Oregon Population Forecast Program
Regional Forecast Meeting - September 23, 2014

Presentation by

Population Forecast Program Team

KLAMATH COUNTY
Oregon Population Forecast Program
Project Team

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*Research Assistant*

**Carson Gorecki,**
*Research Assistant*
Agenda

• Population Research Center (PRC)
• Forecast Program overview
  – Forecast regions
  – Schedule
  – Deliverables
  – Forecasting methods and data sources
  – Process for local input
• Demographic and economic trends
PRC Research areas:

- Oregon Population Forecast Program
- Oregon Population Estimates Program
- Oregon State Data Center (SDC)
- Demographic Research and Advisory Services
- Applied Demography Instruction
Forecast Program Overview

PRC Website: http://www.pdx.edu/prc

Click here for more information on OPFP

The Population Research Center (PRC) is an interdisciplinary public service, research, and training unit for population-related data and research for the State of Oregon. The mission of PRC is to provide population data, information, and research analysis for Oregon and its communities. Center staff engage in a variety of demographic activities, including the Oregon State Data Center, the Oregon Population Estimates Program, and a variety of commissioned population projects. PRC staff also teach in the Nobad A. Toulan School of Urban Studies and Planning, supporting a graduate concentration in applied demography and a graduate certificate program in applied demography.

New at PRC:

Estimates questionnaire goes online:
We are converting to an electronic process of data collection beginning in summer of 2013.
The link to the web-based annual questionnaire will be emailed to the contact person we have on file from previous completed forms.

If you are the estimates contact person for your city or county, watch your email for the 2013 Annual Housing Unit and Population Questionnaire. Instructions will be provided with the email and questionnaire.

How we grow: see the new annual population tables for 2012!
Forecast Program Overview

Forecast Program: 4-Year Schedule

Year 1: Program Development

Year 2: Update County-Level Forecasts
- 1st Set of Coordinated City-County Forecasts

Year 3: Update County-Level Forecasts
- 2nd Set of Coordinated City-County Forecasts

Year 4: Update County-Level Forecasts
- 3rd Set of Coordinated City-County Forecasts
Coordinated Forecast: Annual Schedule

**August**
- Update input data

**September**
- Build models
- Hold 1st public meeting

**October**
- Distribute data collection surveys
- Update county-level forecasts

**November - January**
- Compile local information
- Prepare Preliminary Forecasts

**February**
- Release Preliminary Forecasts
- Hold 2nd public meeting

**March**
- Issue Proposed Population Forecast
- Begin Review period

**June**
- Issue Final Population Forecast

**Forecast Program Overview**
Deliverables

• County-level forecasts
  – 50 year horizon
  – 5-year age cohorts by sex

• Coordinated city-level forecasts
  – UGB forecasts
  – Total population

• Report containing:
  – Information for all incorporated cities and counties
  – Summaries of historic and future demographic trends, assumptions about future growth, and a compilation of information collected from city and county officials and the public
  – Short technical description of methods employed to produce the forecast
Process for Population Forecasts

- Develop demographic models using historic and recent data
- Analyze past and current population trends
  - Reasons for change, continuous or short-term?
- Gather information about existing and planned future housing, and about population change
  - Housing developments
  - Construction of new GQ facilities
  - New employers
- Make assumptions about future housing and population change
- Revise forecasts on a regular basis
Population Forecast Methods

Primary Models for this Forecast

• **Cohort-Component Method**
  - Relies on Age-Sex Schedules of demographic behavior
  - Population pyramid displays age structure
  - Mortality – Fairly constant over time
  - Fertility – Decreased teen fertility, older mothers and Latino births
  - Migration Rates – Subject to greater fluctuation than mortality and fertility and more unpredictable
  - Generally used for areas with larger populations
Population Forecast Methods
Primary Models for this Forecast

- Housing Unit Method
  - For smaller cities and unincorporated areas, outside of UGBs
    - Housing unit growth – Trend actual, trend county shares
    - Housing unit type (single-/multi-family)
    - Household composition
    - Persons Per Household (PPH)
    - Occupancy Rates
    - Add Group Quarters Population
  - Controlled to Cohort-Component Model results for county
Population Forecast Methods
Primary Models for this Forecast

