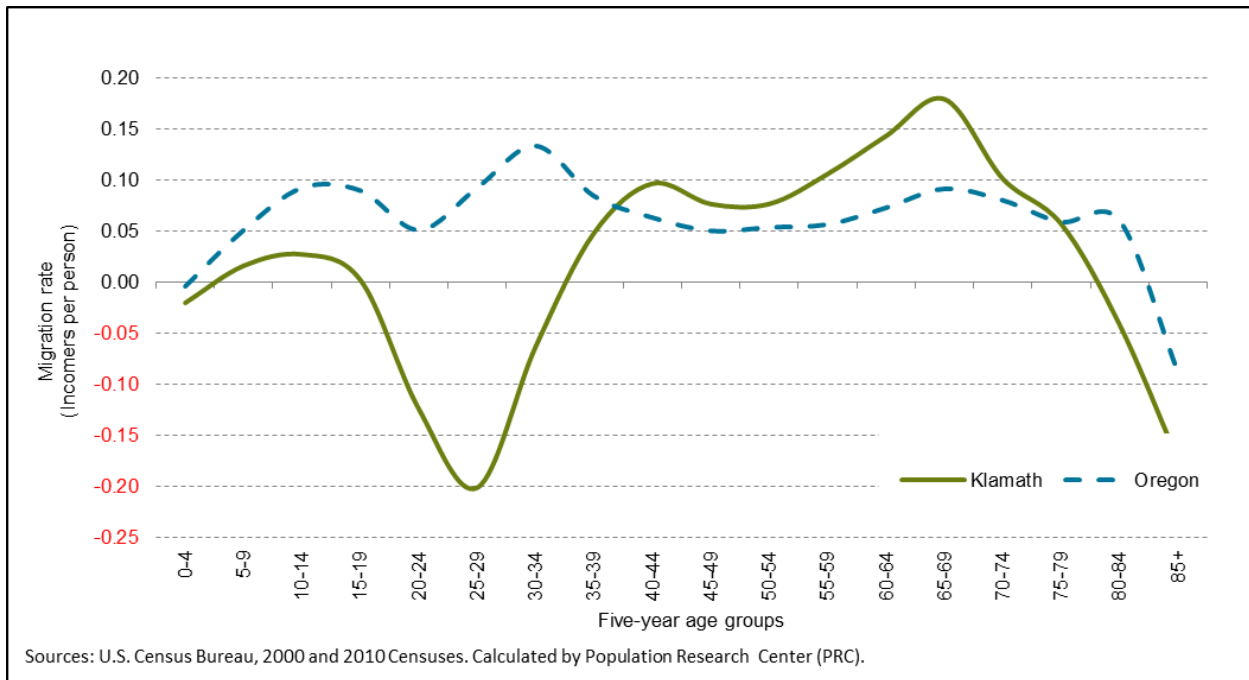
Migration

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, both for Klamath County and for Oregon. The migration rate is shown as the number of net migrants per person by age group.

Klamath County’s 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 30’s and 40’s with their children. Retirees made up a large proportion of net in-migrants in the 00’s, but left the county shortly thereafter to areas with medical facilities and end-of-life care.

