

Oregon Population Forecast Program

Proposed Coordinated Forecasts for Lincoln
County, its Urban Growth Boundaries (UGBs),
and the Area Outside UGBs

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The primary purpose of today's meeting is to present progress and plans for future revisions related to the population forecasts, as well as gather additional data from comments or in response to today's Q&A.

Presentation Contents:

- Preliminary proposed forecasts of Region 4 counties and their sub-areas.
- Historical data (2000-2019) and forecast results(2020–2070) for the counties, as well as the Urban Growth Boundary (UGB) areas within each county.
- Approximately 30-40 minutes for each county, including 10-15 minutes for Q&A.

Cohort Component Model ("Demographic Balancing Equation"):

$$Population_{t2} = Population_{t1} + Births_{t1\ to\ t2} - Deaths_{t1\ to\ t2} + NM_{t1\ to\ t2}$$

t1: Starting year

t2: Ending year

NM: Net migration (difference between in/out migration)

Housing Unit Method:

$$Population = HU \times Occ \times PPH + GQ$$

HU: housing unit stock

Occ: Occupancy rate

PPH: Persons per household

GQ: Group quarters population

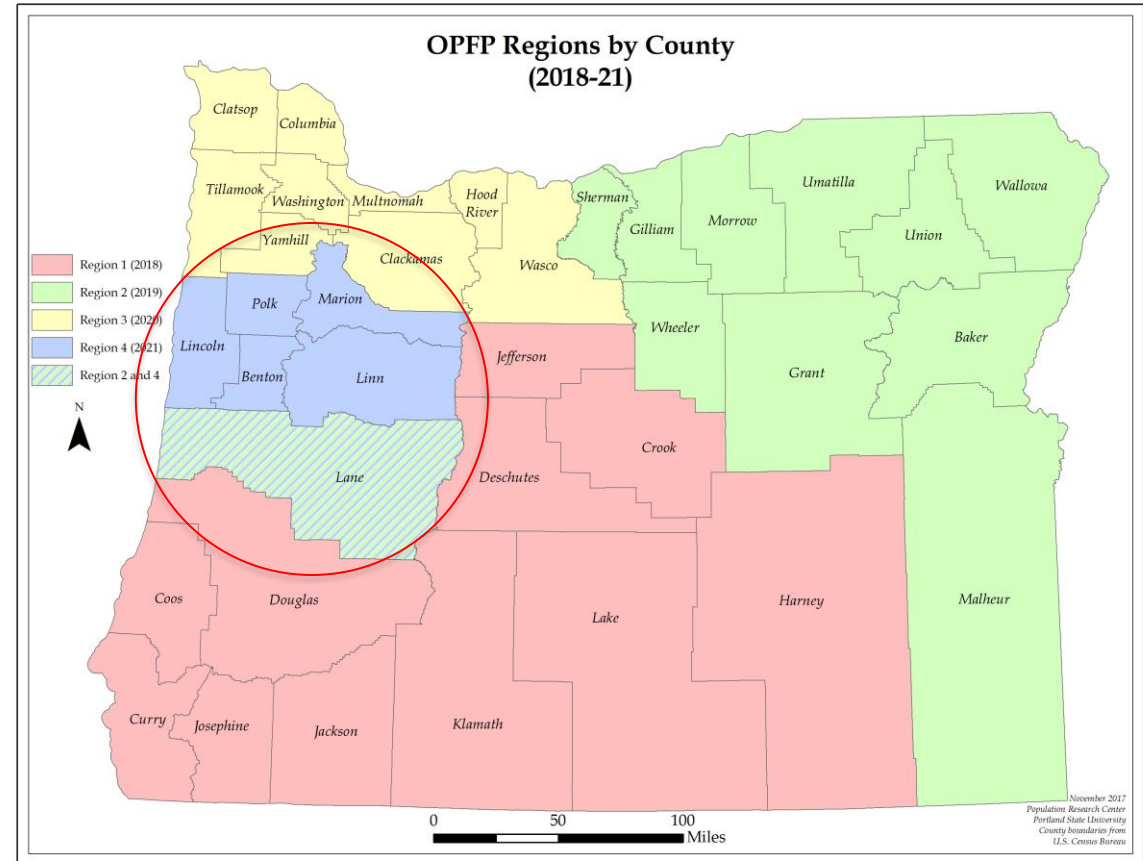
Modified Methodology (50 Year Period)

Forecast Methods (2020-45)

- Cohort-Component and Housing Unit Model

Modified Method (2045-70):

- County: AAGR of the last forecast period (2044-45) is extrapolated out for the remaining 25 years.
- Sub-areas: Trend the sub-area share of the County for the remaining 25 years.

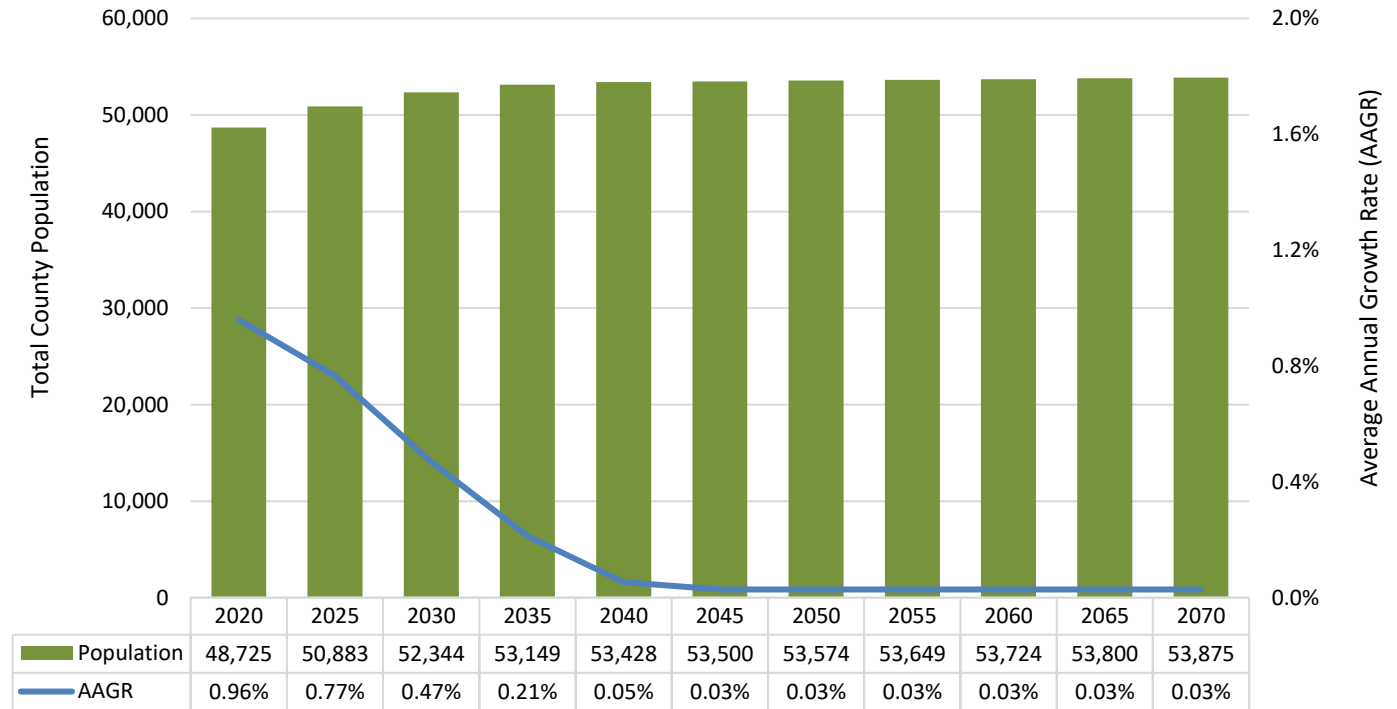


1. We incorporate the following assumptions for fertility and mortality.
 - a) Deaths and survival rates were projected based on historical trends (2000-2019) and the methodology published by Clark and Sharrow 2011 ([link](#)). Mortality rates for the 85+ age group were further divided into 5-year age groups up to 100+.
 - b) We applied some constrains to ensure the number of deaths maintain in a reasonable range as the elderly populations grow, accounting for positive factors associated with life expectancy (e.g., advanced medical treatments, life-style changes).
 - c) Fertility rates were projected based on historical trend up to 2030 and remain constant afterwards.
2. Net migration rates were based on the data published by the University of Wisconsin-Madison for 2000-2010, with minor adjustments made based on the following assumptions:
 - a) In/out migration would gradually approach zero for populations over 65, assuming there is minimal moving for people as they approach the age of 85+.
 - b) Considered and mitigated the uncertainties of in/out migration among college students.
3. Populations in sub-areas were forecasted using the housing unit method based on survey responses and historical pattern.

