Current and future demographics of the Veteran population, 2014–2024

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Goals

- Project the Veteran population from 2014 to 2024 and their geographic distribution
  - Surveys collect information on Veterans, but no full national accounting since 2000 Census

- Describe the demographic characteristics of Veterans
  - Age, sex, race/ethnicity, service era, geographic distribution

Data

- 2000 Census is used as the baseline Veteran population
  - Age, sex, race/ethnicity, service era
- U.S. Defense Manpower Data Center (DMDC)
  - Age, sex, race/ethnicity, location of accession, anticipated loss date
- American Community Survey (ACS)
  - 5-year estimates: 2005–09, 2009–13

Population projection

- Standard cohort component model
  - U.S. Census Bureau's Rural and Urban Projection software
  - 2000 Census provides counts of Veterans
- "Births" and mortality
  - New Veterans (DMDC): 2000–24
  - Apply mortality rates (VA, CDC): 2000–24
  - Estimate national Veteran population: 2005–24
- Distribute national projections into PUMAs
- Adjust initial projections by migration

“Births” and mortality

2000 Census & 2000 DMDC Population data

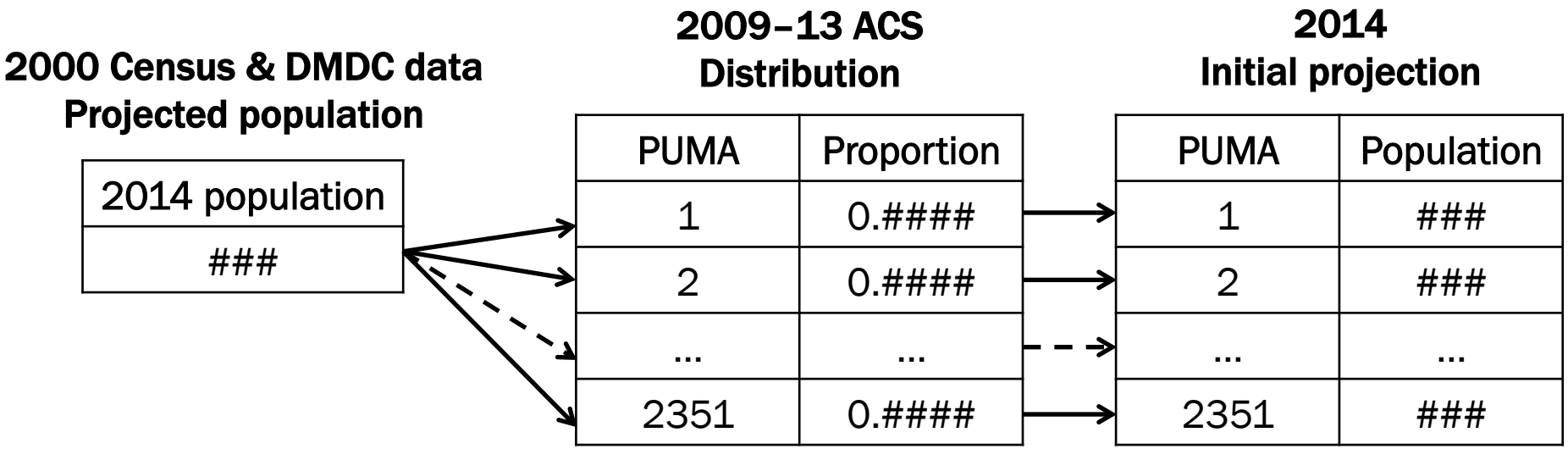
Each cell has number of Veterans by 5-year age group, sex, race/ethnicity, service era

- Apply mortality rates from 2000 to 2001
- Add DMDC data in 2001
- Apply mortality rates from 2001 to 2002
- Add DMDC data in 2002
- …

2000 population
###

2001 population	…	2014 population	…	2024 population
###	…	###	…	###

Distribute national projection into PUMAs: 2014 example



- Assumption: ACS captures geographic distribution
- By 5-year age group, sex, race/ethnicity, service era

Migration: gravity models

- Disaggregate PUMA groups in previous year
  - Correspondence files in IPUMS-USA website
- Convert 2009-11 PUMAs into 2010 codes
  - Engine by Missouri Census Data Center
- Zero-inflated Poisson regressions (2009-13)
  - Function of age, sex, race/ethnicity, service era, distance, populations at origin and destination
- Apply predicted rates to 2014 projection
  - Generate number of in- and out-migrants
  - Adjust in-migrants to generate null net migration

