

Portland State University

PDXScholar

Oregon Population Forecast Program

Population Research Center

6-2016

Coordinated Population Forecast for Malheur County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2016-2066

Portland State University. Population Research Center

Xiaomin Ruan
Portland State University

Risa Proehl
Portland State University

Jason R. Jurjevich
Portland State University, jjason@email.arizona.edu

Kevin Rancik
Portland State University

Follow this and additional works at: <https://pdxscholar.library.pdx.edu/opfp>



Part of the Urban Studies and Planning Commons

Let us know how access to this document benefits you.

Recommended Citation

Portland State University. Population Research Center; Ruan, Xiaomin; Proehl, Risa; Jurjevich, Jason R.; Rancik, Kevin; Kessi, Janai; Tetrick, David; and Michel, Julia, "Coordinated Population Forecast for Malheur County, its Urban Growth Boundaries (UGB), and Area Outside UGBs 2016-2066" (2016). *Oregon Population Forecast Program*. 18.
<https://pdxscholar.library.pdx.edu/opfp/18>

This Report is brought to you for free and open access. It has been accepted for inclusion in Oregon Population Forecast Program by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.

Authors

Portland State University. Population Research Center, Xiaomin Ruan, Risa Proehl, Jason R. Jurjevich, Kevin Rancik, Janai Kessi, David Tetrick, and Julia Michel

Coordinated Population Forecast



2016

Through

2066

Malheur County

Urban Growth
Boundaries (UGB)
& Area Outside UGBs

Photo Credit: The "Pillars of Rome" rock formations near the community of Rome. (Photo No. malD0098) Gary Halvorson, Oregon State Archives

<http://arcweb.sos.state.or.us/pages/records/local/county/scenic/malheur/1.html>

**Coordinated Population Forecast for Malheur County,
its Urban Growth Boundaries (UGB), and
Area outside UGBs
2016-2066**

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

June 30, 2016

This project is funded by the State of Oregon through the Department of Land Conservation and Development (DLCD). The contents of this document do not necessarily reflect the views or policies of the State of Oregon.

Project Staff:

Xiaomin Ruan, Population Forecast Program Coordinator

Risa S. Proehl, Population Estimates Program Manager

Jason R. Jurjevich, PhD. Assistant Director, Population Research Center

Kevin Rancik, GIS Analyst

Janai Kessi, Research Analyst

David Tetrick, Graduate Research Assistant

Julia Michel, Graduate Research Assistant

The Population Research Center and project staff wish to acknowledge and express gratitude for support from DLCD's Forecast Advisory Committee, the hard work of our staff Deborah Loftus and Emily Renfrow, data reviewers, and many people who contributed to the development of these forecasts by answering questions, lending insight, providing data, or giving feedback.

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 methods employed to prepare the forecasts. This document also describes the data sets and 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 (i.e., 2016-2066).

Table of Contents

Executive Summary.....	6
Historical Trends	8
Population.....	8
Age Structure of the Population	9
Race and Ethnicity.....	10
Births	11
Deaths	13
Migration	13
Historical Trends in Components of Population Change	14
Housing and Households	15
Assumptions for Future Population Change	17
Assumptions for the County and Larger Sub-Areas.....	17
Assumptions for Smaller Sub-Areas.....	18
Forecast Trends.....	19
Forecast Trends in Components of Population Change	20
Glossary of Key Terms.....	22
Appendix A: Surveys and Supporting Information	23
Appendix B: Specific Assumptions	33
Appendix C: Detailed Population Forecast Results.....	35

Table of Figures

Figure 1. Malheur County and Sub-Areas—Historical and Forecast Populations, and Average Annual Growth Rates (AAGR).....	7
Figure 2. Malheur County—Total Population by Five-year Intervals (1975-2015).....	8
Figure 3. Malheur County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)	9
Figure 4. Malheur County—Age Structure of the Population (2000 and 2010)	10
Figure 5. Malheur County—Hispanic or Latino and Race (2000 and 2010).....	11
Figure 6. Malheur County and Oregon—Total Fertility Rates (2000 and 2010).....	11
Figure 7. Malheur County—Age Specific Fertility Rate (2000 and 2010)	12
Figure 8. Oregon—Age Specific Fertility Rate (2000 and 2010)	12
Figure 9. Malheur County and Sub-Areas—Total Births (2000 and 2010)	13
Figure 10. Malheur County and Sub-Areas—Total Deaths (2000 and 2010).....	13
Figure 11. Malheur County and Oregon—Age Specific Migration Rates (2000-2010).....	14
Figure 12. Malheur County—Components of Population Change (2000-2015).....	15
Figure 13. Malheur County and Sub-Areas—Total Housing Units (2000 and 2010)	15
Figure 14. Malheur County and Sub-Areas—Persons per Household (PPH) and Occupancy Rate	16
Figure 15. Malheur County—Total Forecast Population (2016-2066).....	19
Figure 16. Malheur County and Smaller Sub-Areas-Forecast Population and AAGR	20
Figure 17. Malheur County—Age Structure of the Population (2016, 2035, and 2066)	20
Figure 18. Malheur County—Components of Population Change, 2015-2065	21
Figure 19. Malheur County - Population by Five-Year Age Group.....	35
Figure 20. Malheur County's Sub-Areas - Total Population.....	35

Executive Summary

Historical

During the 2000s, Malheur County, as a whole, experienced population decline (Figure 1); however three of its sub-areas recorded a slight population increase. Adrian grew at an average annual rate of nearly two percent, while Ontario and the area outside UGBs saw more modest growth rates. Even so the population loss recorded by Vale, Nyssa, and Jordan Valley totaled nearly 600, leading the countywide population to decrease.

Malheur County's population decline in the 2000s was the combined result of a diminishing natural increase and periods of substantial net out-migration (Figure 12). The larger number of births relative to deaths has led to a natural increase (more births than deaths) in every year from 2000 to 2015. Net out-migration slowed toward the end of the last decade (2000-2010) combining with a relatively steady natural increase for moderate population increase in four out of the five years since 2010.

Forecast

Malheur County's total population is forecast to grow by a little more than 400 persons (1.3 percent) from 2016 to 2066, which translates into a total countywide population of nearly 32,000 in 2066 (Figure 1). Population growth is forecast to be modest, becoming increasingly so as time progresses through the forecast period. Forecasting modest population growth is driven by both an aging population—contributing to a steady increase in deaths over the entire forecast period—as well as diminishing net out-migration.

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

	Historical			Forecast				
	2000	2010	AAGR (2000-2010)	2016	2035	2066	AAGR (2016-2035)	AAGR (2035-2066)
<i>Malheur County</i>	31,615	31,313	-0.1%	31,569	31,964	31,994	0.1%	0.0%
Adrian UGB	147	177	1.9%	182	192	192	0.3%	0.0%
Jordan Valley UGB	239	181	-2.8%	175	178	173	0.1%	-0.1%
Nyssa UGB	3,550	3,455	-0.3%	3,474	3,449	3,303	0.0%	-0.1%
Ontario UGB	12,280	12,296	0.0%	12,552	12,763	12,896	0.1%	0.0%
Vale UGB	2,554	2,141	-1.8%	2,136	2,063	1,930	-0.2%	-0.2%
Outside UGBs	12,845	13,063	0.2%	13,049	13,320	13,500	0.1%	0.0%