Proposed Forecast Results

Population of Lincoln County is projected to grow from nearly 49,000 in 2020 to nearly 54,000 by 2070. Population growth rate tends to drop to nearly 0% after 2040.

Lincoln County - Total Population Point Estimates (2020-2070)

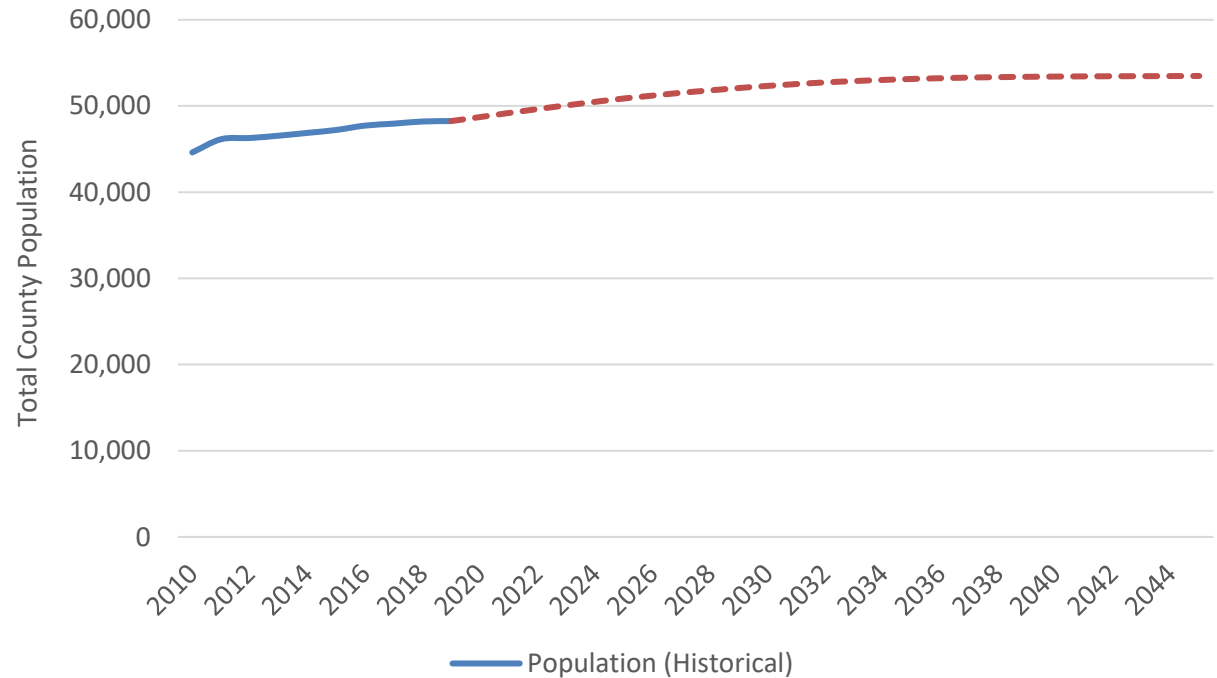


Source: Forecast by Population Research Center (PRC).
[Historical trend](#)

Proposed Forecast Results

Historical trend shows that total population reached 48,260 in 2019 and reaches 53,500 by 2045. The total county population shows a 10.3% growth between 2019 and 2045. The growth slows down as we move toward the end of the forecast.

Lincoln County – Total Population Trend (2010-2045)

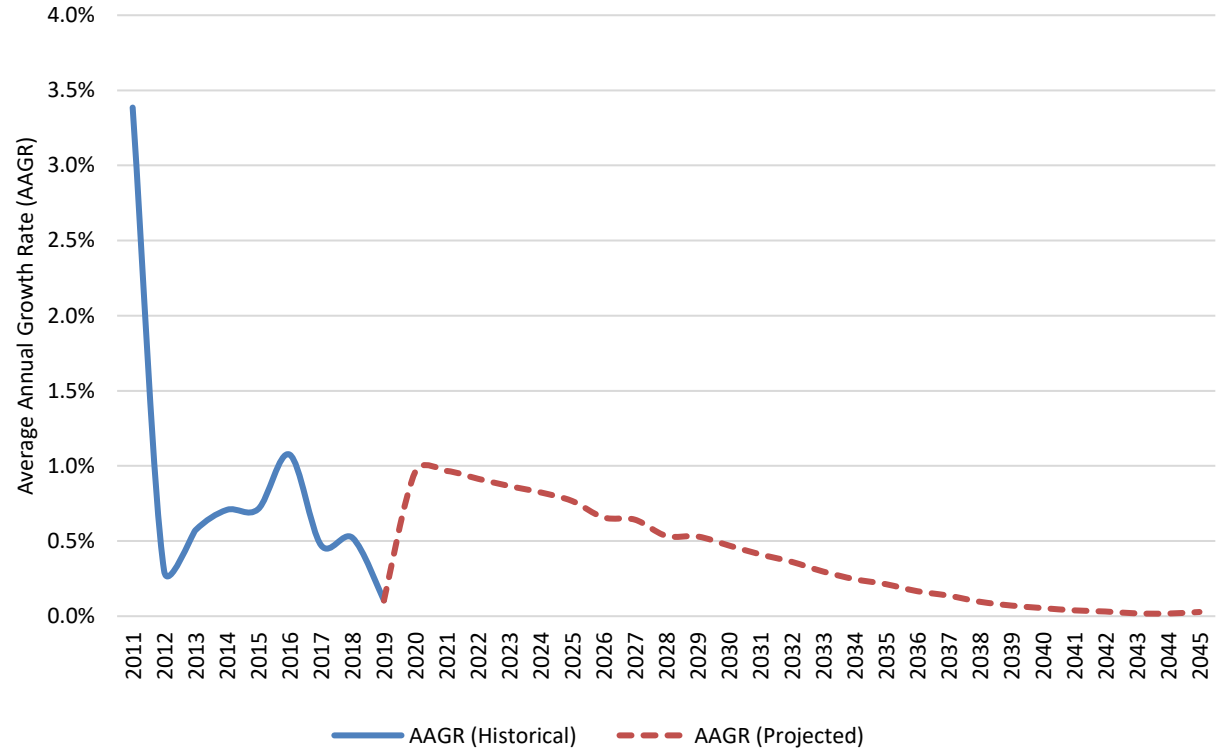


Source: U.S. Census Bureau. PRC Estimates. Forecast by Population Research Center (PRC).

Proposed Forecast Results

The average annual growth rate of the total population has varied throughout the historical time period, reaching nearly 3.5% in 2010-2011, and as low as 0.1% in 2019. AAGR declines to a very low rate after 2040 as county population remains relatively constant.

Lincoln County – Average Annual Growth Rate (2010-2045)