³ 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.*

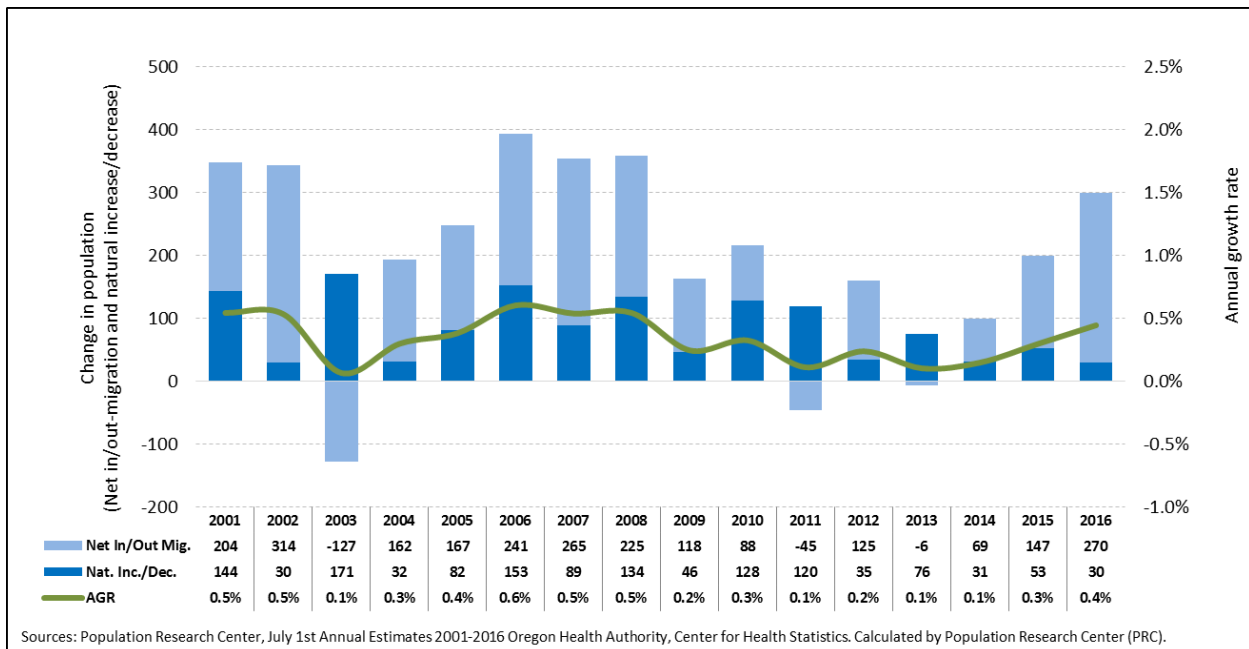
Figure 11. Klamath County and Oregon—Age Specific Migration Rates (2000-2010)



Historical Trends in Components of Population Change

In summary, Klamath County’s positive population growth during the 2000s was the result of natural increase and net in-migration (Figure 12). However, the gap between the number of births and deaths are shrinking, and with it natural increase. In recent years, net in-migration has surged into the county, overshadowing the waning natural increase and creating slow population growth.

Figure 12. Klamath County—Components of Population Change (2001-2016)



Housing and Households

The total number of housing units in Klamath County increased rapidly 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 13.5 percent countywide, almost 3,900 new housing units (**Figure 13**). Roughly a quarter of this housing growth occurred in Klamath Falls, which experienced an increase of just over 1,000 new housing units, or a 5.6 percent increase. Chiloquin and Malin also experienced rapid growth over the last decade, increasing by 26 and 29 percent, respectively. Merrill was the only sub-area to experience a decrease, recording a decrease of 20 units during the same time 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 Klamath County are relatively similar.

Figure 13. Klamath 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)
<i>Klamath County</i>	28,883	32,774	1.3%	100.0%	100.0%	0.0%
Bonanza	149	165	1.0%	0.5%	0.5%	0.0%
Chiloquin	302	379	2.3%	1.0%	1.2%	0.1%
Klamath Falls	18,098	19,107	0.5%	62.7%	58.3%	-4.4%
Malin	227	293	2.6%	0.8%	0.9%	0.1%
Merrill	408	388	-0.5%	1.4%	1.2%	-0.2%
Outside UGBs	9,699	12,442	2.5%	33.6%	38.0%	4.4%

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 PPH, in Klamath County was 2.4 in 2010, a small decline from 2000 (**Figure 14**). Klamath County's PPH in 2010 was slightly lower than for Oregon as a whole, which had a PPH of 2.5. PPH varied across the county's UGBs, with all of them falling between 2.3 and 3.1 persons per household. In 2010, the highest PPH was in Malin with 3.1 and the lowest in the areas outside the UGB at 2.3. 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 Klamath County decreased slightly (**Figure 14**). A drop in occupancy rates was uniform across all sub-areas, with Chiloquin and the area outside the UGBs experiencing the largest declines in occupancy rates of 9.7 and 6.4 percent, respectively.