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

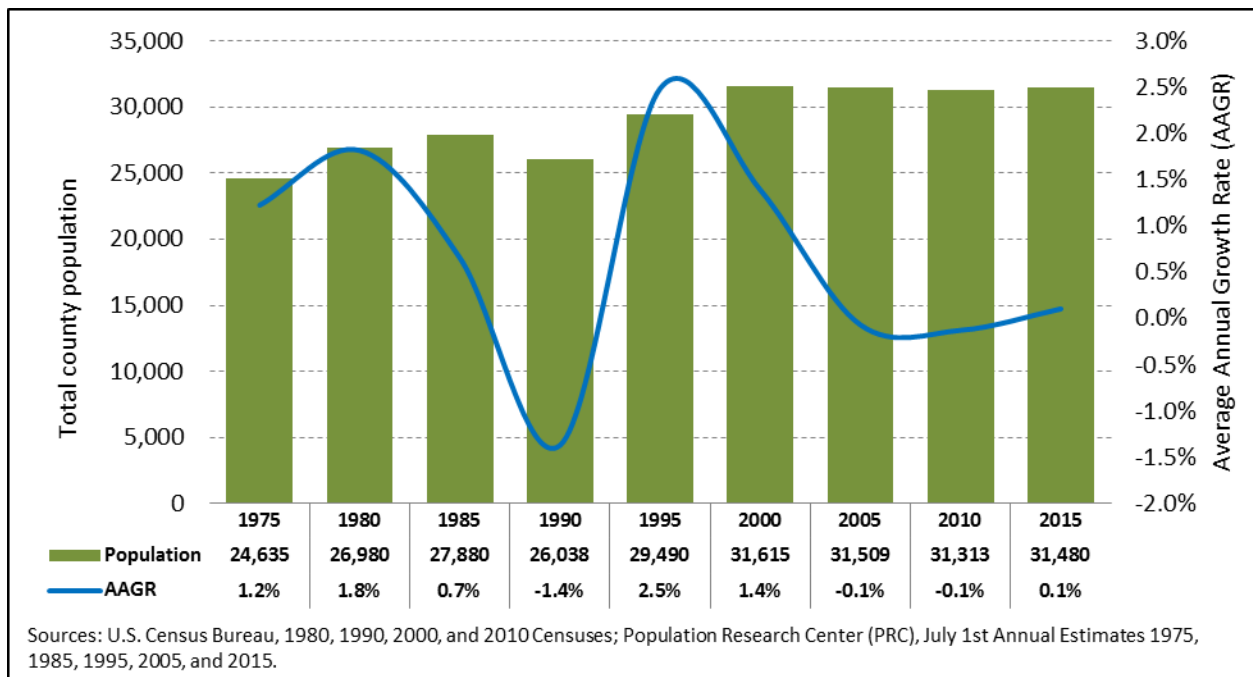
Historical Trends

Different growth patterns occur in different parts of the County. Each of Malheur County’s sub-areas was examined for any significant demographic characteristics or changes in population or housing growth that might influence their individual forecasts. Factors that were analyzed include age composition of the population, ethnicity and race, births, deaths, migration, and number or growth rate of [housing units](#) as well as the [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, in general, local trends within sub-areas collectively influence population growth rates for the county.

Population

Malheur County’s total population grew by about 28 percent between 1975 and 2015—from roughly 24,600 in 1975 to about 31,500 in 2015 (Figure 2). During this 40-year period, the county saw high growth rates during the early 1990s, which coincided with a period of relative economic prosperity. During the early 1980s, challenging economic conditions, both nationally and within the county, led to population decline. Malheur County experienced population decline over the last decade (2000 to 2010)—averaging a loss of about 30 persons per year. In recent years, growth rates have mildly increased, leading to a modest population increase between 2010 and 2015.

Figure 2. Malheur County—Total Population by Five-year Intervals (1975-2015)



Malheur County’s population change is the combined population growth or decline within each sub-area. During the 2000s, Malheur County, as a whole, experienced population decline (Figure 3); however three of its sub-areas recorded a slight population increase. Adrian grew at an average annual rate of nearly two percent, while Ontario and the area outside UGBs saw more modest growth rates. Even so,

the population loss recorded by Vale, Nyssa, and Jordan Valley totaled nearly 600, leading the countywide population to decrease.

Figure 3. Malheur County and Sub-areas—Total Population and Average Annual Growth Rate (AAGR) (2000 and 2010)

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
<i>Malheur County</i>	31,615	31,313	-0.1%	100.0%	100.0%
Adrian	147	177	1.9%	0.5%	0.6%
Jordan Valley	239	181	-2.8%	0.8%	0.6%
Nyssa	3,550	3,455	-0.3%	11.2%	11.0%
Ontario	12,280	12,296	0.0%	38.8%	39.3%
Vale	2,554	2,141	-1.8%	8.1%	6.8%
Outside UGBs	12,845	13,063	0.2%	40.6%	41.7%

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

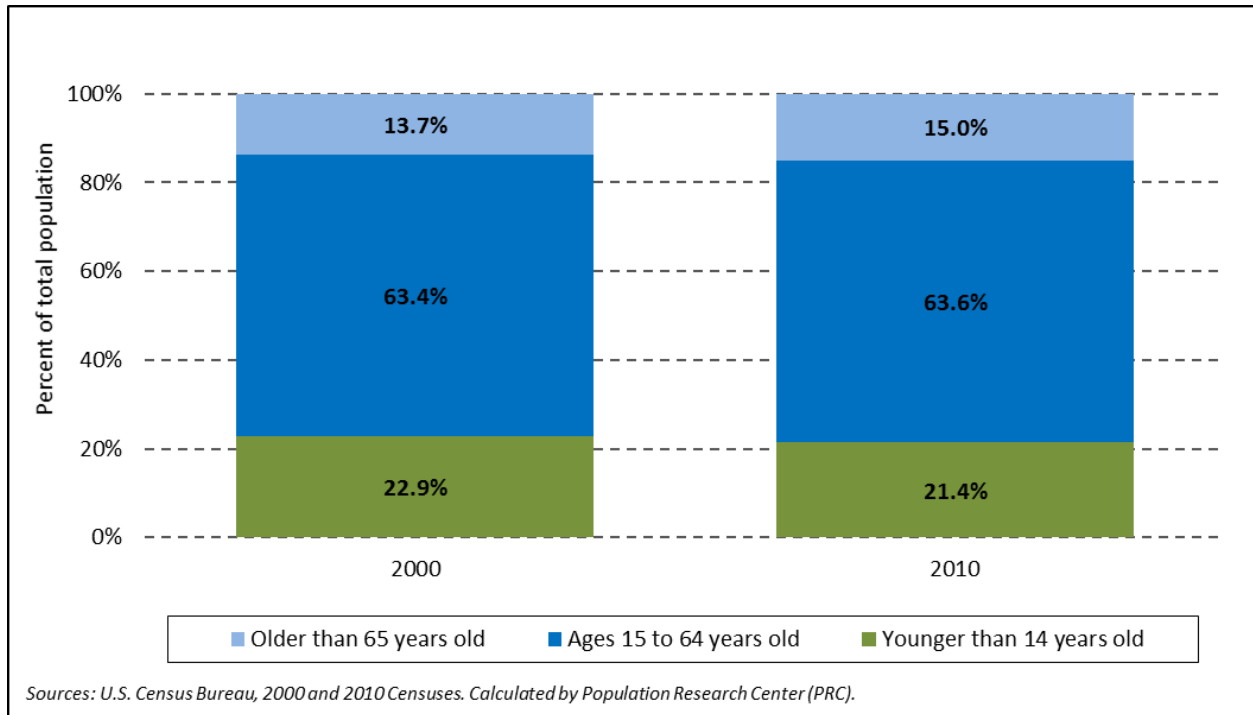
Note 1: For simplicity each UGB is referred to by its primary city's name.

Age Structure of the Population

Malheur County's population is aging, but at a much slower pace compared to most areas across Oregon. 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 decline in births. For Malheur County this has also been true. The number of births has actually decreased, accompanied with the slight rise in the proportion of county population 65 or older between 2000 and 2010 (Figure 4). Further underscoring Malheur County's modest trend in aging, the median age rose from about 34 in 2000 to 36 in 2010, an increase that is half of what is observed statewide.¹

¹ Median age is sourced from the U.S. Census Bureau's 2000 and 2010 Censuses, DP-1.