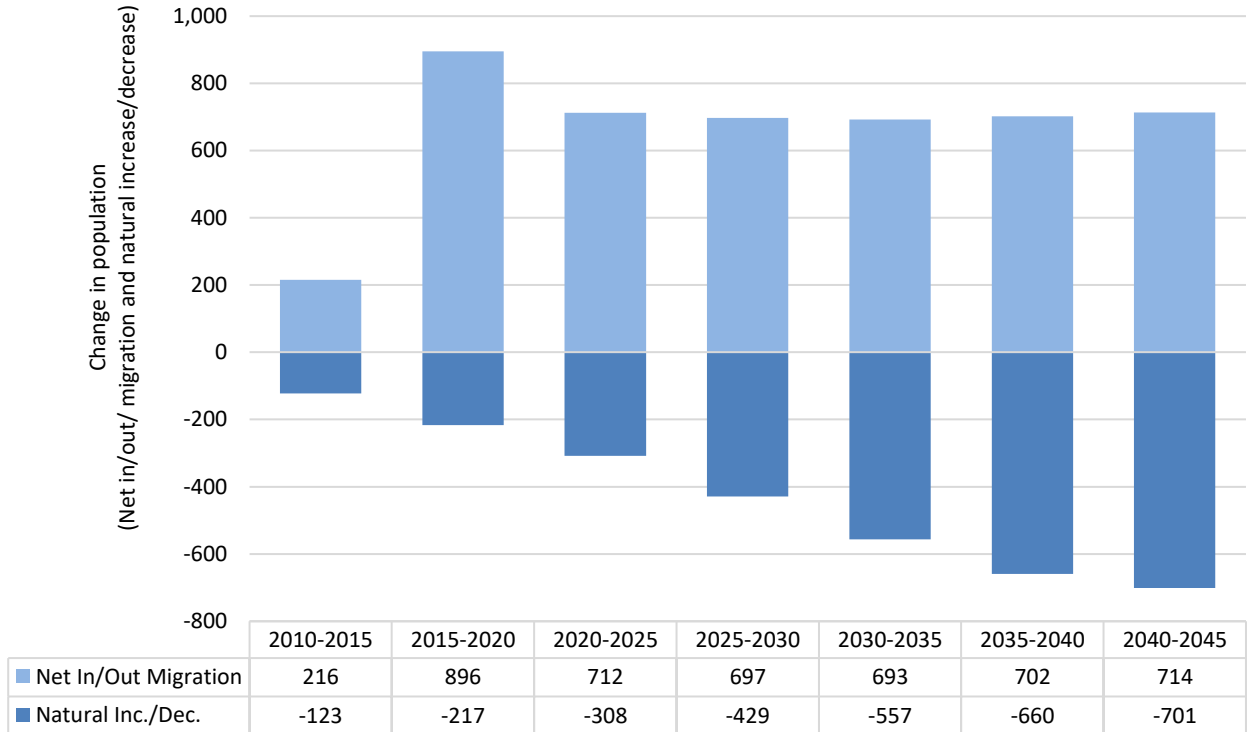


Source: U.S. Census Bureau. PRC Estimates. Forecast by Population Research Center (PRC).

Proposed Forecast Results

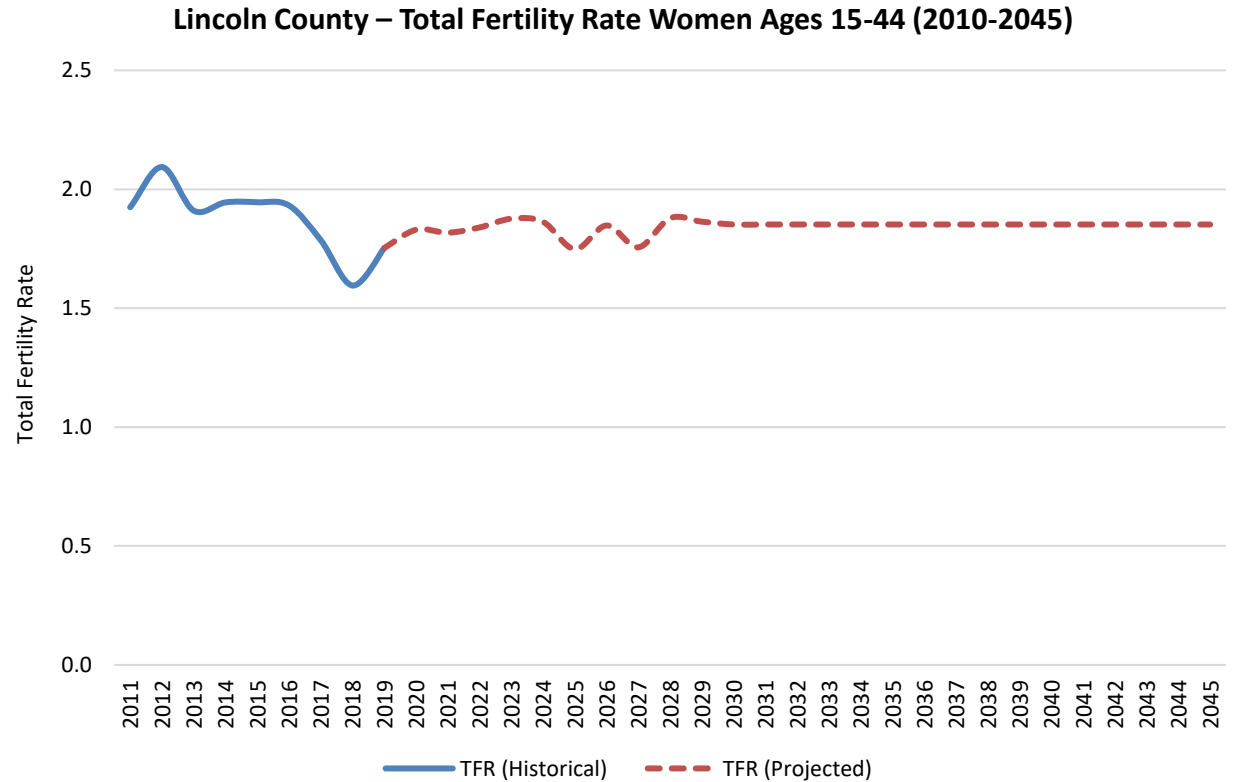
The overall natural increase/decrease in Lincoln County continues the historical trend and shows natural decrease through 2045. The net migration remains positive, but constant based on the forecast, which eventually lead to a balance between natural increase/decrease and net migration.

Lincoln County - Components of Population Change by Five-Year Intervals (2015-2045)



Source: Forecast by Population Research Center (PRC)
[Historical trend](#)

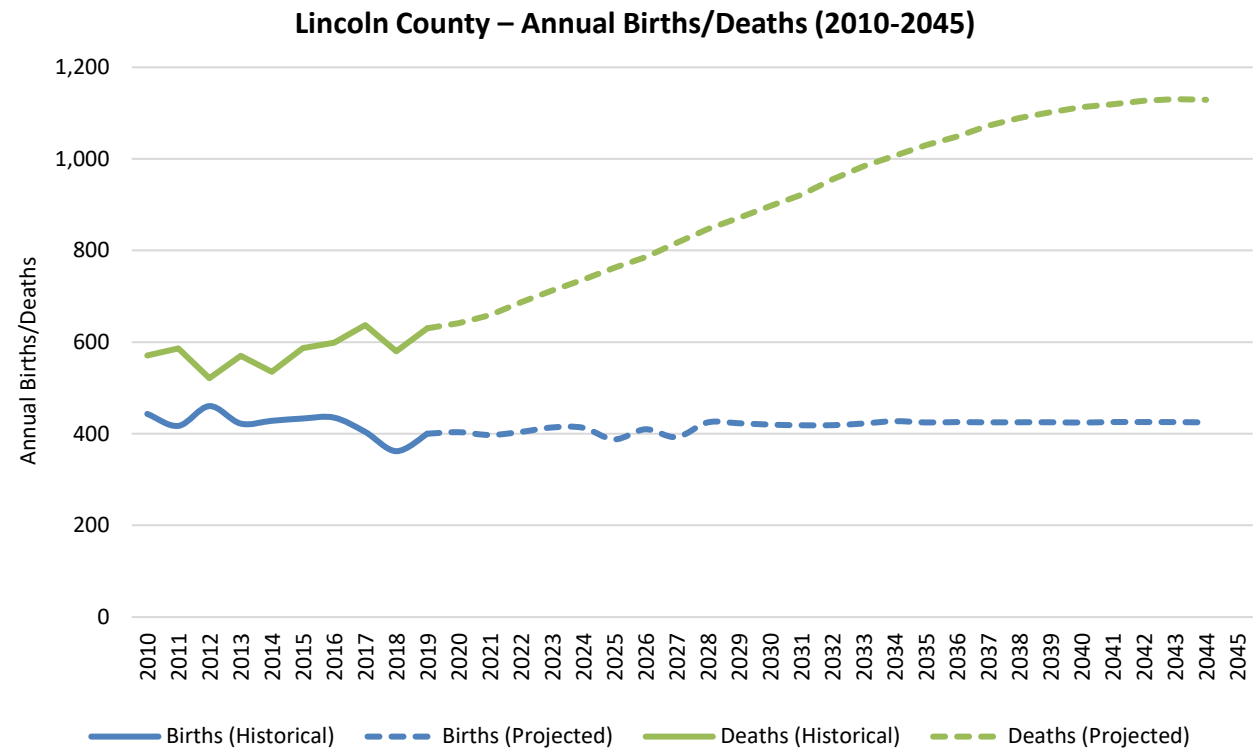
The total fertility rate for women age 15-44 remains relatively stable around 1.85.