Figure 14. Klamath 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
<i>Klamath County</i>	2.5	2.4	-3.7%	87.3%	83.2%	-4.0%
Bonanza	2.5	2.7	8.8%	91.3%	89.7%	-1.6%
Chiloquin	2.9	2.5	-13.5%	89.1%	79.4%	-9.7%
Klamath Falls	2.8	2.4	-13.2%	92.0%	90.5%	-1.5%
Malin	2.4	3.1	27.3%	92.5%	91.8%	-0.7%
Merrill	3.1	2.7	-14.1%	90.2%	89.2%	-1.0%
Outside UGBs	2.6	2.3	-10.5%	78.1%	71.7%	-6.4%

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 Klamath County's overall population forecast and for each of its larger sub-areas⁴. 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 historical building patterns, current plans for future housing development, and household demographics. Our forecast period is 2018-2068.

Klamath County's larger sub-area is Klamath Falls, while smaller sub-areas include Bonanza, Chiloquin, Malin, and Merrill.

Assumptions for the County and Larger Sub-Areas

During the forecast period the population in Klamath County is expected to age more quickly during the first half of the forecast period and then remain relatively stable over the forecast horizon. Total fertility rates are expected to remain steady throughout the forecast period (2.13 in 2015 to 2.14 in 2043), though fertility rates for women under 30 are expected to decline. Our assumptions of fertility for the county's larger 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, Klamath 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 Klamath County. Net out-migration of young adults and net in-migration of middle-aged individuals and retirees will persist throughout the forecast period. Countywide average annual net in-migration is expected to increase from 260 net in-migrants in 2015 to 290 net in-migrants in 2043. Net in-migration is expected to curb the results of a growing natural decrease and account for the majority of Klamath County's population growth throughout the entire forecast period.

⁴ 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.

Assumptions for Smaller Sub-Areas

Rates of population growth for the smaller UGBs are determined by corresponding growth in the number of housing units as well as changes in housing occupancy rates and PPH. The change in housing unit growth is much more variable than change in housing occupancy rates or PPH.

Occupancy rates and PPH are assumed to stay relatively stable over the forecast period. Smaller household size is associated with an aging population in Klamath County and its sub-areas.