Figure 4. Malheur 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 size². The Hispanic population within Malheur County increased substantially from 2000 to 2010 (Figure 5), while the White, non-Hispanic population decreased over the same time period. The increase in the Hispanic population brings with it several implications for future population change. First, both nationally and at the state level, fertility rates among Hispanic and minority women have tended to be higher than among White, non-Hispanic women. Second, Hispanic and minority households tend to be larger relative to White, non-Hispanic households.

² Historical data shows that some racial/ethnic groups, such as Hispanics, generally have higher fertility rates than other groups (<http://www.pewsocialtrends.org/2012/05/17/explaining-why-minority-births-now-outnumber-white-births/>); also average household sizes can vary among racial/ethnic groups (https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&sqi=2&ved=0ahUKEwjp09-PltXMAhUC_WMKHQFZCBEQFggcMAA&url=http%3A%2F%2Fwww.census.gov%2Fpopulation%2Fsocdemo%2Fhh-fam%2Fcps2011%2FtabAVG1.xls&usg=AFQjCNfFO2dYB_OKGxp-ag3hBMVDx4_j9w&cad=rja).

Figure 5. Malheur County—Hispanic or Latino and Race (2000 and 2010)

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
<i>Total population</i>	31,615	100.0%	31,313	100.0%	-302	-1.0%
Hispanic or Latino	8,099	25.6%	9,867	31.5%	1,768	21.8%
Not Hispanic or Latino	23,516	74.4%	21,446	68.5%	-2,070	-8.8%
White alone	21,752	68.8%	19,906	63.6%	-1,846	-8.5%
Black or African American alone	369	1.2%	331	1.1%	-38	-10.3%
American Indian and Alaska Native alone	273	0.9%	235	0.8%	-38	-13.9%
Asian alone	608	1.9%	511	1.6%	-97	-16.0%
Native Hawaiian and Other Pacific Islander alone	18	0.1%	12	0.0%	-6	-33.3%
Some Other Race alone	37	0.1%	21	0.1%	-16	-43.2%
Two or More Races	459	1.5%	430	1.4%	-29	-6.3%

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

Births

Historical fertility trends for Malheur County mirror trends similar to Oregon as a whole. Total fertility rates decreased in Malheur County from 2000 to 2010, as they decreased for the state over the same time period (Figure 6). At the same time, fertility for older women marginally increased in both Malheur County and Oregon (Figure 7 and Figure 8). As Figure 7 demonstrates, fertility rates for younger women in Malheur County are lower in 2010 compared to the earlier decade, and women are choosing to have children at older ages. While age-specific fertility generally follows statewide patterns, county fertility changes are distinct from those of the state in two ways. First, peak fertility remained within the 20 to 24 age group for Malheur County, while for Oregon as a whole it has shifted toward late twenties and early thirties. Second, total fertility in the county remains well above [replacement fertility](#), while for Oregon as a whole, total fertility continues to fall further below replacement fertility.

Figure 6. Malheur County and Oregon—Total Fertility Rates (2000 and 2010)

	2000	2010
Malheur County	2.95	2.80
Oregon	1.98	1.80

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

Oregon Health Authority, Center for Health Statistics.

Calculated by Population Research Center (PRC).

Figure 7. Malheur County—Age Specific Fertility Rate (2000 and 2010)

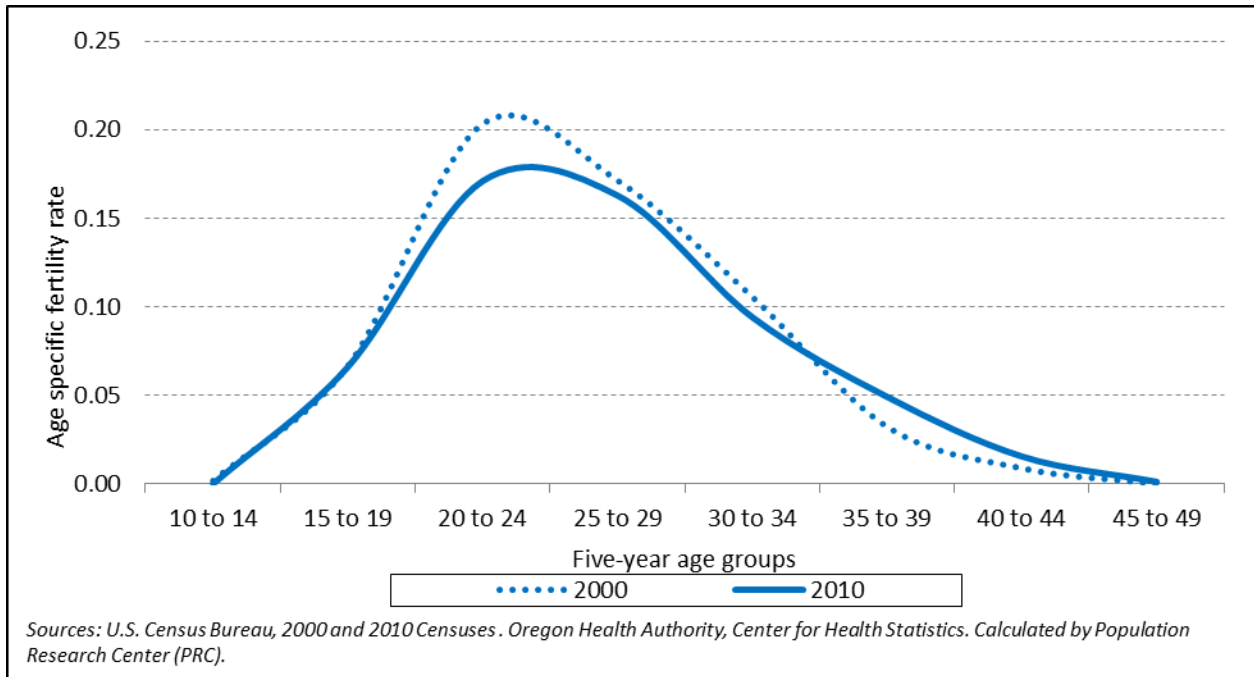


Figure 8. Oregon—Age Specific Fertility Rate (2000 and 2010)