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

Historical and Forecast Trends

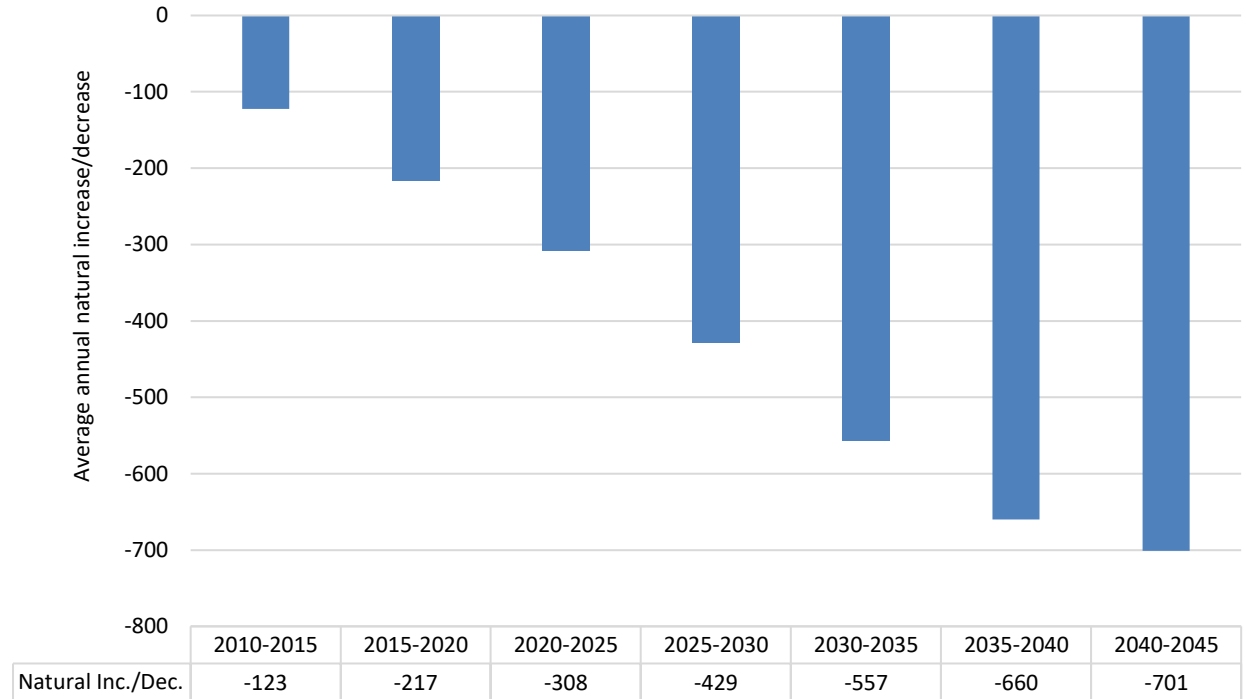
The number of deaths continues to be higher than births through 2045, which follows the existing trend in the county. Births remains relatively stable over time while deaths increases significantly due to population aging.



Source: Oregon Health Authority, Center for Health Statistics. Forecast by Population Research Center (PRC)

Natural decrease has already occurred in the county and the trend continues as we move forward. On average, there is an annual loss of 701 persons due to natural decrease during 2040-2045, compared to an annual loss of 123 during 2010 to 2015.

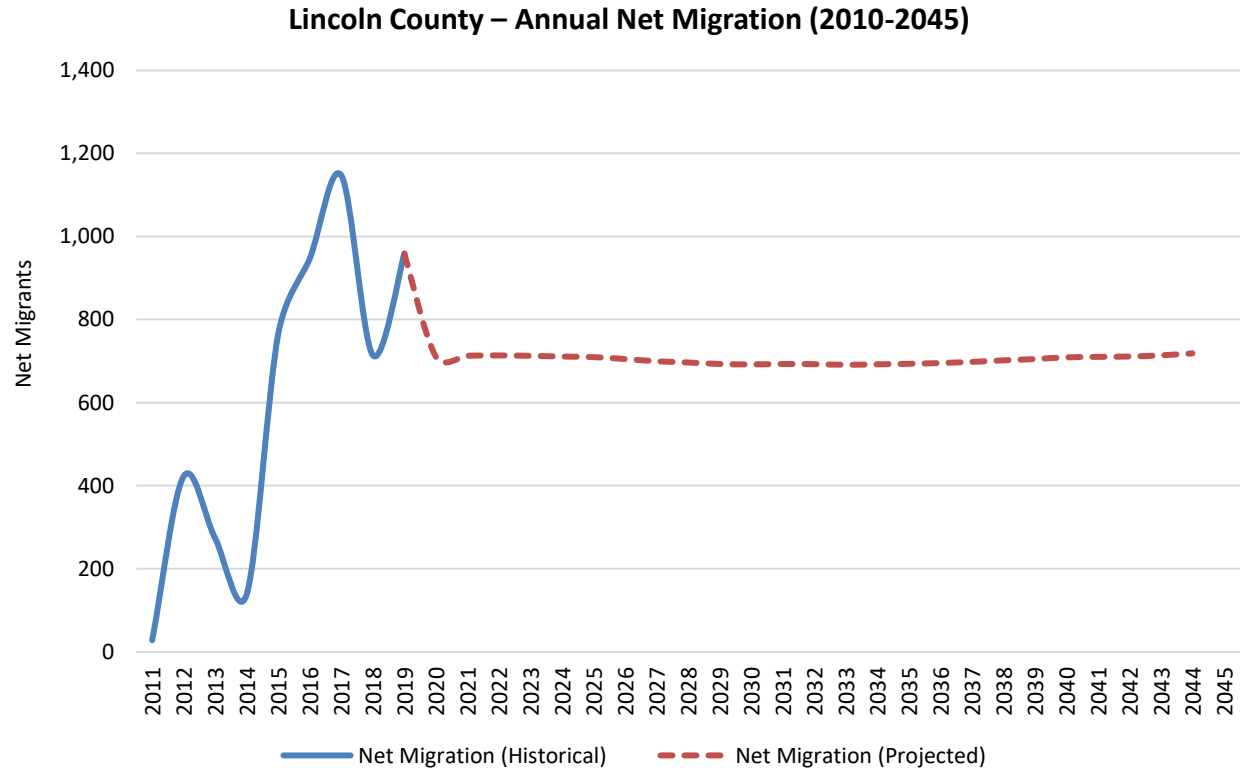
Lincoln County - Average Annual Natural Increase/Decrease



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

Historical and Forecast Trends

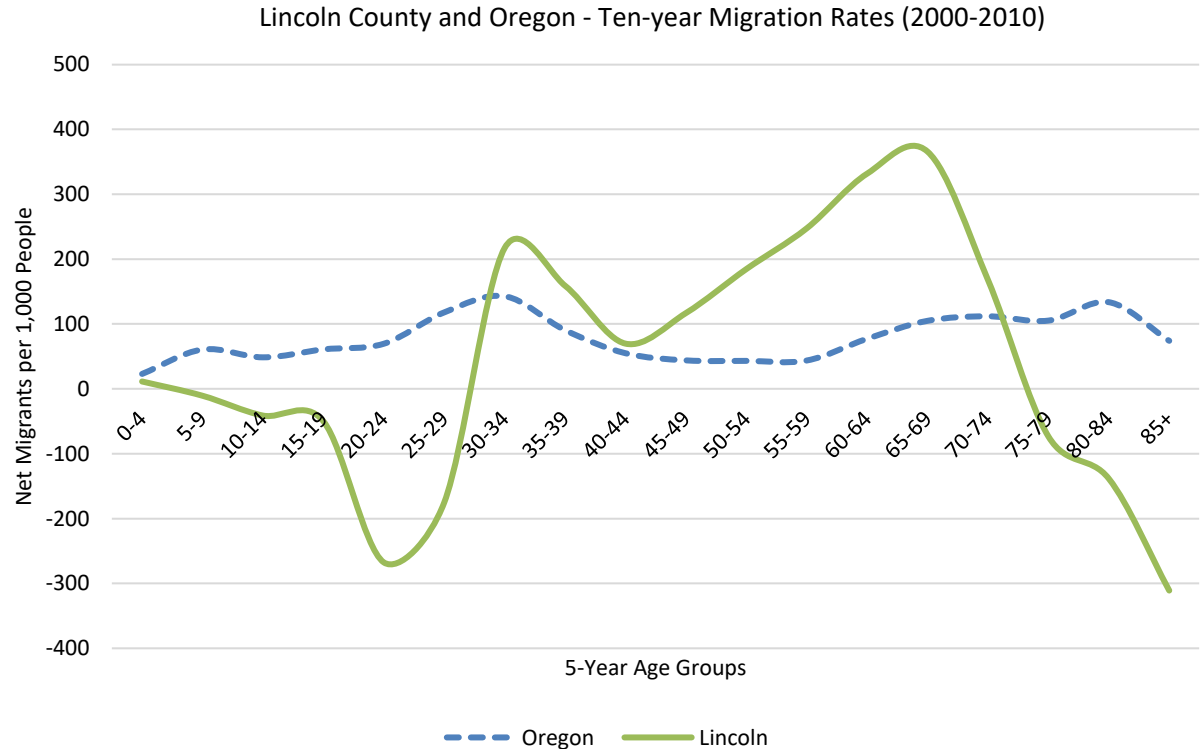
The annual net migration remains relatively constant with no major variations over the next 24 years. On average, the annual net migration is around 700 between 2020 and 2045.