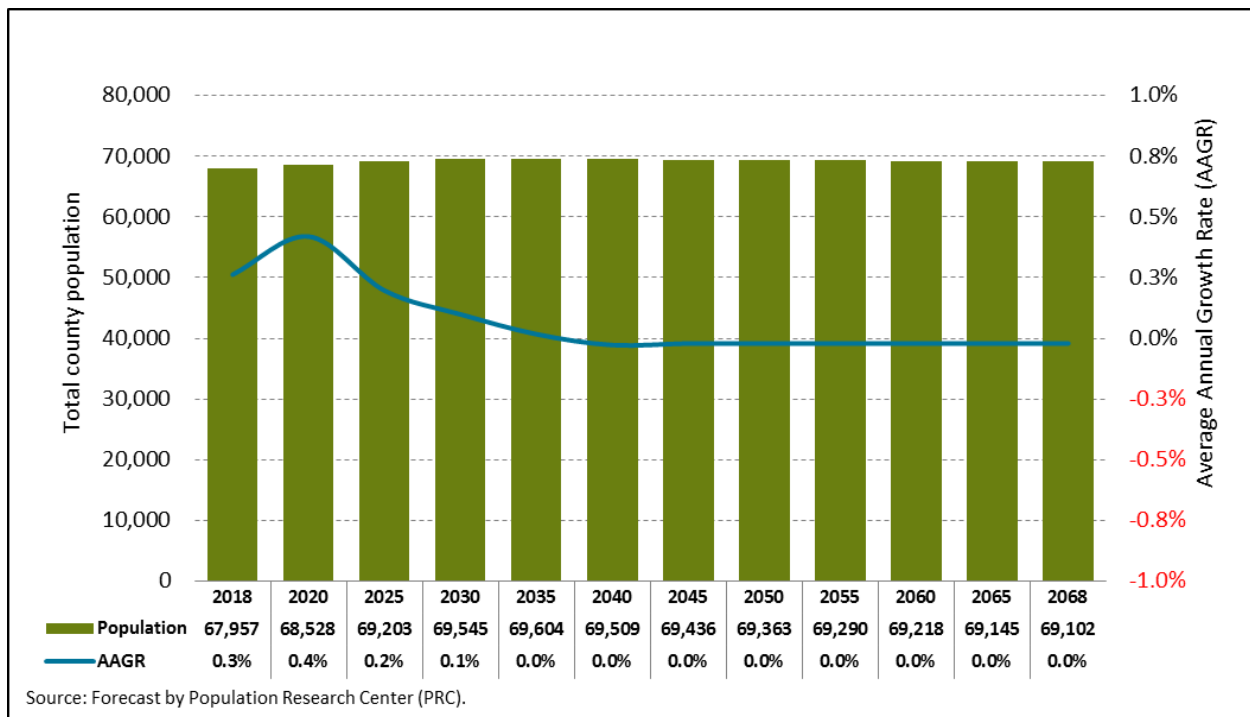
If planned housing units were reported in the surveys, we accounted for them being constructed over the next 5-15 years (or as specified by local officials). Finally, for sub-areas where population growth has been flat or declining, and there is no planned housing construction, we temper population change.

Forecast Trends

Under the most-likely population growth scenario for Klamath County, countywide and sub-area populations are expected to slightly increase over the forecast period. The countywide population growth rate is forecast to peak in 2020 then taper throughout the remainder of the forecast period. A reduction in population growth rates is driven by both (1) an aging population—contributing to steady increase in deaths—as well as (2) net in-migration tapering in the long run to account for uncertainty.

Klamath County’s total population is forecast to grow by 1,145 persons (1.7 percent) from 2018 to 2068, which translates into a total countywide population of 69,102 in 2068 (Figure 15). The population is forecast to grow at the highest rate—nearly half a percent per year—during the near-term (2018-2025). This anticipated population growth in the near-term is based on two core assumptions: (1) strong net in-migration and housing construction will continue into 2020; (2) net in-migration of retirees will continue.

Figure 15. Klamath County—Total Forecast Population by Five-year Intervals (2018-2068)



Klamath County’s largest UGB, Klamath Falls, is forecast to experience a combined population growth of more than 1,500 from 2018 to 2043 and over 400 from 2043 to 2068 (Figure 16). Klamath Falls is projected to grow as a share of total county population from 64.3 percent in 2018 to 66.1 percent in 2068.

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

	2018	2043	2068	AAGR (2018-2043)	AAGR (2043-2068)	Share of County 2018	Share of County 2043	Share of County 2068
<i>Klamath County</i>	67,957	69,465	69,102	0.1%	0.0%	--	--	--
Klamath Falls	43,684	45,231	45,650	0.1%	0.0%	64.3%	65.1%	66.1%
Outside UGBs	21,288	21,133	20,274	0.0%	-0.2%	31.3%	30.4%	29.3%

Source: Forecast by Population Research Center (PRC)

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

The smaller UGBs are expected to grow by a combined number of 116 persons from 2018 to 2043, with a combined average annual growth rate of 0.2 percent (Figure 17). Similar to the larger UGBs and Klamath County as a whole, population growth rates are forecast to decline for the second half of the forecast period (2043 to 2068). The smaller UGBs are expected to collectively add 78 people from 2043 to 2068 and capture 4.5% of the county population.