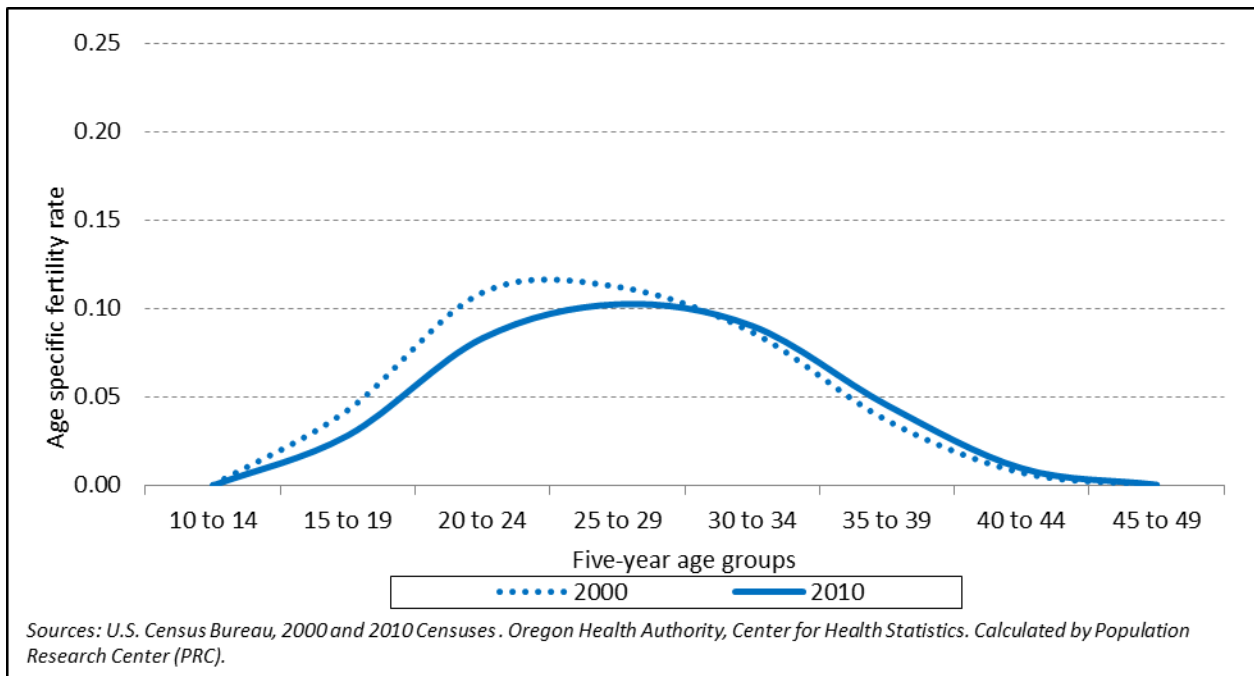


Figure 9 shows the number of births by the area in which the mother resides. Generally the number of births fluctuates from year to year. For example, a sub-area with an increase in births between two

years could easily show a decrease for a different time period; however, for the 10-year period from 2000 to 2010 the county as a whole saw a decrease in births (Figure 9).

Figure 9. Malheur County and Sub-Areas—Total Births (2000 and 2010)

	2000	2010	Absolute Change	Relative Change	Share of County 2000	Share of County 2010
<i>Malheur County</i>	519	477	-42	-8.1%	100.0%	100.0%
Ontario	257	253	-4	-1.6%	49.5%	53.0%
All other areas	262	224	-38	-14.5%	50.5%	47.0%

Sources: Oregon Health Authority, Center for Health Statistics. Aggregated by Population Research Center (PRC).

Note 1: For simplicity each UGB is referred to by its primary city's name.

Note 2: All other areas includes all smaller UGBs (those with populations less than 7,000) and the area outside UGBs. Detailed, point level death data were unavailable for 2000, thus PRC was unable to assign deaths to some UGBs.

Deaths

The population in the county, as a whole, is aging and people are living longer. For Malheur County in 2000, life expectancy for males was about 77 years and for females was 80 years. By 2010, life expectancy had increased to roughly 78 for males, and remained relatively unchanged for females. However, for both Malheur County and Oregon, the survival rates changed little between 2000 and 2010—underscoring the fact that mortality is the most stable component of population change. Even so, the total number of countywide deaths increased (Figure 10).

Figure 10. Malheur County and Sub-Areas—Total Deaths (2000 and 2010)

	2000	2010	Absolute Change	Relative Change	Share of County 2000	Share of County 2010
<i>Malheur County</i>	244	271	27	11.1%	100.0%	100.0%
Ontario	129	124	-5	-3.9%	52.9%	45.8%
All other areas	115	147	32	27.8%	47.1%	54.2%

Sources: Oregon Health Authority, Center for Health Statistics. Aggregated by Population Research Center (PRC).

Note 1: For simplicity each UGB is referred to by its primary city's name.

Note 2: All other areas includes all smaller UGBs (those with populations less than 7,000) and the area outside UGBs. Detailed, point level death data were unavailable for 2000, thus PRC was unable to assign deaths to some UGBs.

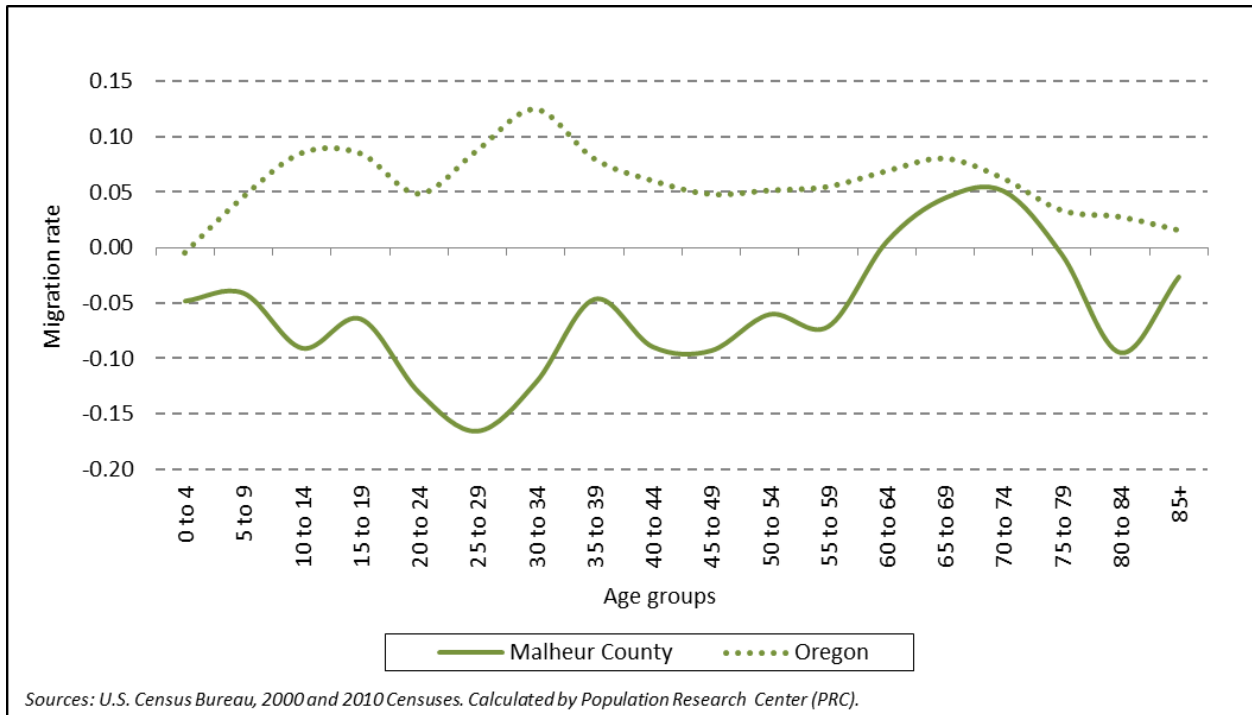
Migration

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

Unlike Oregon, net out-migration occurred for most age groups in Malheur County. From 2000 to 2010, younger (ages with the highest mobility levels) and working age individuals moved out of the county, likely in search of employment and education opportunities, as well as military service. At the same time, the county attracted a small number of retirees who likely moved into the county due to family

ties, proximity to medical services, or other socio-economic reasons. Malheur County’s age-specific migration patterns are quite unique among the eastern Oregon counties, which may be due in part to its proximity to the comparatively more urbanized areas in western Idaho.

