Population Estimates

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Alaska Department of Labor and Workforce Development
Population Estimates: What We Provide

- Annual state, borough, census area, city and census designated place resident population estimates.
- State, borough and census area estimates by age, sex, race and ethnicity.
- Alaska is very fortunate to have data from the Permanent Fund Dividend to use in population estimates.
Population Estimates: What We Provide

• New estimates of total population for all areas in the state are available each January.
• Population characteristics (age, sex, race, ethnicity) are available in May/June.
Population Estimates: Uses

• The population estimates are used for a wide range of purposes, including:
  – Distribution of resources
  – Survey weighting
  – Research and planning
  – Updating of population projections
Population Estimates:
How We Make Them (briefly)

• For total population we begin with the last decennial census (2010 Census).
• Create ratios of census counts to PFD recipients in the census year, and carry them forward each year until the next census.
• Adjust to a separately estimated state total.
• There are several additional procedures to account for military, prisons, dorms, etc.
Population (PFD compared to Estimates)

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Population by Age and Sex
(2010 PFD compared to 2010 Census)

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Population Estimates: How We Make Them (briefly)

- Race and ethnicity are not included in the PFD data.
- In the past we made race and ethnicity estimates based on census race/ethnicity counts and post-census migration.
- We’re currently looking at combining our estimates with CDC and Census numbers to get the best of everything.
Population Estimates: Population Over Time

- Alaska’s population has changed dramatically over the past century due to “natural increase” and “net migration.”
- Both the total population and the composition of the population have seen dramatic shifts.
Alaska Population, 1946-2011

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Components of Population Change for Alaska, 1947-2011

Year

Thousands
0 10 20 30 40

1947-1948 End of WWII
1955-1956 Korean War
1968-1969 Vietnam
1975-1976 Pipeline Construction
1980-1981 Oil Boom
1991-1992 Oil Bust
1992-1993 Base closures
1993-1994 Great Recession

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Alaska Population by Age and Sex, 2000
Source: US Census Bureau and Alaska Department of Labor and Workforce Development
Population Estimates:
Population Across the State

• Rural parts of the state (which often are primarily Alaska Native) generally have net migration losses, but often grow due to natural increase.

• Population centers in Alaska typically have a lower rate of natural increase, but gain movers from rural areas, and also have larger migration flows from outside the state.
Population by Labor Market Region

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Average Annual Rate of Net Migration by Borough/Census Area, 2000-2010

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Population Estimates

Thank you!

Contact: eddie.hunsinger@alaska.gov

More information:
http://laborstats.alaska.gov/
Population Projections

David Howell
Alaska Department of Labor and Workforce Development
Population Projections

What will be covered

Statewide population projections.
Borough population projections.
Population Projections

What These Projections Do and Don’t Offer

Do offer projected future population levels for Alaska, based on recent fertility, mortality and migration rates.

Do not offer a glimpse into the future.
Population Projections

History

A brief overview of Alaska’s population history
Components of Population Change for Alaska, 1947-2010

Thousands

Year


Korean War
End of WWII
Vietnam War
Pipeline Construction
Oil Boom
1989-91 Recovery
Great Recession
Pipeline Completed
Oil Bust
Base closures

Natural Increase
Net Migration

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Population Projections

Statewide Projection Methods

“Cohort Component” method with scenarios.
The Cohort-Component Method

Year 2010 Age | Year 2020 Age
0 | 0
10 | 10
20 | 20
30 | 30
40 | 40
50 | 50
60 | 60
70 | 70
80 | 80
90 | 90

Adjustment for Births, Migrations, Deaths
When projecting can be certain of a few things

Ten years from now we will all be ten years older. The chances of dying increase as we age. The chances of having a child are higher at certain ages. The chances of migrating are higher at certain ages.
Population Projections

Age and Aging

Key to understanding population change.
Estimated Alaska Population by Age and Sex

2000

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex

2001

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex
2002

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex 2003

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex
2004

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex
2005

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex
2006

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex
2008

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Estimated Alaska Population by Age and Sex
2010

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population Projections

Births
The Total Fertility Rate (TFR)

The number of children that a woman would have in her lifetime.

A very useful measure when projecting.

For the U.S., assuming no migration, the TFR needs to be at 2.1 to replace current population.
Total Fertility Rate, Alaska and the United States
1990-2010 Estimates

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section and U.S. National Center for Health Statistics
Total Fertility Rate, Alaska Native and Alaska Total
1985-2010 Point Estimates, 2015-2035 Projections

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population Projections

Migration
Population Projections

The Net Migration Ratio

Gives the annual population change by migration, as a fraction of the total population.
Net Migration by Age
Alaska, Stylized

Come to work in Alaska

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Net Migration by Age
Alaska, Stylized

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Net Migration by Age
Alaska, Stylized

Follow Mom and Dad

Come to work in Alaska

Off to new places, college...