Figure 17. Klamath County and Smaller Sub-Areas—Forecast Population and AAGR

	2018	2043	2068	AAGR (2018-2043)	AAGR (2043-2068)	Share of County 2018	Share of County 2043	Share of County 2068
<i>Klamath County</i>	67,957	69,465	69,102	0.1%	0.0%	--	--	--
Bonanza	441	488	528	0.4%	0.3%	0.6%	0.7%	0.8%
Chiloquin	770	798	822	0.1%	0.1%	1.1%	1.1%	1.2%
Malin	838	863	879	0.1%	0.1%	1.2%	1.2%	1.3%
Merrill	935	951	949	0.1%	0.0%	1.4%	1.4%	1.4%
Outside UGBs	21,288	21,133	20,274	0.0%	-0.2%	31.3%	30.4%	29.3%

Source: Forecast by Population Research Center (PRC)

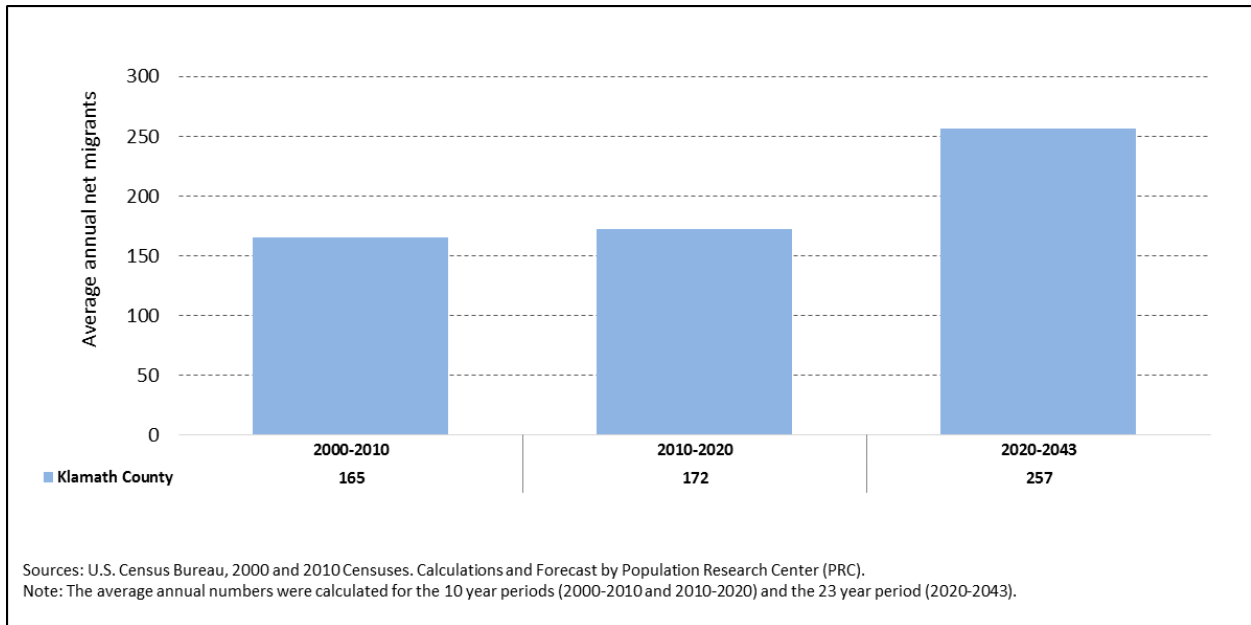
Note: For simplicity each UGB is referred to by its primary city's name.

Population outside UGBs is expected to decline by just over 150 persons from 2018 to 2043 and 860 persons from 2043 to 2068. Its share of county population is expected to decline over the forecast period, composing 31.3 percent of the countywide population in 2018 and 30.4 percent in 2068.