Sources: Center for Demography and Ecology, University of Wisconsin-Madison. Calculated by Population Research Center (PRC).

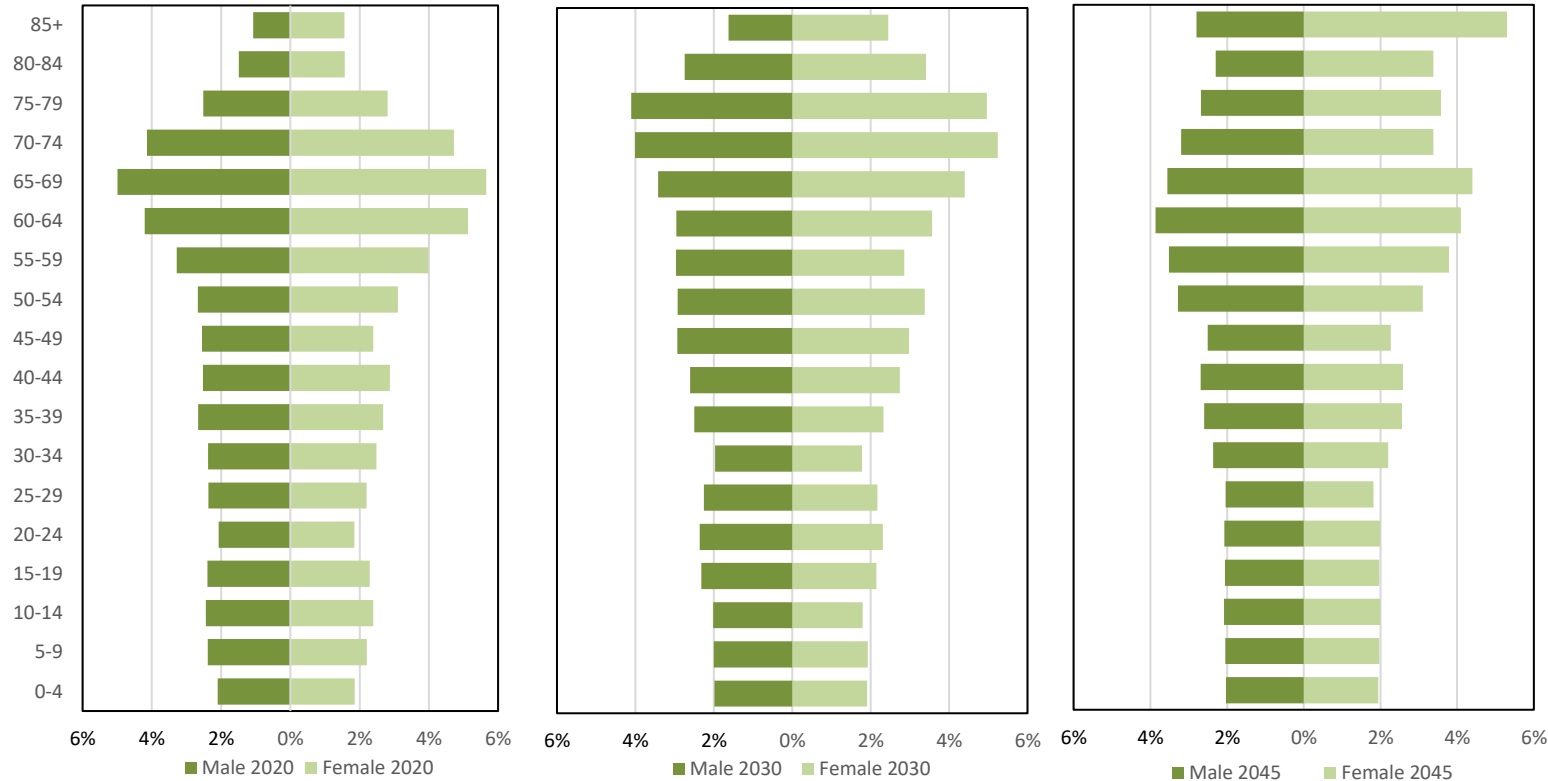
Additional Historical Trends

This figure presents the historical 10-year net migration rates for Oregon and Lincoln County from 2000 to 2010. Compared to Oregon, Lincoln County has a significantly higher net migration rate in the older age groups, especially in the 65-69 age group. There is a high out-migration rate in the younger age groups, especially for the 20-24 age group.



Lincoln County—Age Structure of the Population

These figures show the age and sex distribution of Lincoln County. The oldest ages are at the top of the age pyramid and increase as a share of the population over time. The share of the oldest age group increases to 8% in 2045 from 3% in 2020.



Source: Forecast by Population Research Center (PRC)
[Historical trend](#)

These numbers represent *Proposed* Forecast Results

1. All sub-area forecasts use a housing unit method rather than a cohort-component model for consistency.
2. If planned housing units were reported in the surveys, we expect that they will be built within roughly 5 years, followed by a return to long range historic patterns.
3. If the reported housing development plans does not lead to significant differences to the observed pattern over most recent decade (2010-2019), the 2010-2019 housing development pattern was used.
4. If no planned housing units were reported, we assume future housing construction will follow historic patterns.
5. Where population has historically declined or stayed flat and there is no planned housing construction, we do not expect major losses of housing stock. Household turnover will create opportunities for new households, preventing significant decline in population.
6. We expect persons per household (PPH) to stay relatively constant over time with no major changes. Although the median age tend to increase slightly for many areas, aggressive increases in median age are not expected in the short term to post significant impact in the forecast.

Historical and Forecast Trends

Lincoln County – Historical and Forecast Population for Lincoln County and its Sub-Areas

	Historical			Forecast				
	2000	2010	AAGR (2000-2010)	2020	2045	2070	AAGR (2020-2045)	AAGR (2045-2070)
Lincoln County	44,479	44,619	0.0%	48,725	53,500	53,875	0.5%	0.0%
Outside UGBs	17,036	16,687	-0.2%	17,968	18,248	16,538	0.1%	-0.4%
Larger Sub-Areas								
Lincoln City	8,752	8,711	0.0%	9,443	10,570	10,696	0.6%	0.0%
Newport	9,971	10,110	0.1%	10,863	11,173	10,380	0.1%	-0.3%
Smaller Sub-Areas								
Depoe Bay	1,017	1,296	2.4%	1,921	3,984	6,678	3.6%	2.1%
Siletz	1,150	1,281	1.1%	1,445	1,723	1,828	0.9%	0.2%
Toledo	3,698	3,666	-0.1%	3,933	3,962	3,534	0.0%	-0.5%
Waldport	2,229	2,189	-0.2%	2,375	2,821	3,030	0.9%	0.3%
Yachats	626	679	0.8%	778	1,019	1,189	1.4%	0.6%