Moving south

Age

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Alaska Net Migration Ratio

1985-2010 Estimated, 2011-2035 Projected

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population Projections

Mortality
Population Projections

Life Expectancy

The expected length of life.
U.S. Female Life Expectancy
1970-2010 Estimated, 2011-2030 Projected

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section and U.S. National Center for Health Statistics
Alaska and U.S. Female Life Expectancy
1970-2010 Estimated, 2011-2035 Projected

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section and U.S. National Center for Health Statistics
Population Projections

Statewide Results
Alaska Total Population
1985-2010 Estimated, 2011-2035 Projected

Thousands

Baseline Scenario
Low Scenario
High Scenario

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Alaska Annual Net Migrants
1985-2010 Estimated, 2011-2035 Projected

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Alaska Annual Births
1985-2010 Estimated, 2011-2035 Projected

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Alaska Annual Deaths
1985-2010 Estimated, 2011-2035 Projected

Thousands

Baseline Scenario
Low Scenario
High Scenario

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population Projections

Projected Population by Age and Sex
Estimated Alaska Population by Age and Sex
2010

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Projected Alaska Population by Age and Sex 2025

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Projected Alaska Population by Age and Sex
2030

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Projected Alaska Population by Age and Sex
2035

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Projected Alaska Population 0-17
2010-2035

Thousands

Baseline
Low
High

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Projected Alaska Population 65+
2010-2035

Thousands

Baseline
Low
High

2010  2015  2020  2025  2030  2035

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Alaska Baseline Projected Population by Selected Age Groups, Percent Distribution

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population Projections

Borough, Census Area & Regional Projections
Population Projections

Methods

Cohort Component, same as the state, but “deterministically” and the final output is “controlled” to the baseline state projection.
Population Projections

Total Fertility Rates by Borough and Census Area

Highest in rural areas with high proportion of Alaska Natives.

Lowest (in some cases less than 2.0) in Southeast.
Population Projections

Net Migration Rates by Borough and Census Area

Very unpredictable, and also very important to knowing the future.

By far the highest is in Mat-Su.

Roughly zero or negative in most other places, but age profile of migration matters a lot here.
Population Projections

Life Expectancy by Borough and Census Area

Not possible to determine directly, as data is so limited.

Estimated based on the proportion Alaska Native and non-Native in the borough.
Population Projections

Results
Births, Alaska Economic Regions

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Births, Alaska Economic Regions

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Deaths, Alaska Economic Regions

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Deaths, Alaska Economic Regions

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Migrants, Alaska Economic Regions

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Migrants, Alaska Economic Regions

Sources: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population by Labor Market Region
1960-2035

Source: Alaska Department of Labor & Workforce Development, Research and Analysis Section
Population Projections

Thank You!

Contact: david.howell@alaska.gov

More information and data:
http://labor.alaska.gov/research/
Alaska Department of Labor and Workforce Development Population Meeting
April 11, 2012

Migration

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Migration: 
Data sources (PFD)

- PFD-based data. Has large in-state coverage, and information on age and sex, but has a lag on new migrants to the state due to PFD eligibility requirements.
**Migration: Data sources (IRS)**

- IRS-based data. Provides information on migration between all US county-equivalents, but lower coverage (~85%) and no characteristic information.
Migration: Data sources (ACS)

• ACS data. Provides characteristic information but is based on a very small sample and is based on five year averages for most areas in the state.
Migration: Gross and Net

• Each year Alaska sends and receives tens of thousands of movers. The count of these movers, or migrants, is referred to as “gross migration.”

• Subtracting the count of out-migrants from the count of in-migrants gives us “net migration.”
Components of Population Change for Alaska, 1947-2011

Thousands

End of WWII, Korean War, Pipeline Construction, Oil Boom, 1989-91 Recovery, Great Recession, Base closures, Oil Bust, Vietnam, Pipeline Completed

Year

Natural Increase, Net Migration

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
IRS Exemption-Based State to State Migration for Alaska, 2000-2010

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
PFD-Based Migration To and From Alaska by Age and Sex,
2000-2010 Average Annual

Note: Adjusted for one year delay in eligibility for PFD.
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
PFD-Based Net Migration by Age, 2000-2010
Average Annual

Note: Adjusted for one year delay in eligibility for PFD.

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Percent of Alaskans who were in Alaska at age 18 and again at Age 23, 1995-2010, based on PFD data

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Percent of Alaskans who Applied for a PFD In the State at Age 18, And Then Again Five, Ten, And Fifteen Years Later, 1990-2010

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Percent of Alaska Residents Born in Alaska

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
PFD-Based Migration To and From Alaska by Region, 2000-2010 Average Annual

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Net Migration by Borough/Census Area, 2000-2010 Average Annual

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Migration (PFD-based Anchorage and Mat-Su)

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
PFD-Based Migration To and From Majority Native Areas, 2000-2010 Average Annual

Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section
Migration

Thank you!

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