- Housing Unit Method, con’t.
  - Fluctuations in housing unit growth follow economic trends with exceptions
  - Persons Per Household (PPH)
    - Factors that influence PPH: Race/Ethnicity, Age (fertility), Economy
    - Generally decreasing in U.S.
  - Occupancy Rates - Seasonal Housing
Population Forecast Methods
Other Models/Methods to Consider

- For comparison and to serve as a check
- Shift-Share and other Ratio Methods
- Trend Extrapolation
- Simple Economic/Employment Model
- Additional Housing Unit Models (in addition to CC models)
Population Forecast Data Sources

Primary Sources:
• U.S. Census Bureau, Decennial Censuses
• Population Research Center (PRC), Oregon Population Estimates Program
• Oregon Health Authority, Center for Health Statistics
• Incorporated counties, Assessors Office
• Incorporated cities, Community Development/Planning Department
• Oregon Geospatial Enterprise Office (GEO), Spatial Data Library

Secondary Sources:
• State of Oregon, Office of Economic Analysis
• U.S. Census Bureau, American Community Survey (ACS)
• U.S., Internal Revenue Service
• State of Oregon, Department of Revenue
• Oregon Department of Education
• U.S., Centers for Medicare and Medicaid Services
• State of Oregon, Employment Department
Process for Local Input

• Hold regional meetings
  – Receive feedback on:
    • Historical and current demographic and economic trends
    • Local land use and growth management planning

• Local survey
  – Collect local observations
    • Population composition; recent change
    • Planned housing development plus group quarters facilities
    • Future employers
    • Infrastructure
      – Existing capacity
      – Planned expansion
    • Anything that might promote or hinder population growth
  – Survey will be posted on website and emailed to each jurisdiction
  – Issued in October, 2014
Demographic and Economic Trends

Klamath County
Demographic and Economic Trends

Klamath County – Historical Census Population


Note: Average annual growth rate is used for simplicity. In actuality the rate is an annualized rate calculated with this formula = [(Year1/Year2)^(1/10)] - 1
Demographic and Economic Trends

Klamath County – Recent Annual Population Trend – July 1st Estimate

Demographic and Economic Trends

Klamath County - Natural Increase and Net Migration

## Klamath County and Incorporated City Population

<table>
<thead>
<tr>
<th></th>
<th>Total Population</th>
<th>Share of County Population</th>
<th>Average Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klamath County</td>
<td>63,775</td>
<td>66,380</td>
<td>66,810</td>
</tr>
<tr>
<td>Bonanza</td>
<td>415</td>
<td>415</td>
<td>455</td>
</tr>
<tr>
<td>Chiloquin</td>
<td>715</td>
<td>734</td>
<td>735</td>
</tr>
<tr>
<td>Klamath Falls</td>
<td>19,460</td>
<td>20,840</td>
<td>21,495</td>
</tr>
<tr>
<td>Malin</td>
<td>640</td>
<td>805</td>
<td>815</td>
</tr>
<tr>
<td>Merrill</td>
<td>897</td>
<td>844</td>
<td>845</td>
</tr>
<tr>
<td>Unincorporated</td>
<td>41,648</td>
<td>42,742</td>
<td>42,465</td>
</tr>
</tbody>
</table>

Demographic and Economic Trends

Klamath County - City Share of Population

Demographic and Economic Trends

Klamath County - City Share of Population

Klamath County – Distribution by Age of Total Population

2000

Male
Female

85+
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4

Percent of total population

2010

Male
Female

85+
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4

Percent of total population

Demographic and Economic Trends

Klamath County – 5yr Migration Rates for Total Population, 2000-2010

Migration rate (Incomers per person)

Five year age group

0 to 4
5 to 9
10 to 14
15 to 19
20 to 24
25 to 29
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85+

Oregon – 5yr Migration Rates for Total Population, 2000-2010

Migration rate (Incomers per person)

Five year age group

0 to 4
5 to 9
10 to 14
15 to 19
20 to 24
25 to 29
30 to 34
35 to 39
40 to 44
45 to 49
50 to 54
55 to 59
60 to 64
65 to 69
70 to 74
75 to 79
80 to 84
85+

Klamath County – Age Specific Fertility Rates

<table>
<thead>
<tr>
<th>Five year age group</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-14</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>30-34</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>35-39</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>45-49</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Demographic and Economic Trends

Klamath County and Oregon – Age Specific Fertility Rates (2010)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10-14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td></td>
<td></td>
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<tr>
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<tr>
<td>25-29</td>
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<td>30-34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Demographic and Economic Trends