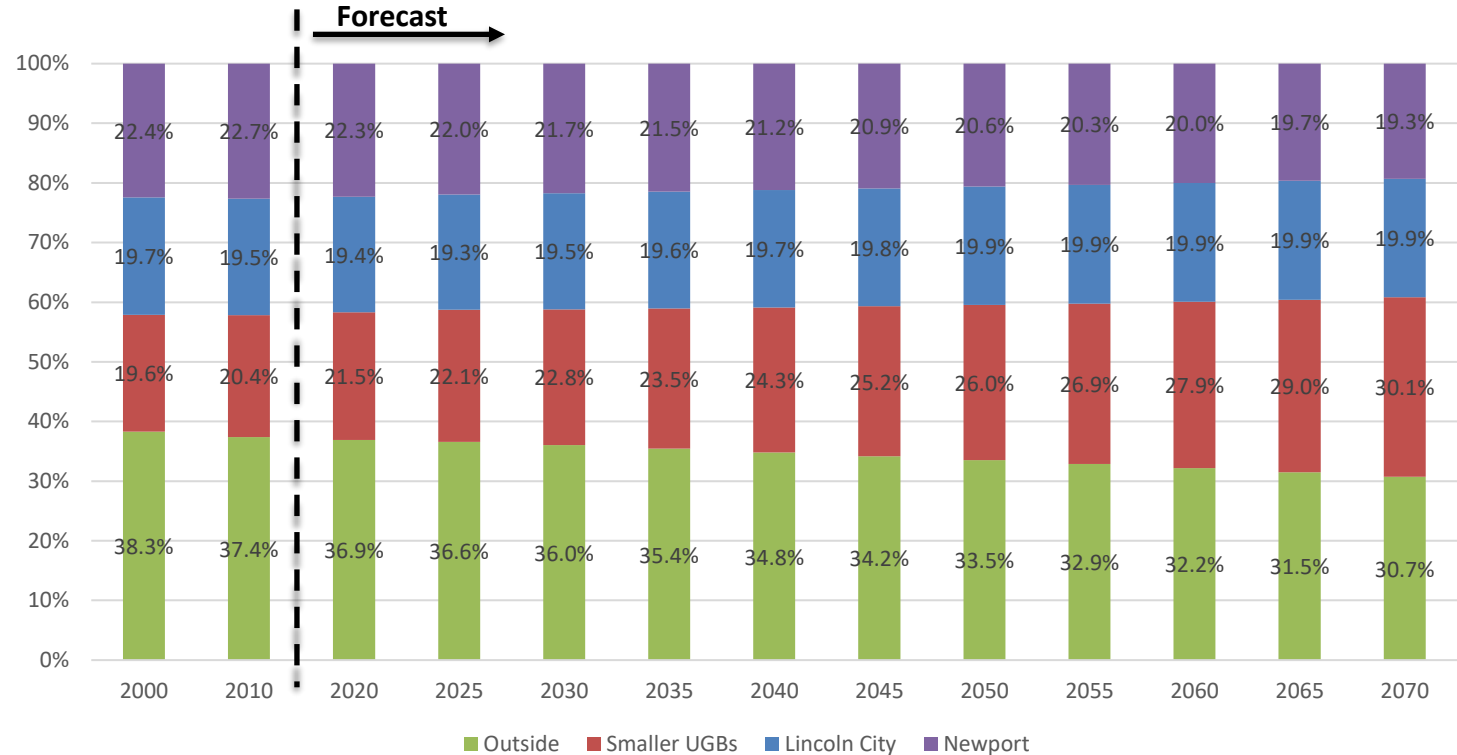
Sources: U.S. Census Bureau; Forecast by Population Research Center (PRC)

[Historical trend](#)

Proposed Forecast Results

Lincoln County – Population Shares of Sub-Areas and Outside UGBs

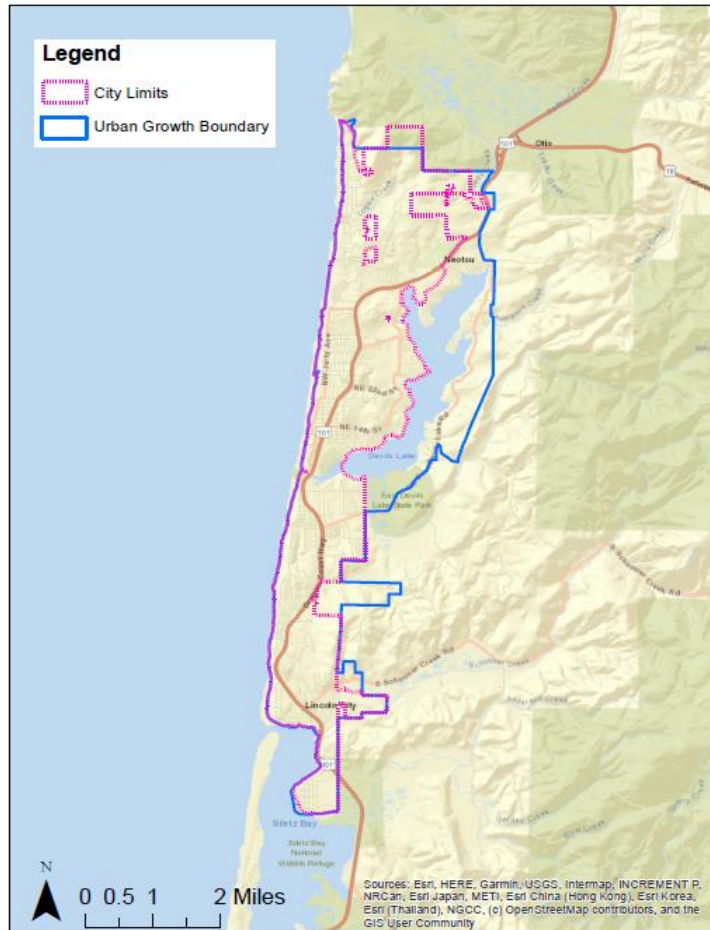
This figure shows the percentage of the county population that is in each large UGB, or smaller UGBs, or in the rest of the county. Over time, the share of the population living inside UGBs increases, while the population share outside of the UGBs decreases.



Sources: U.S. Census Bureau; Forecast by Population Research Center (PRC).

Note: Sub-areas with populations under 8,000 by 2010 were considered smaller UGBs

Proposed Forecast Results



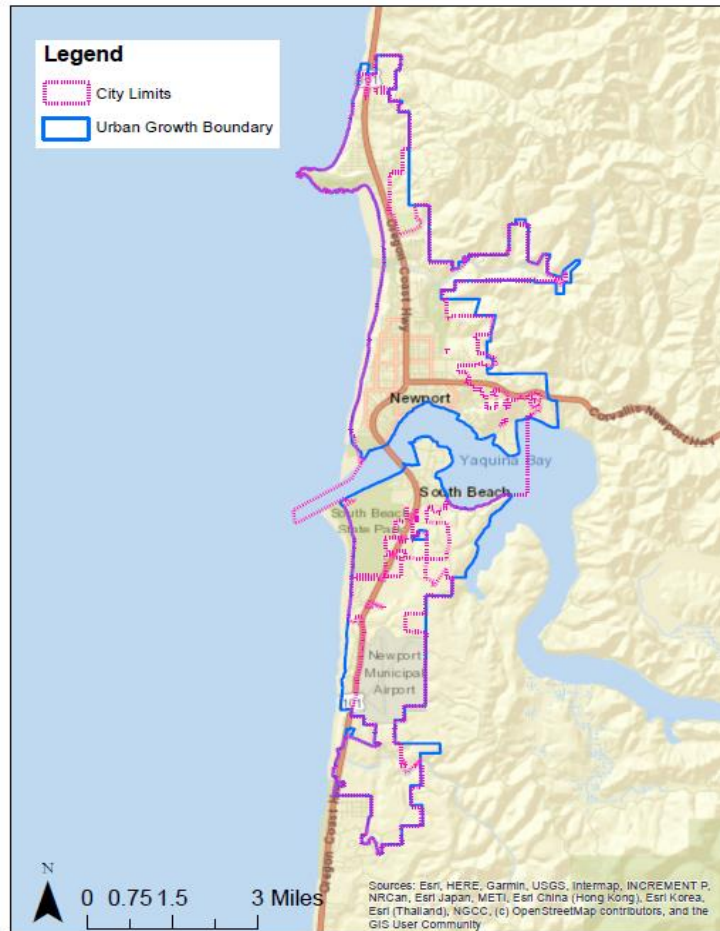
Lincoln City – Population Forecast

Year	Population	Share of County
2020	9,443	19.4%
2045	10,583	19.8%
2070	10,711	19.9%

Sources: Forecast by Population Research Center (PRC)

Note: Larger sub-areas refer to areas with populations over 8,000 by 2010.

Proposed Forecast Results



Newport – Population Forecast

Year	Population	Share of County
2020	10,863	22.3%
2045	11,187	20.9%
2070	10,394	19.3%

Sources: Forecast by Population Research Center (PRC)

Note: Larger sub-areas refer to areas with populations over 8,000 by 2010.