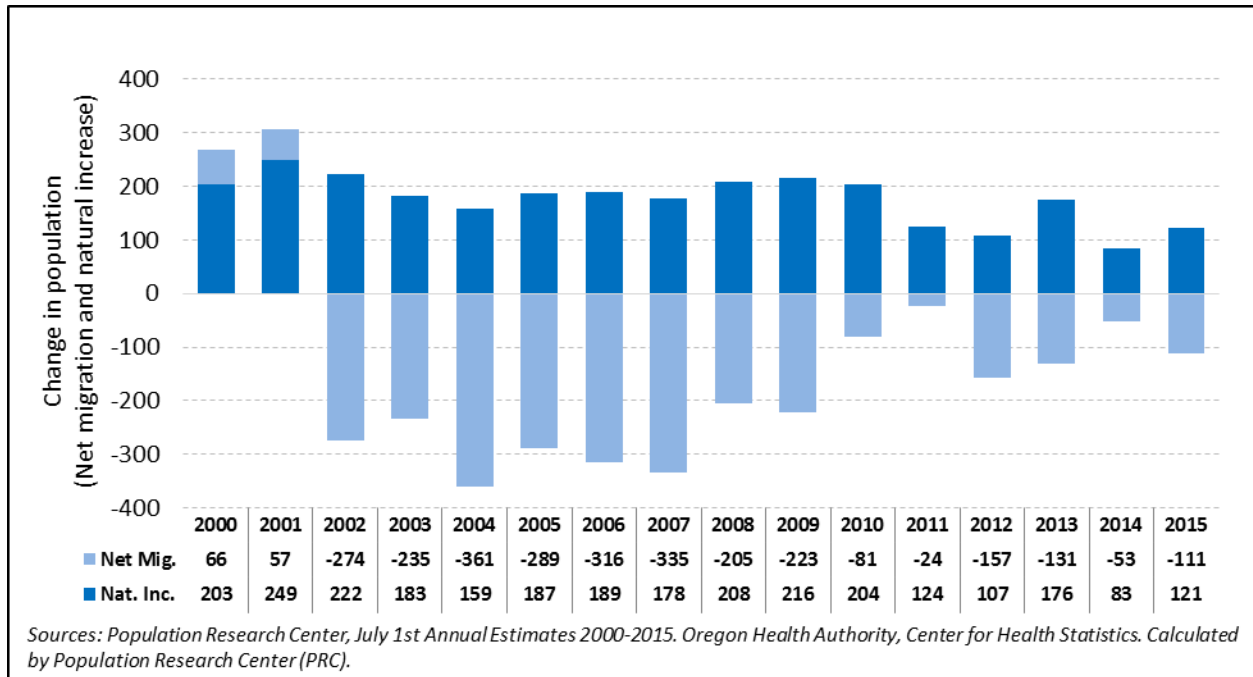
Figure 11. Malheur County and Oregon—Age Specific Migration Rates (2000-2010)



Historical Trends in Components of Population Change

In summary, Malheur County’s population decline in the 2000s was the combined result of a diminishing natural increase and periods of substantial net out-migration (Figure 12). The larger number of births relative to deaths has led to a natural increase (more births than deaths) in every year from 2000 to 2015. Net out-migration slowed toward the end of the last decade (2000-2010) combining with a relatively steady natural increase for moderate population increase in four out of the five years since 2010.

Figure 12. Malheur County—Components of Population Change (2000-2015)



Housing and Households

The total number of housing units in Malheur County increased rapidly during the middle years of this last decade (2000 to 2010), but this growth slowed with the onset of the national recession in 2007. Over the entire 2000 to 2010 period, the total number of housing units increased by about four percent countywide, which resulted in more than 400 new housing units (Figure 13). The area outside UGBs captured the largest share of the growth in total housing units, with Adrian, Jordan Valley, and Ontario also seeing some increase in the numbers of housing units. In terms of relative housing growth, Adrian grew the most during the 2000s, its total housing units increased more than 18 percent (12 housing units) by 2010.

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

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
<i>Malheur County</i>	11,233	11,692	0.4%	100.0%	100.0%
Adrian	66	78	1.7%	0.6%	0.7%
Jordan Valley	140	149	0.6%	1.2%	1.3%
Nyssa	1,229	1,223	0.0%	10.9%	10.5%
Ontario	4,913	4,970	0.1%	43.7%	42.5%
Vale	937	863	-0.8%	8.3%	7.4%
Outside UGBs	3,948	4,409	1.1%	35.1%	37.7%

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

Note 1: For simplicity each UGB is referred to by its primary city's name.

Occupancy rates tend to fluctuate more than PPH. This is especially true in smaller UGB areas where fewer housing units allow for larger changes—in relative terms. From 2000 to 2010 the occupancy rate in Malheur County declined slightly; this was most likely due to slack in demand for housing as individuals experienced the effects of the Great Recession. Many sub-areas experienced similar declines in occupancy rates, with one small UGB, Jordan Valley, experiencing more extreme declines in the occupancy rate. A few UGBs recorded increases in occupancy rates of less than one percentage point. These were Adrian and Ontario.

Average household size, or PPH, in Malheur County was 2.7 in 2010, which is slightly lower than in 2000 (Figure 14). Malheur County’s PPH in 2010 was slightly higher than for Oregon as a whole, which had a PPH of 2.5. PPH varied across the five UGBs, with the highest at 3.1 in Nyssa and the lowest at 1.9 in Jordan Valley.

Figure 14. Malheur 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>Malheur County</i>	2.8	2.7	-0.1	91.0%	89.0%	-1.9%
Adrian	2.5	2.5	0.0	89.4%	89.7%	0.3%
Jordan Valley	2.2	1.9	-0.2	77.9%	63.1%	-14.8%
Nyssa	3.1	3.1	0.0	92.9%	91.3%	-1.6%
Ontario	2.6	2.6	0.0	92.0%	92.2%	0.2%
Vale	2.8	2.6	-0.2	92.3%	89.0%	-3.3%
Outside UGBs	2.8	2.7	-0.1	89.4%	85.8%	-3.6%

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

Note 1: 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 the most likely scenario for population change. Past trends also explain the dynamics of population growth specific to local areas. Relating recent and historical population trends to events that influence population change serves as a gauge for what might realistically occur in a given area over the forecast horizon.

Assumptions about fertility, mortality, and migration were developed for Malheur County's population forecast as well as the forecasts for larger sub-areas.³ The assumptions are derived from observations based on life events, as well as trends unique to Malheur County and its larger sub-areas. Population change for its sub-areas are determined by the change in the number or growth rate of total housing units and PPH. Assumptions around housing unit growth as well as occupancy rates are derived from observations of historical building patterns and any current plans for future housing development. In addition assumptions for PPH are based on observed historical patterns of household demographics—for example the average age of householder. The forecast period is 2016-2066.

Assumptions for the County and Larger Sub-Areas

During the forecast period, the population in Malheur County is expected to age gradually during the first half of the forecast period and then remain relatively stable over the rest of the period. Fertility rates are expected to slightly decline, with total fertility in Malheur County decreasing from 2.2 children per woman in 2015 to 2.1 children per woman by 2065. Similar patterns of declining total fertility are expected within the county's larger sub-areas.

Changes in mortality and life expectancy are more stable compared to fertility and migration. One influential factor affecting mortality and life expectancy is the advancement in medical technology and health care. The county and larger sub-areas are projected to follow the statewide trend of increasing life expectancy throughout the forecast period—progressing from a life expectancy of 79 years in 2010 to 86 in 2060. However, in spite of increasing life expectancy and the corresponding increase in survival rates, Malheur County's aging population and large population cohort reaching a later stage of life will increase the overall number of deaths throughout the forecast period. Larger sub-areas within the county will experience a similar increase in deaths as their population ages.

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. Net migration rates will change in line with historical trends unique to Malheur County. Net out-migration of younger persons and middle-age individuals will persist

³ 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.

throughout the forecast period. Countywide average annual net out-migration is expected to diminish over the forecast period, falling from about 100 out-migrants in 2015 to nearly no out-migrants by 2065 (Figure 18).

Assumptions for Smaller Sub-Areas

Rates of population growth for the smaller sub-areas are assumed to be 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 decrease slightly at beginning and then stay relatively stable over the forecast period. Smaller household size is associated with an aging population in Malheur County and its sub-areas.