Forecast Trends in Components of Population Change

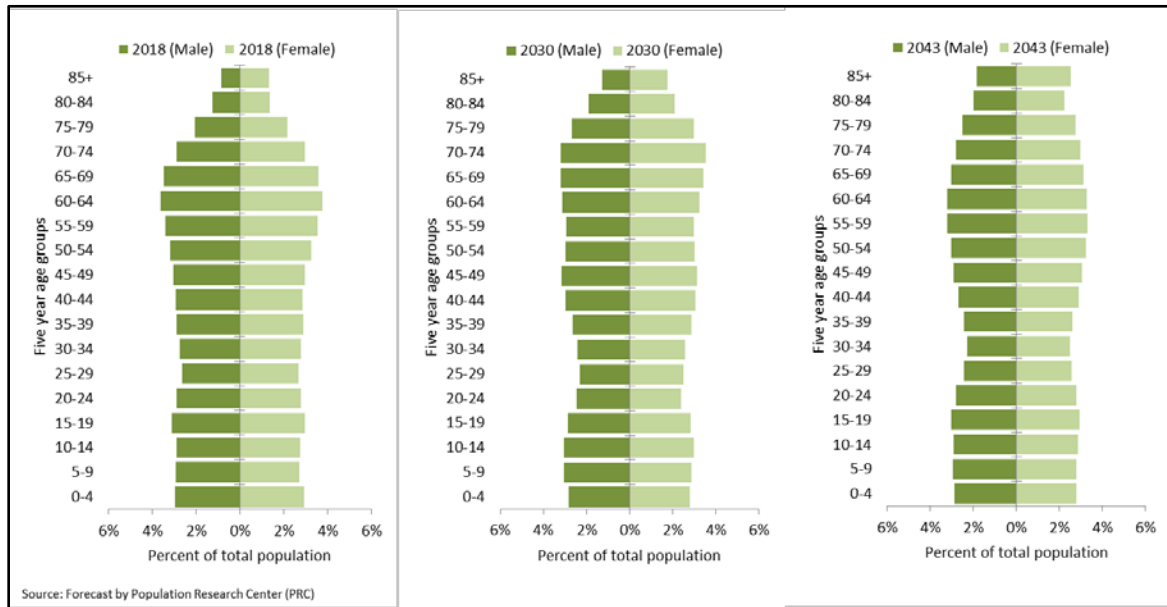
As previously discussed, the number of in-migrants is forecast to outweigh the number of out-migrants in Klamath County, creating a positive net in-migration of new residents that is expected to persist throughout the forecast period. Furthermore, the average annual net in-migration is forecast to increase from the near-term rate of 172 individuals from 2010 to 2020 to 257 individuals from 2020-2043 (Figure 18). The majority of these net in-migrants are expected to be middle-aged and older individuals.

Figure 18. Klamath County—Average Annual Net In/Out-Migration (2000-2010, 2010-2020, and 2020-2043)