Migration: final projection

2014
Number of in-migrants
(estimated with ACS rates and initial projection)

PUMA	Number of in-migrants
1	###
2	###
…	…
2351	###

2014
Number of out-migrants
(estimated with ACS rates and initial projection)

PUMA 1-year ago	Number of out-migrants
1	###
2	###
…	…
2351	###

2014
Initial projection

PUMA	Population
1	###
2	###
…	…
2351	###

2014
Final projection
(after migration)

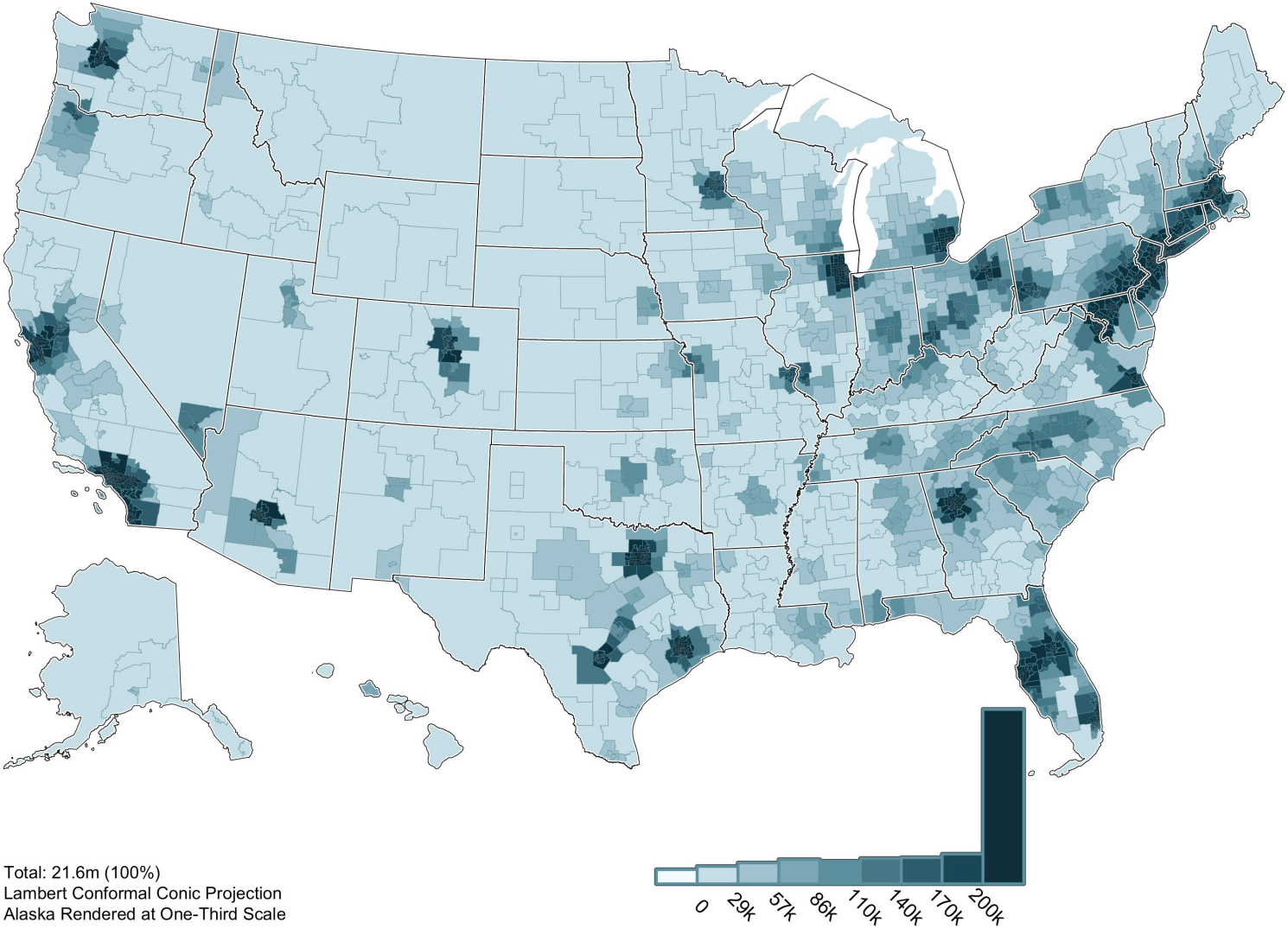
PUMA	Population	Net migration	Population after mig.
1	###	+/- ###	###
2	###	+/- ###	###
…	…	…	…
2351	###	+/- ###	###