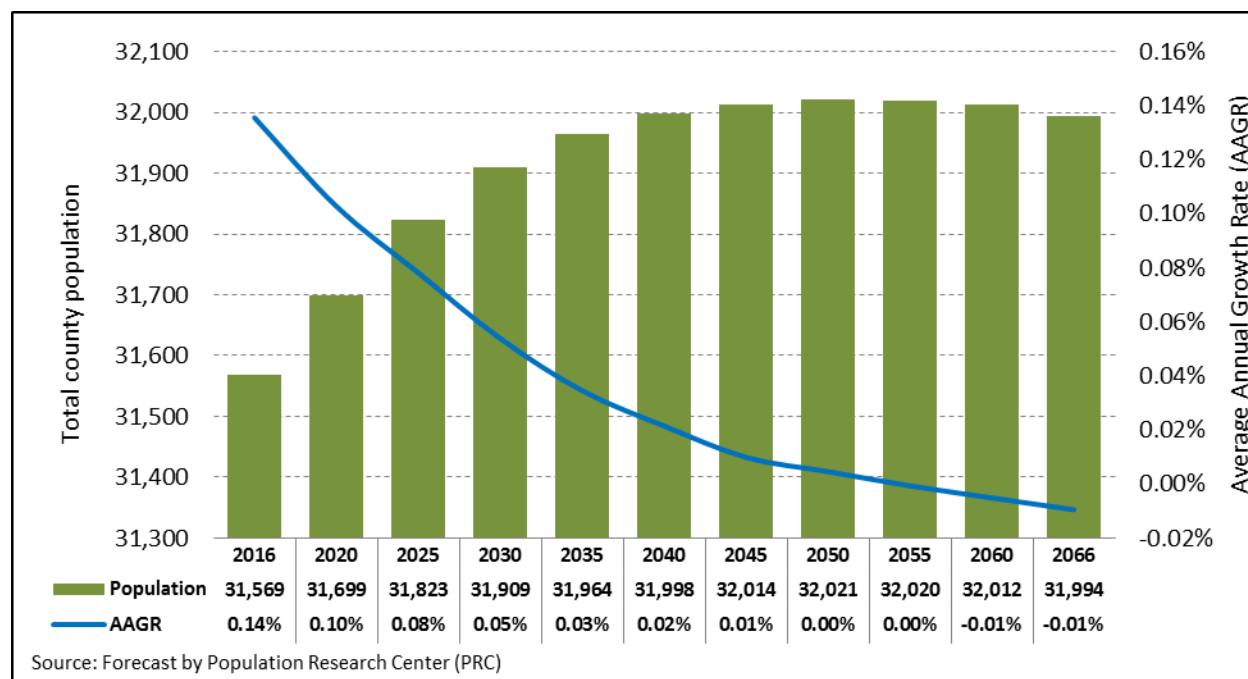
In addition, for sub-areas experiencing population growth, we assume a higher growth rate in the near-term, with growth stabilizing over the remainder of the forecast period. If planned housing units were reported in the surveys, then they are assumed to be constructed over the next 5-15 years. Finally, for county sub-areas where population growth has been flat or has declined, and there is no planned housing construction, population growth is held mostly stable with little to no change.

Forecast Trends

Under the most-likely population growth scenario in Malheur County, countywide population is expected to increase over the forecast period. Population growth is forecast to be modest, becoming increasingly so as time progresses through the forecast period. Forecasting modest population growth is driven by both an aging population—contributing to a steady increase in deaths over the entire forecast period—as well as diminishing net out-migration.

Malheur County’s total population is forecast to grow by a little more than 400 persons (1.3 percent) from 2016 to 2066, which translates into a total countywide population of about 32,000 in 2066 (Figure 15). Population increase is expected to be more rapid in the near-term and is based on two core assumptions. First, the number of births will remain greater than deaths, leading a natural increase to continue offsetting net out-migration of young and middle-age individuals. Second, retiree age persons will continue to migrate into the county. The only component of growth in this initial period is natural increase.

Figure 15. Malheur County—Total Forecast Population (2016-2066)



Malheur County’s two largest areas, Ontario and the area outside UGBs, are forecast to experience combined population growth of more than 400 from 2016 to 2035 and more than 300 from 2035 to 2066 (Figure 16). The Ontario UGB is expected to increase by more than 200 persons from 2016 to 2035, growing from a total population of 12,500 in 2016 to 12,700 in 2035. The area outside UGBs is forecast to grow from 13,000 persons in 2016 to a population of 13,300 in 2035. Growth is expected to be slower for Ontario and area outside UGBs during the second part of the forecast period, with total population increasing to more than 12,900 and 13,500 respectively by 2066. Both Ontario and the outside UGB Area are expected to grow as a share of total county population.

Adrian and Jordan Valley are forecast to see little to no change in population over the forecast period, while Nyssa is expected to lose more than 170 persons between 2016 and 2066.

Figure 16. Malheur County and Smaller Sub-Areas-Forecast Population and AAGR

	2016	2035	2066	AAGR (2016-2035)	AAGR (2035-2066)	Share of County 2016	Share of County 2035	Share of County 2066
Malheur County	31,569	31,964	31,994	0.1%	0.0%	100.0%	100.0%	100.0%
Adrian	182	192	192	0.3%	0.0%	0.6%	0.6%	0.6%
Jordan Valley	175	178	173	0.1%	-0.1%	0.6%	0.6%	0.5%
Nyssa	3,474	3,449	3,303	0.0%	-0.1%	11.0%	10.8%	10.3%
Ontario	12,552	12,763	12,896	0.1%	0.0%	39.8%	39.9%	40.3%
Outside UGBs	13,049	13,320	13,500	0.1%	0.0%	41.3%	41.7%	42.2%

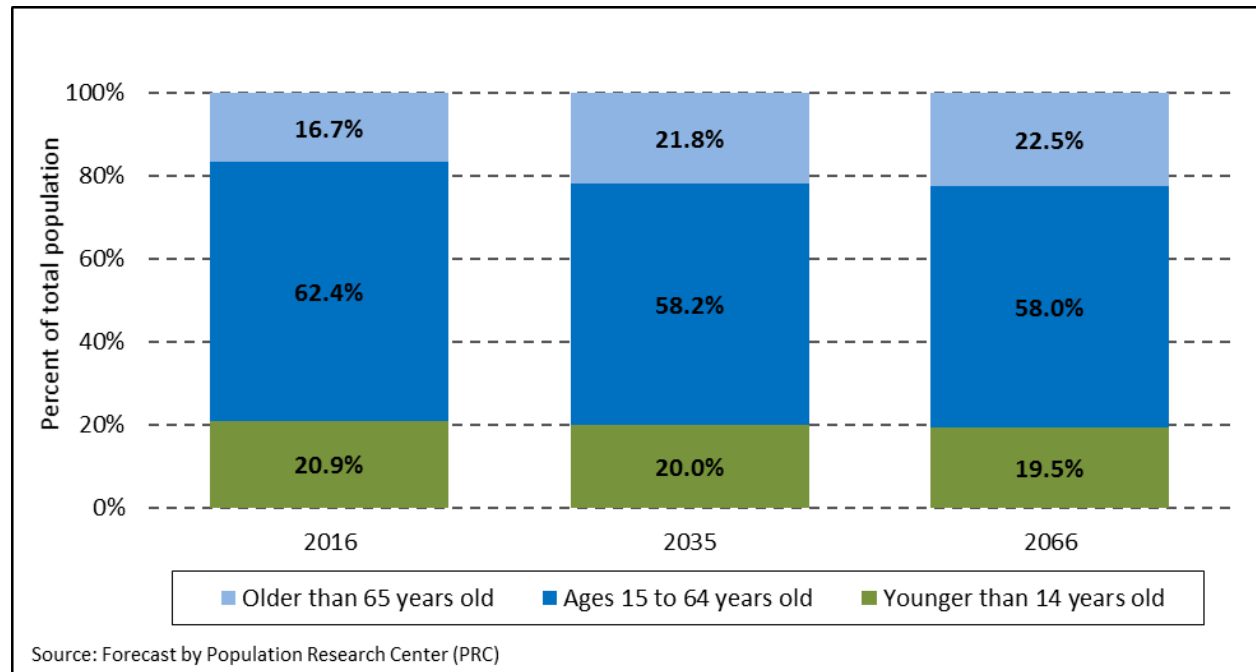
Source: Forecast by Population Research Center (PRC)

Note 1: For simplicity each UGB is referred to by its primary city's name.