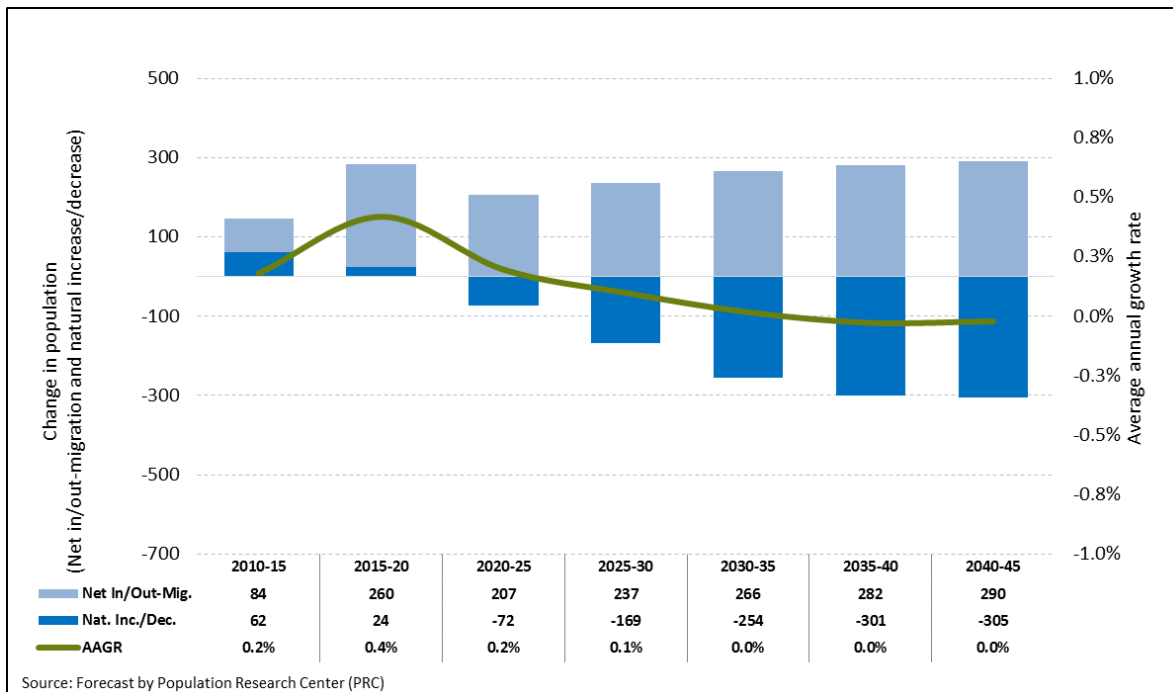
In addition to net in-migration, the other key component shaping Klamath County’s forecast is the aging population. From 2018 to 2030, the proportion of the county population 65 years of age or older is forecast to grow from roughly 22 percent to 26 percent, and then to remain at this proportion through 2043 (**Figure 19**). For a more detailed look at the age structure of Klamath County’s population, see the final forecast table published to the forecast program website (www.pdx.edu/prc/cycle-2-region-1-documents).

Figure 19. Klamath County—Age Structure of the Population (2018, 2030, and 2043)



In summary, a transition to a natural decrease from a natural increase, along with steady net in-migration, are expected to lead to population growth reaching its peak in 2020 and eventually transition to a slight population decline (**Figure 20**). Net in-migration is expected to increase slightly throughout the forecast period, though not at a high enough rate to completely offset the natural decrease.

Figure 20. Klamath County—Components of Population Change (2015-2045)



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 cities of Bonanza, Chiloquin, Klamath Falls, and Merrill did not submit survey responses.

General Survey for Oregon Population Forecast Program	
Jurisdiction: Malin	Date: 11-3-17
Observations about Population Composition (e.g. children, the elderly, racial and ethnic groups)	A mix of families and elderly. High hispanic population. Declines in average number of persons per household due to aging and people not having as many children.
Observations about Housing	Occupancy rates are stable. No recent changes. Of our 261 homes, five are not lived in at this time. Numerous homes and apartments are older and in need of repairs and upgrades.
Planned Housing Dev./Est. Year Completion (for detailed information submissions please use the Housing Development Survey)	No planned housing at this time.
Planned future construction of Group Quarters facilities	No group facilities planned.
Future Employers Locating to the Area	One new business might add 8 jobs
Capacity and condition of infrastructure to accommodate growth.	Water and Sewer systems could accommodate double the current amount. Water system upgraded in 1999, sewer upgraded in the last few years.
Any Promotions (promos) and Hindrances (hinders) to Population Growth; Other notes	Promos: good infrastructure and room for growth Hinders: land available for housing growth but land owners not willing to sell or develop property.
Do you have a buildable lands inventory for your area/UGB? If yes, it would be helpful if you could please share it with our center in GIS format.	Yes
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)	Around 45 acres of land was annex in 2005 for the creation of subdivisions. With the recession in 2008 these property owners were not able to develop the land. With current conditions changing for the good some development might happen.

Appendix B: Specific Assumptions

Bonanza

We assume the 5-year average annual housing unit growth rate to remain stable throughout the forecast period. We assume the occupancy rate and persons per household (PPH) to be steady at 89.7% percent and 2.71 for the 25-year horizon, respectively. There is no group quarters population in this sub-area.