- Iterate this process for subsequent years
- Use final 2014 projection as baseline for 2015
- Apply migration to get final 2015 distribution
- Adjust marginal counts with weight calibration: iterative proportional fitting (raking)
- Process continues through 2024

Main results

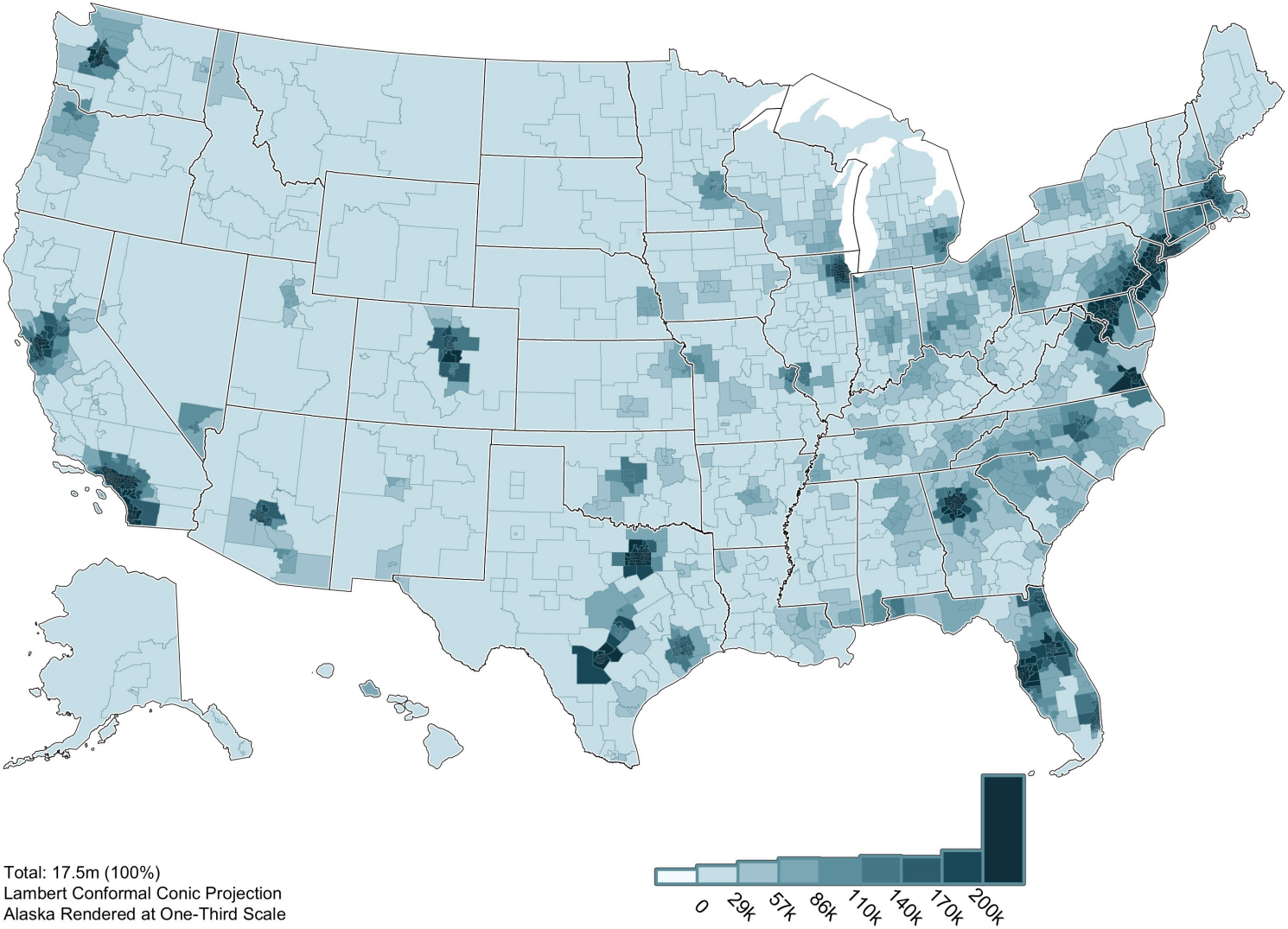
- Veterans will decrease by 19%
  - 21.6 million (2014), 17.5 million (2024)
- Mean age will increase slightly
  - Higher proportion of both older and younger
- Modest changes by sex and race/ethnicity
  - Males: 92% (2014), 89% (2024)
  - White: 80% (2014), 74% (2024)
- Service era composition will change
  - Vietnam: 32% (2014), 29% (2024)
  - Gulf War, Post-9/11: 26% (2014), 41% (2024)