Forecast Trends in Components of Population Change

As previously discussed, a key factor in increasing deaths is an aging population. From 2016 to 2035 the proportion of county population 65 or older is forecast to grow from roughly 17 percent in 2016 to about 22 percent in 2035, and only slightly increasing to roughly 23 percent by 2066 (Figure 17). For a more detailed look at the age structure of Malheur County's population see the forecast table published to the forecast program website (<http://www.pdx.edu/prc/opfp>).

Figure 17. Malheur County—Age Structure of the Population (2016, 2035, and 2066)



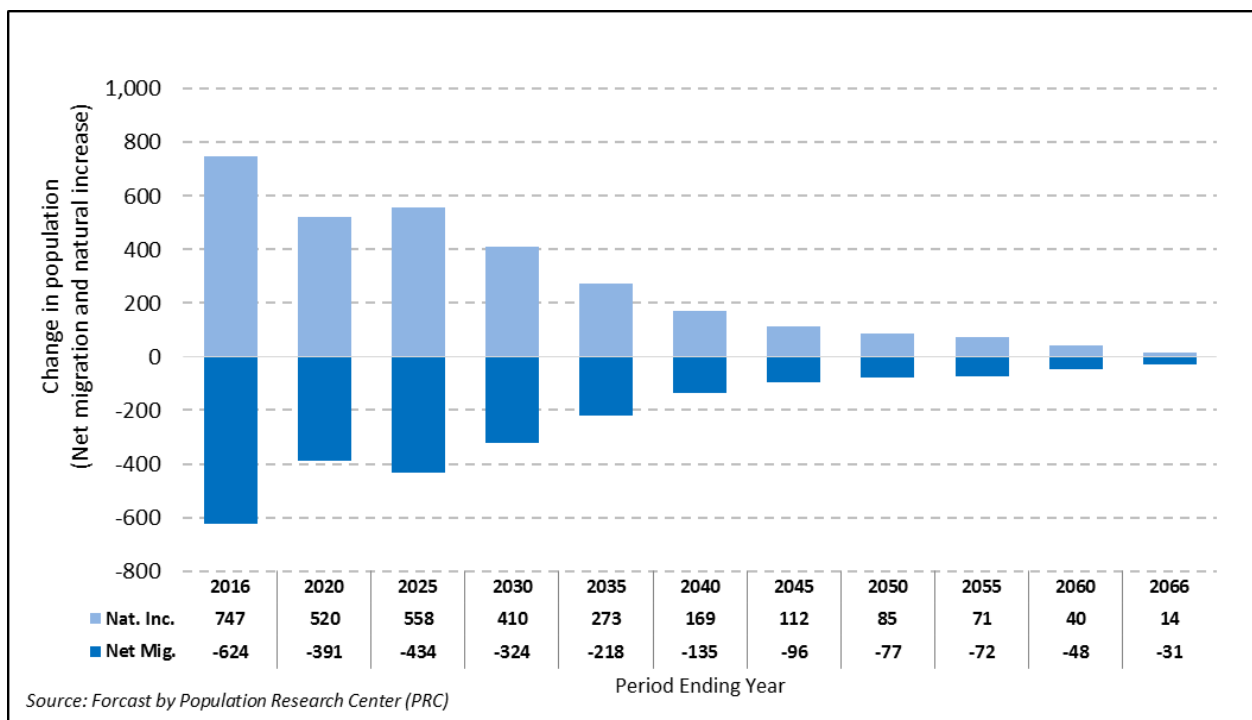
As the countywide population ages in the near-term—contributing to a slow-growing population of women in their years of peak fertility—and more women choose to have fewer children and have them at an older age, the number of average annual births is expected to decrease or remain relatively stable;

this combined with the steady rise in number of deaths, is expected to lead to a declining natural increase (Figure 18).

Net out-migration is forecast to diminish over the forecast period. The majority of these net out-migrants are expected to be young and middle-age individuals.

In summary, a diminishing natural increase and a decreasing net out-migration are expected to lead to modest population growth (Figure 18). An aging population is expected to not only lead to an increase in deaths, but a smaller proportion of women in their childbearing years will likely result in a long-term decline in births. Net out-migration is expected to subside over the forecast period, somewhat softening the drop in natural increase.

Figure 18. Malheur County—Components of Population Change, 2015-2065



Glossary of Key Terms

Cohort-Component Method: A method used to forecast future populations based on changes in births, deaths, and migration over time; this method models the population in age cohorts, which are survived into progressively older age groups over time and are subject to age-specific mortality, fertility and net migration rates to account for population change.

Coordinated population forecast: A population forecast prepared for the county along with population forecasts for its city 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 residency.

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 quarters population counts.

Occupancy rate: The proportion of total housing units that is occupied by individuals or groups of persons.

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

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. This is commonly estimated to be 2.1 children per woman in the U.S.

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 Adrian, Jordan Valley, Nyssa, and Vale did not submit survey responses.

Adrian—Malheur County—NO SURVEY RESPONSE						
Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	Observations about Housing (including vacancy rates)	Planned Housing Development/Est. Year Completion	Future Group Quarters Facilities	Future Employers	Infrastructure	Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes
						Promos: Hinders:

Adrian—Malheur County—NO SURVEY RESPONSE

<p>Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies</p>	
<p>Other information (e.g. planning documents, email correspondence, housing development survey)</p>	

Jordan Valley—Malheur County—NO SURVEY RESPONSE

Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	Observations about Housing (including vacancy rates)	Planned Housing Development/Est. Year Completion	Future Group Quarters Facilities	Future Employers	Infrastructure	Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes
						<p>Promos:</p> <p>Hinders:</p>
<p>Highlights or summary of influences on or anticipation of population and housing growth from planning documents and</p>						

Jordan Valley—Malheur County—NO SURVEY RESPONSE

<p>studies</p>	
<p>Other information (e.g. planning documents, email correspondence, housing development survey)</p>	

Nyssa—Malheur County—NO SURVEY RESPONSE

Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	Observations about Housing (including vacancy rates)	Planned Housing Development/Est. Year Completion	Future Group Quarters Facilities	Future Employers	Infrastructure	Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes
						Promos: Hinders:
Highlights or summary of influences on or anticipation of population and housing growth from planning documents and						

Nyssa—Malheur County—NO SURVEY RESPONSE

<p>studies</p>	
<p>Other information (e.g. planning documents, email correspondence, housing development survey)</p>	

Ontario—Malheur County—11/2014

Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	Observations about Housing (including vacancy rates)	Planned Housing Development/Est. Year Completion	Future Group Quarters Facilities	Future Employers	Infrastructure	Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes
<p>Ontario has about a 15% of citizens over the age of 65 and approximately 32% under the age of 18, with approximately 42% of the population being Hispanic or Latino. Ontario has shown a decline in population in recent years with an approximate population of 11,000.</p>	<p>New housing had a small increase in recent years, and existing homes for sale are stable with a 12 month supply in the \$120K to \$180K range. Rental units seem to be stable.</p>	<p>Ontario has one residential housing subdivision planned with 27 lots estimated to be completed in summer of 2016. Target price: \$180k- \$300k for 1800 to 3000 sq. ft. homes with double car garages. The last housing subdivision in Ontario was completed in 2008.</p>	<p>A developer is looking into developing a 40 unit residential.</p>	<p>None</p>	<p>No new major infrastructure is planned in near future.</p>	<p>Promos: The City has Water and Waste water facilities to accommodate future growth without having to increase any major infrastructure but at the same time has plenty of room to expand the facilities if the need arises.</p> <p>Hinders: Due to the slow economy a few of the major employers in the area experienced about 100 layoffs in the past couple of years</p>