Chiloquin

We assume the 5-year average annual housing unit growth rate to taper throughout the forecast period. We assume the occupancy rate and persons per household (PPH) to be steady at 79.4% percent and 2.54 for the 25-year horizon, respectively. There is no group quarters population in this sub-area.

Klamath Falls

We assume total fertility rates will follow a historical trend (observed from the 2000 to 2010 period) and gradually decline over the forecast period. We assume forecasted trends in survival rates to be the same as those for the county as a whole; these rates are expected to increase slightly for the 65+ population over the 25 year horizon. Age specific net migration deviate from county patterns; we assume the sub-area will experience net in-migration of the population 70+.

Malin

We assume the 5-year average annual housing unit growth rate to remain stable throughout the forecast period. We assume the occupancy rate to be steady at 91.8% and persons per household (PPH) to decline to 3.07 for the 25-year horizon. There is no group quarters population in this sub-area.

Merrill

We assume the 5-year average annual housing unit growth rate to remain stable throughout the forecast period. We assume the occupancy rate and persons per household (PPH) to be steady at 89.2% percent and 2.7 for the 25-year horizon, respectively. There is no group quarters population in this sub-area.

Outside UGBs

We assume total fertility rates will remain stable throughout the forecast period. We assume forecasted trends in survival rates to be the same as those for the county as a whole; these rates are expected to increase slightly for the 65+ population over the 25 year horizon. Age specific net migration rates are generally in line with county patterns.

Appendix C: Detailed Population Forecast Results

Figure 21. Klamath County—Population by Five-Year Age Group

Population Forecasts by Age							
Group / Year	2018	2020	2025	2030	2035	2040	2043
00-04	4,002	4,072	4,023	3,895	3,825	3,862	3,924
05-09	3,829	3,949	4,170	4,128	4,012	3,951	3,977
10-14	3,831	3,694	3,957	4,185	4,159	4,053	4,019
15-19	4,138	4,080	3,694	3,964	4,210	4,194	4,133
20-24	3,871	3,805	3,679	3,373	3,637	3,873	3,868
25-29	3,609	3,568	3,419	3,351	3,083	3,337	3,467
30-34	3,758	3,754	3,617	3,472	3,418	3,150	3,307
35-39	3,922	4,023	3,981	3,842	3,702	3,653	3,481
40-44	3,936	3,997	4,225	4,189	4,058	3,919	3,890
45-49	4,089	3,996	4,119	4,361	4,339	4,213	4,130
50-54	4,360	4,312	4,037	4,167	4,428	4,417	4,344
55-59	4,717	4,535	4,376	4,104	4,253	4,529	4,527
60-64	5,001	5,003	4,584	4,432	4,173	4,334	4,505
65-69	4,804	4,944	5,008	4,601	4,426	4,176	4,276
70-74	3,979	4,287	4,579	4,659	4,301	4,147	4,008
75-79	2,849	3,055	3,659	3,928	4,018	3,719	3,641
80-84	1,778	1,916	2,294	2,767	2,989	3,066	2,930
85+	1,485	1,536	1,784	2,127	2,572	2,914	3,038
Total	67,957	68,528	69,203	69,545	69,604	69,509	69,465

Figure 22. Klamath County's Sub-Areas—Total Population

Area / Year	2018	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2068
Klamath County	67,957	68,528	69,203	69,545	69,604	69,509	69,436	69,363	69,290	69,218	69,145	69,102
Bonanza UGB	441	445	452	464	474	483	492	501	512	519	524	528
Chiloquin UGB	770	766	763	768	780	791	802	807	813	817	820	822
Klamath Falls UGB	43,684	44,040	44,531	44,888	45,102	45,194	45,255	45,354	45,490	45,564	45,606	45,650
Malin UGB	838	834	842	849	855	860	865	869	873	876	878	879
Merrill UGB	935	937	941	945	948	950	952	951	951	950	949	949
Outside UGB Area	21,288	21,506	21,674	21,631	21,446	21,230	21,069	20,881	20,651	20,492	20,368	20,274