Total Veteran population, 2014



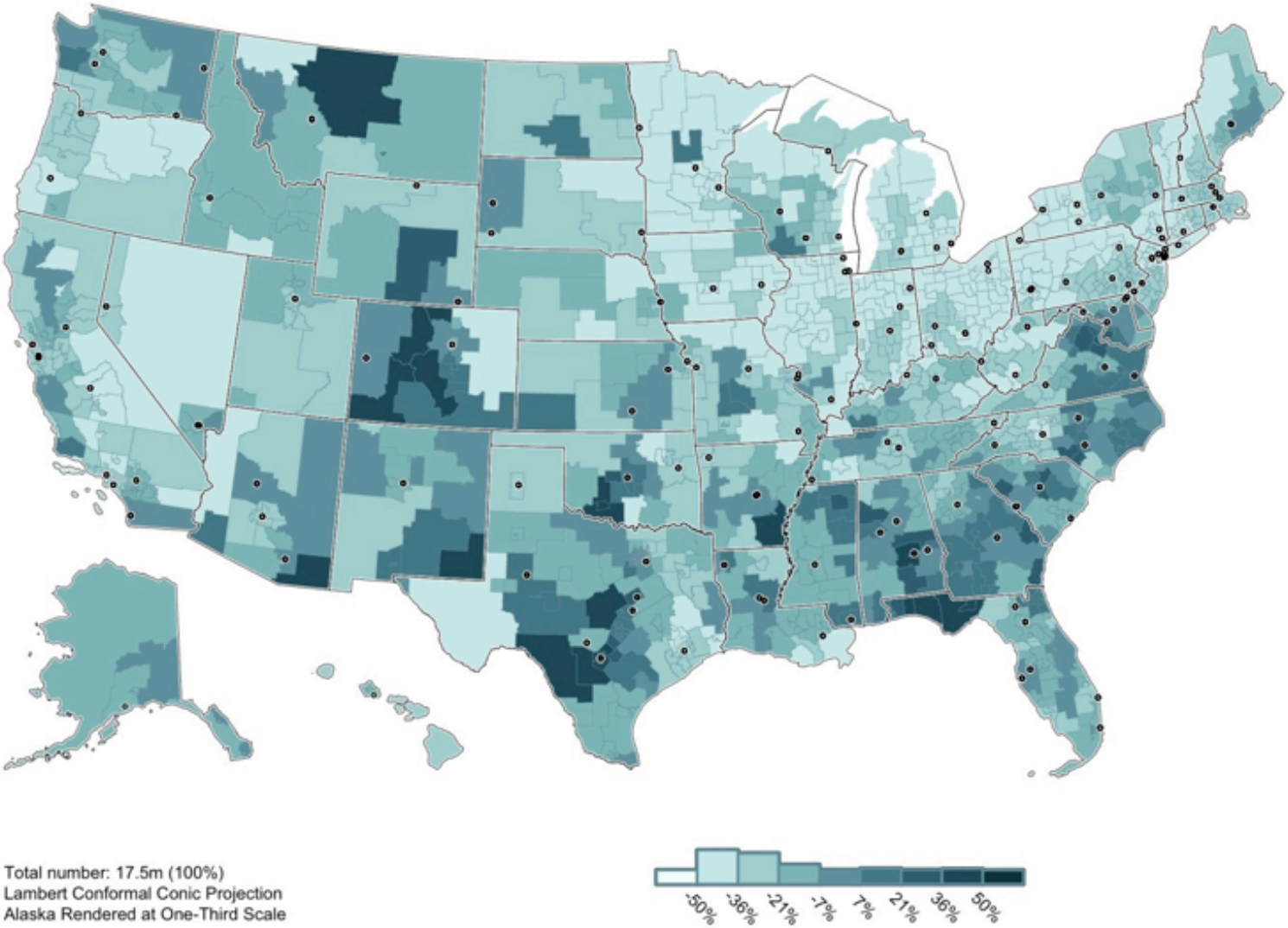
Total: 21.6m (100%)
Lambert Conformal Conic Projection
Alaska Rendered at One-Third Scale

Total Veteran population, 2024



Total: 17.5m (100%)
Lambert Conformal Conic Projection
Alaska Rendered at One-Third Scale

Percent Veteran population change and VA medical centers, 2014–24



Final considerations

- Concentration in urban areas
  - Ohio River Valley and upper Midwest: proportion of Veterans will diminish
  - Southwest will not be well matched by existing VA medical centers
- Migration is less frequent among Veterans than non-Veterans
  - Will not play substantial role in 2014–24 geographic distribution
- Projection methods can be applied to other contexts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