Lincoln County – Population Distribution in Smaller Sub-Areas

	Population			Share of County Population		
	2020	2045	2070	2020	2045	2070
Lincoln County	48,725	53,500	53,875	100%	100%	100%
Outside UGBs	17,968	18,271	16,560	36.9%	34.2%	30.7%
Depoe Bay	1,921	3,989	6,687	3.9%	7.5%	12.4%
Siletz	1,445	1,657	1,758	3.0%	3.1%	3.3%
Toledo	3,933	3,968	3,539	8.1%	7.4%	6.6%
Waldport	2,375	2,825	3,035	4.9%	5.3%	5.6%
Yachats	778	1,020	1,191	1.6%	1.9%	2.2%

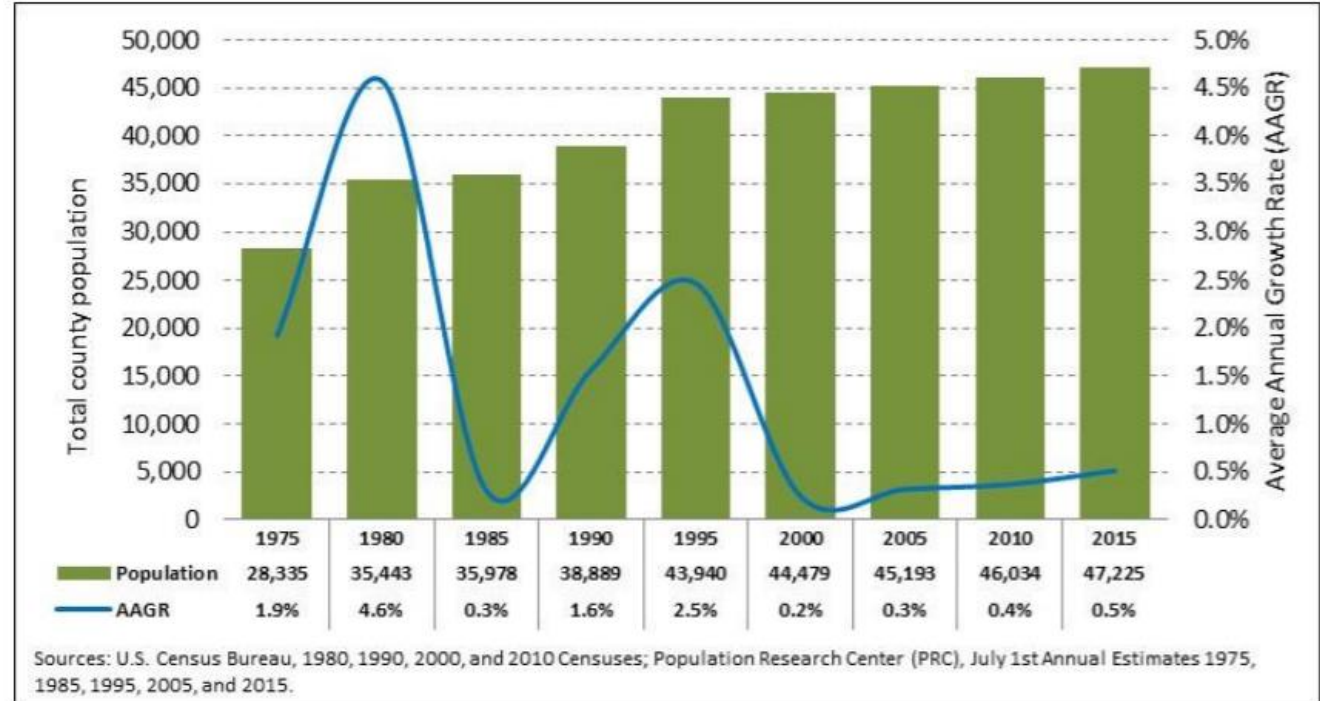
Sources: Forecast by Population Research Center (PRC)

Note: Smaller sub-areas refer to areas with populations under 8,000 by 2010.

1. We expect Lincoln County to experience a moderate AAGR of 0.5% or higher till 2030, but the AAGR will decline and drop to 0.03% by 2045.
2. Net migration is likely to remain positive.
3. The number of deaths will show significant increase due to population aging, while births shows no major change.
4. There is high in-migration rate the older age groups and the share of older population increases. While TFR remains around 1.85, there will continue to be natural decrease due to population aging and higher out-migration in younger age groups.
5. Most sub-areas will continue to experience population growth, while areas outside of the UGBs will decline. Newport and Toledo are the only areas that will experience population decrease from 2045-2070. Overall, smaller sub-areas will show strong increase in population share, reaching 24.5% in 2045, compared to 21.5% in 2020.
6. Covid-19 and wildfires implications.

Additional Historical Trends

This figure shows total population growth for Lincoln County during 1975-2015. The annual growth rate has been relatively high for most the years since 1975.



Additional Historical Trends

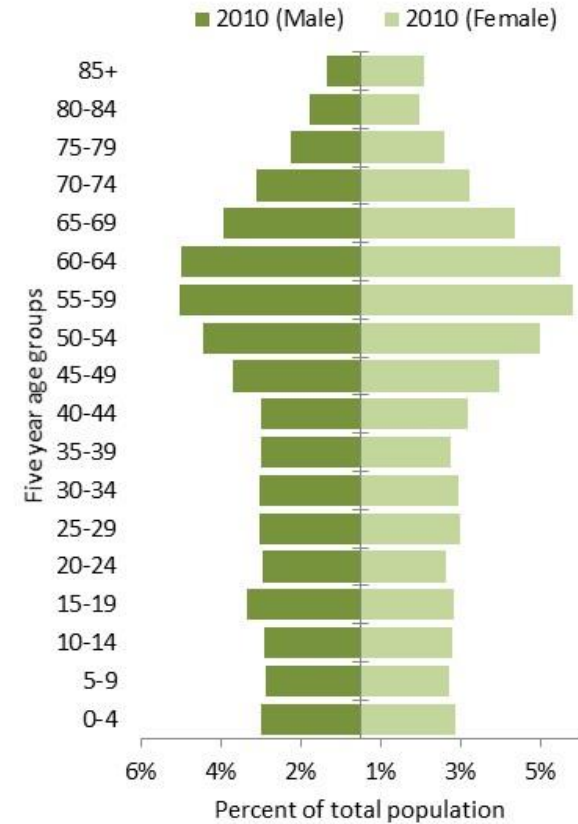
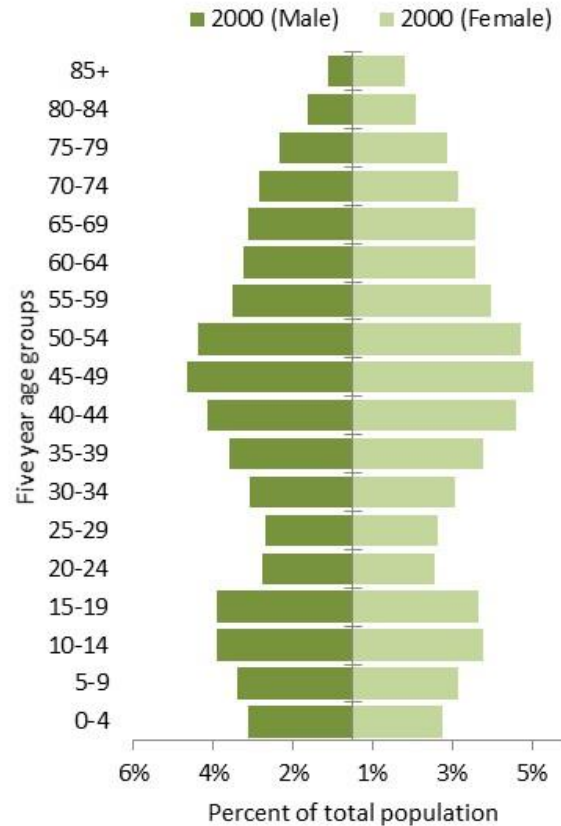
This table shows the growth rate of Lincoln County and its urban areas during 2000-2010.

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
<i>Lincoln County</i>	44,479	46,034	0.3%	100.0%	100.0%
Depoe Bay UGB	1,174	1,394	1.7%	2.6%	3.0%
Lincoln City UGB	8,717	8,969	0.3%	19.6%	19.5%
Newport UGB	10,118	10,554	0.4%	22.7%	22.9%
Siletz UGB	1,133	1,314	1.5%	2.5%	2.9%
Toledo UGB	3,645	3,730	0.2%	8.2%	8.1%
Waldport UGB	2,220	2,244	0.1%	5.0%	4.9%
Yachats UGB	617	690	1.1%	1.4%	1.5%
Outside UGBs	16,855	17,139	0.2%	37.9%	37.2%

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

Additional Historical Trends

These two age pyramids show the population at the time of the 2000 and 2010 census. The 2010 age pyramid showed the population aging forward from the 2000 census.