Ontario—Malheur County—11/2014

Highlights or summary of influences on or anticipation of population and housing growth from planning documents and studies	In 2007 under City Ordinance No. 2597-2007 the City expanded its Urban Growth area (UGA) and Urban Reserve Area (URA) to accommodate future growth. As of October 2015 the City of Ontario Has 2,924.78 Acres within the City limits, 1,990.08 Acres within the UGA and 1,466.38 Acres within the URA.
Other information (e.g. planning documents, email correspondence, housing development survey)	

Vale—Malheur County—NO SURVEY RESPONSE

Observations about Population Composition (e.g. about children, the elderly, racial ethnic groups)	Observations about Housing (including vacancy rates)	Planned Housing Development/Est. Year Completion	Future Group Quarters Facilities	Future Employers	Infrastructure	Promotions (Promos) and Hindrances (Hinders) to Population and Housing Growth; Other notes
						<p>Promos:</p> <p>Hinders:</p>
<p>Highlights or summary of influences on or anticipation of population and housing growth from planning documents and</p>						

Vale—Malheur County—NO SURVEY RESPONSE

<p>studies</p>	
<p>Other information (e.g. planning documents, email correspondence, housing development survey)</p>	

Appendix B: Specific Assumptions

Adrian

The 5-year average annual housing unit growth rate is assumed to gradually decline, and the overall 50-year annual average is 0.19 percent throughout the forecast period. The declining trend is consistent with the historical decreasing trend that has occurred since 2000. The occupancy rate is assumed to slightly decrease throughout the 50-year horizon, but averages above 88 percent. PPH is assumed to be stable at 2.53 over the forecast period, the same level as in Census 2010. The group quarters population is assumed to remain at zero.

Jordan Valley

The 5-year average annual housing unit growth rate is assumed to gradually decline throughout the forecast period, but the overall 50-year annual average remains positive, which is slightly lower than during the 2000s. The occupancy rate is assumed to gradually decrease, and averages 56 percent throughout the 50-year horizon. PPH is assumed to stay at 2.05 over the forecast period. There is no group quarters population in Jordan Valley.

Nyssa

The 5-year average annual housing unit growth rate is assumed to slightly increase throughout the forecast period, and the overall 50-year annual average growth rate is close to zero percent. The occupancy rate is assumed to gradually decrease throughout the 50-year horizon, but averages above 90 percent. PPH is assumed to be stable at 3.08 over the forecast period. The group quarters population is assumed to stay at the Census 2010 level.

Ontario

Total fertility rates are assumed to follow a historical trend (observed from the 2000 to 2010 period), and gradually decline over the forecast period. Survival rates for the whole 50-year horizon are assumed to slightly increase. Survival rates for 2060 are assumed to be the same as those forecast for the county as a whole. Ontario has historically had the similar survival rates as observed countywide. Age-specific net migration rates are assumed to generally follow historical patterns for Malheur County, with accelerated rates for multiple 5-year age groups.

Vale

The 5-year average annual housing unit growth rate is assumed to gradually increase throughout the forecast period, and the overall 50-year annual average growth rate is higher than the average of the 2000s. The occupancy rate is assumed to slightly decrease throughout the 50-year horizon, but averages above 87 percent. PPH is assumed to be stable at 2.65 over the forecast period. The group quarters population is assumed to stay at the Census 2010 level.

Outside UGBs

Total fertility rates are assumed to follow the historical trend of the 2000s, gradually declining over the forecast period. Survival rates over the whole 50-year horizon are assumed to gradually increase. Survival rates for 2060 are assumed to be the same as those forecast for the county as a whole. Age-specific net migration rates are assumed to generally follow historical patterns for Malheur County, but at slightly higher magnitudes over the forecast period.

Appendix C: Detailed Population Forecast Results

Figure 19. Malheur County - Population by Five-Year Age Group

Population Forecasts by Age Group / Year	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2066
00-04	2,138	2,165	2,155	2,140	2,117	2,103	2,098	2,102	2,092	2,070	2,058	2,055
05-09	2,270	2,127	2,161	2,164	2,156	2,148	2,129	2,127	2,121	2,104	2,098	2,094
10-14	2,181	2,245	2,070	2,116	2,127	2,134	2,121	2,106	2,094	2,081	2,081	2,078
15-19	2,164	2,136	2,215	2,054	2,108	2,134	2,136	2,126	2,100	2,082	2,085	2,084
20-24	2,172	2,061	2,028	2,116	1,970	2,036	2,057	2,062	2,043	2,012	2,010	2,010
25-29	2,014	2,055	1,926	1,907	1,997	1,873	1,930	1,952	1,947	1,923	1,908	1,907
30-34	1,984	1,906	1,962	1,852	1,840	1,942	1,817	1,877	1,890	1,880	1,871	1,868
35-39	2,027	1,984	1,888	1,956	1,852	1,854	1,952	1,829	1,880	1,888	1,893	1,890
40-44	1,875	1,970	1,913	1,833	1,906	1,819	1,816	1,915	1,787	1,831	1,853	1,853
45-49	1,827	1,780	1,895	1,852	1,780	1,865	1,776	1,776	1,864	1,734	1,790	1,794
50-54	1,911	1,767	1,715	1,837	1,807	1,751	1,830	1,747	1,740	1,821	1,708	1,718
55-59	1,870	1,827	1,659	1,623	1,749	1,740	1,685	1,768	1,683	1,673	1,768	1,745
60-64	1,864	1,813	1,766	1,618	1,594	1,734	1,728	1,681	1,759	1,674	1,682	1,701
65-69	1,606	1,782	1,728	1,701	1,571	1,565	1,707	1,709	1,661	1,740	1,674	1,676
70-74	1,356	1,484	1,692	1,652	1,635	1,521	1,515	1,657	1,656	1,607	1,700	1,686
75-79	995	1,150	1,291	1,486	1,460	1,459	1,360	1,361	1,487	1,484	1,456	1,473
80-84	651	700	843	957	1,108	1,100	1,103	1,034	1,036	1,135	1,151	1,147
85+	664	747	915	1,044	1,188	1,220	1,252	1,194	1,181	1,272	1,210	1,216
Total	31,569	31,699	31,823	31,909	31,964	31,998	32,014	32,021	32,020	32,012	31,998	31,994

Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2016.

Figure 20. Malheur County's Sub-Areas - Total Population

Area/Year	2016	2020	2025	2030	2035	2040	2045	2050	2055	2060	2065	2066
Malheur County	31,569	31,699	31,823	31,909	31,964	31,998	32,014	32,021	32,020	32,012	31,998	31,994
Adrian UGB	182	185	188	190	192	192	193	193	193	192	192	192
Jordan Valley UGB	175	176	177	178	178	177	177	176	175	174	173	173
Nyssa UGB	3,474	3,481	3,477	3,465	3,449	3,430	3,407	3,384	3,360	3,335	3,309	3,303
Ontario UGB	12,552	12,615	12,678	12,726	12,763	12,795	12,821	12,844	12,865	12,882	12,894	12,896
Vale UGB	2,136	2,120	2,102	2,083	2,063	2,041	2,019	1,998	1,977	1,956	1,934	1,930
Outside UGB Area	13,049	13,121	13,201	13,267	13,320	13,363	13,398	13,426	13,451	13,473	13,496	13,500

Population Forecasts prepared by: Population Research Center, Portland State University, June 30, 2016.