Klamath County – Age Specific Survival Rates

Klamath County and Oregon – Age Specific Survival Rates

Klamath County - Dependency Ratio


Note: Dependency Ratio = \[\frac{(\text{Population Age 0-14}) + (\text{Population Age 65 or older})}{(\text{Population Age 15-64})}\] x 100
## Demographic and Economic Trends

### Klamath County

#### Hispanic or Latino and race 2000 2010 Change

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2010</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total population</strong></td>
<td>63,775</td>
<td>66,380</td>
<td>2,605</td>
</tr>
<tr>
<td><strong>Hispanic or Latino</strong></td>
<td>4,961</td>
<td>6,915</td>
<td>1,954</td>
</tr>
<tr>
<td><strong>Not Hispanic or Latino</strong></td>
<td>58,814</td>
<td>59,465</td>
<td>651</td>
</tr>
<tr>
<td><strong>White alone</strong></td>
<td>53,659</td>
<td>53,822</td>
<td>163</td>
</tr>
<tr>
<td><strong>Black or African American alone</strong></td>
<td>362</td>
<td>394</td>
<td>32</td>
</tr>
<tr>
<td><strong>American Indian and Alaska Native alone</strong></td>
<td>2,443</td>
<td>2,407</td>
<td>-36</td>
</tr>
<tr>
<td><strong>Asian alone</strong></td>
<td>482</td>
<td>615</td>
<td>133</td>
</tr>
<tr>
<td><strong>Native Hawaiian and Other Pacific Islander alone</strong></td>
<td>72</td>
<td>68</td>
<td>-4</td>
</tr>
<tr>
<td><strong>Some Other Race alone</strong></td>
<td>96</td>
<td>63</td>
<td>-33</td>
</tr>
<tr>
<td><strong>Two or More Races</strong></td>
<td>1,700</td>
<td>2,096</td>
<td>396</td>
</tr>
</tbody>
</table>

Klamath County - Housing Units

Source: U.S. Census Bureau, 2000 and 2010 Decennial Census.
### Demographic and Economic Trends

<table>
<thead>
<tr>
<th></th>
<th>Persons Per Household (PPH)</th>
<th>Occupancy Rate</th>
<th>Percent Group Quarters</th>
<th>Percent Seasonal Housing*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oregon</td>
<td>2.51</td>
<td>2.47</td>
<td>91.8%</td>
<td>90.7%</td>
</tr>
<tr>
<td>Klamath County</td>
<td>2.49</td>
<td>2.40</td>
<td>87.3%</td>
<td>83.2%</td>
</tr>
<tr>
<td>Bonanza</td>
<td>2.99</td>
<td>2.73</td>
<td>91.4%</td>
<td>89.9%</td>
</tr>
<tr>
<td>Chiloquin</td>
<td>2.79</td>
<td>2.61</td>
<td>88.6%</td>
<td>78.9%</td>
</tr>
<tr>
<td>Klamath Falls</td>
<td>2.36</td>
<td>2.35</td>
<td>90.8%</td>
<td>89.0%</td>
</tr>
<tr>
<td>Malin</td>
<td>3.19</td>
<td>3.16</td>
<td>92.2%</td>
<td>91.7%</td>
</tr>
<tr>
<td>Merrill</td>
<td>2.61</td>
<td>2.73</td>
<td>90.5%</td>
<td>88.8%</td>
</tr>
<tr>
<td>Unincorporated</td>
<td>2.53</td>
<td>2.40</td>
<td>85.5%</td>
<td>80.5%</td>
</tr>
</tbody>
</table>


*Note: Percent Seasonal Housing is the proportion of total housing units in 2010 that are identified as vacant “for seasonal, recreational, or occasional use.”*
Demographic and Economic Trends

Klamath County - Employment Growth since 1991

Calculated by Population Research Center (PRC).
Demographic and Economic Trends

Klamath County and Oregon - Unemployment Rate


Note: The rate represents the percent of the labor force seeking work but not employed.
Demographic and Economic Trends

Klamath County - Top Three Industries by Average Quarterly Employment in 2013

- Recession
- Health Care and Social Assistance
- Manufacturing
- Retail Trade


Note: The quarterly employment data used in this chart is not seasonally adjusted.
Local Input and Additional Information

• Questions?
• Discussion time