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

Additional Historical Trends

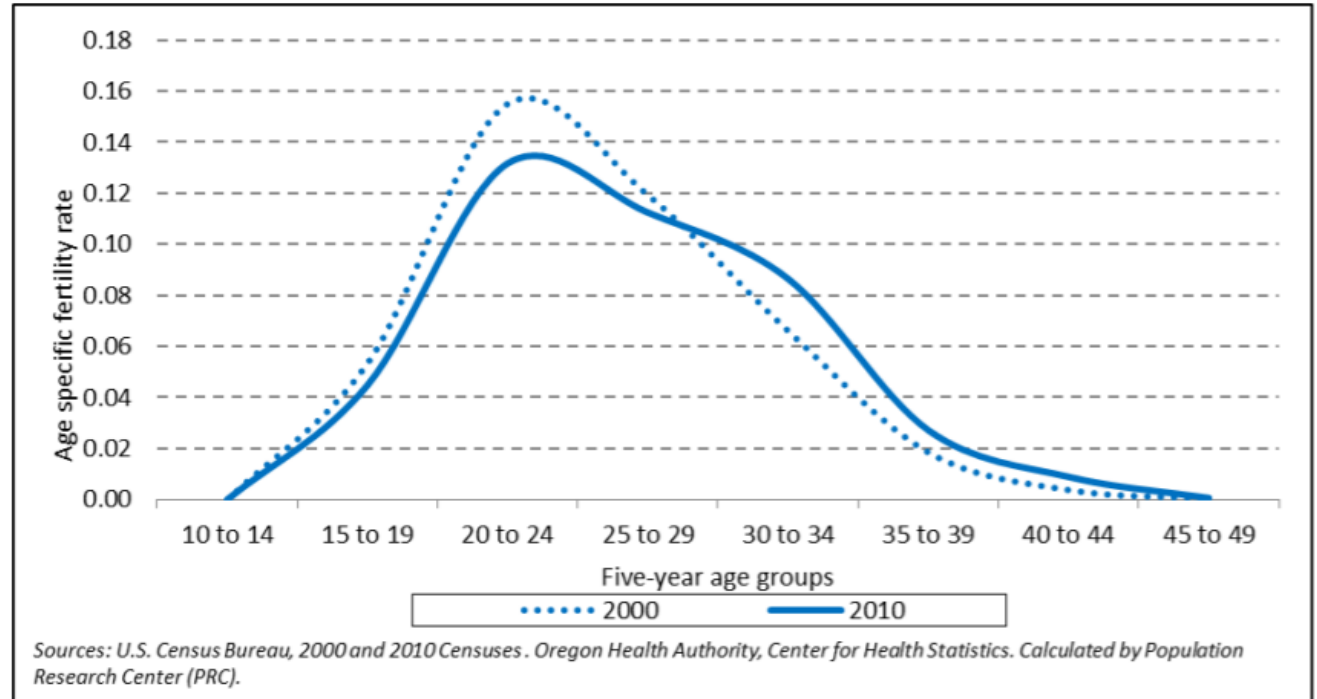
This table shows the race and ethnicity breakdown for Lincoln County in 2000 and 2010. The Hispanic population showed the largest positive change between 2000 and 2010. Population of “White alone” decreased slightly. The Native Hawaiian and Pacific Islander population decreased by 21.2%, further reducing the already small population for this race group.

Hispanic or Latino and Race	2000		2010		Absolute Change	Relative Change
	<i>Total population</i>	44,479	100.0%	46,034	100.0%	1,555
Hispanic or Latino	2,119	4.8%	3,655	7.9%	1,536	72.5%
Not Hispanic or Latino	42,360	95.2%	42,379	92.1%	19	0.0%
White alone	39,260	88.3%	38,863	84.4%	-397	-1.0%
Black or African American alone	113	0.3%	159	0.3%	46	40.7%
American Indian and Alaska Native alone	1,296	2.9%	1,433	3.1%	137	10.6%
Asian alone	412	0.9%	482	1.0%	70	17.0%
Native Hawaiian and Other Pacific Islander alone	66	0.1%	52	0.1%	-14	-21.2%
Some Other Race alone	31	0.1%	36	0.1%	5	16.1%
Two or More Races	1,182	2.7%	1,354	2.9%	172	14.6%

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

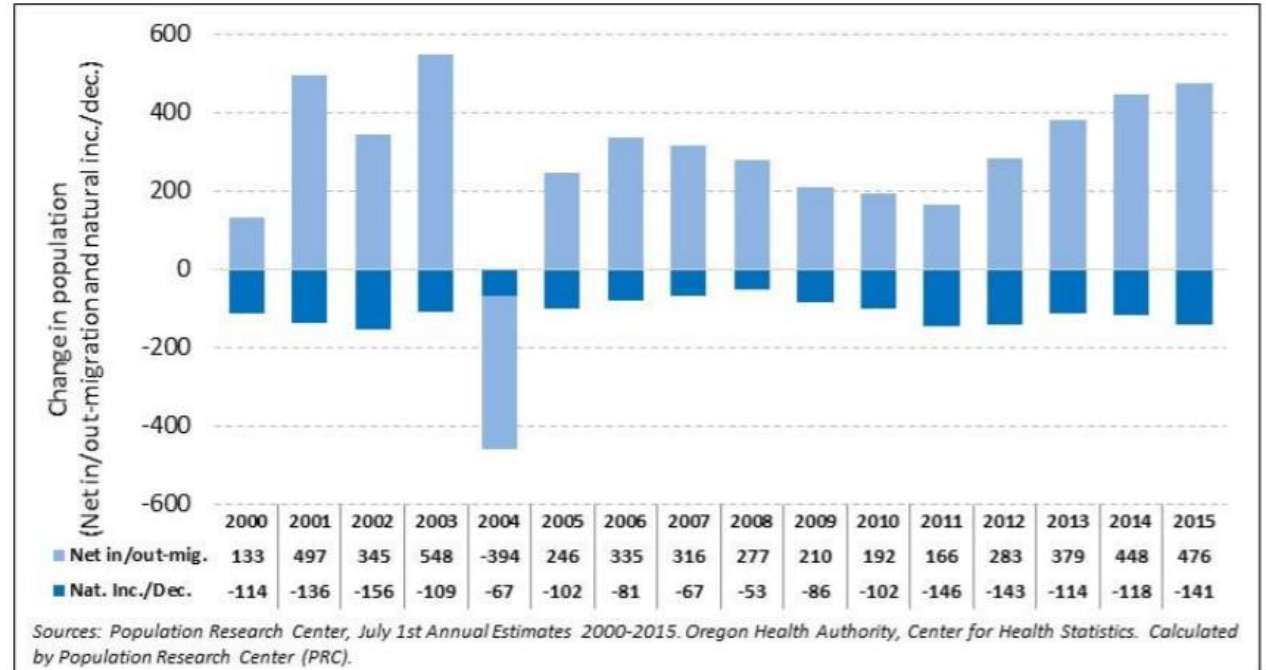
Additional Historical Trends

This figure shows age specific fertility rates for Lincoln County in 2000 and 2010. The fertility rate decreased in the 20-29 age group in 2010 but increased in the 30-34 age group.



Additional Historical Trends

These figures showed the components of change (births, deaths, and net migrants) for Lincoln County during 2000-2015. Net migration was at the highest number in 2003. The absolute value of net migration has been higher than the natural increase/decrease for most of the years from 2000 to 2015. There has not been a natural increase since 2000.



Additional Historical Trends

This table shows the total housing units for Lincoln County and each UGB during 2000 and 2010. Housing growth was fastest in Depoe Bay and Yachats.

	2000	2010	AAGR (2000-2010)	Share of County 2000	Share of County 2010
<i>Lincoln County</i>	26,889	30,610	1.3%	100.0%	100.0%
Depoe Bay	908	1,147	2.4%	3.4%	3.7%
Lincoln City	6,168	7,284	1.7%	22.9%	23.8%
Newport	5,360	5,937	1.0%	19.9%	19.4%
Siletz	468	512	0.9%	1.7%	1.7%
Toledo	1,550	1,583	0.2%	5.8%	5.2%
Waldport	1,217	1,342	1.0%	4.5%	4.4%
Yachats	619	807	2.7%	2.3%	2.6%
Outside UGBs	10,599	11,998	1.2%	39.4%	39.2%

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

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

Additional Historical Trends

This table shows average household size and occupancy rate in 2000 and 2010. Household size either decreased or remain unchanged between 2000 and 2010 for all UGBs.

	Persons Per Household (PPH)			Occupancy Rate		
	2000	2010	Change 2000-2010	2000	2010	Change 2000-2010
<i>Lincoln County</i>	2.3	2.2	-0.1	71.8%	67.1%	-4.6%
Depoe Bay	2.0	2.0	-0.1	64.3%	62.1%	-2.2%
Lincoln City	2.2	2.1	-0.1	63.8%	57.0%	-6.8%
Newport	2.2	2.2	0.0	81.4%	78.1%	-3.4%
Siletz	2.7	2.7	0.0	89.7%	93.2%	3.4%
Toledo	2.6	2.6	0.0	89.4%	90.7%	1.3%
Waldport	2.2	2.1	-0.2	80.8%	79.7%	-1.0%
Yachats	1.9	1.7	-0.1	53.8%	49.6%	-4.2%
Outside UGBs	2.3	2.2	-0.1	68.8%	64.0%	-4.8%

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

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