

**Florida Water and Climate Alliance
2016 Winter Workshop
at the
Peace River Facility
Arcadia, Florida**

Session 2-
9:30 – 10:45 AM

Water Supply Planning
in the Context of a Changing Environment

November 16, 2016

Demographic Changes and What it Means for Water Suppliers

dem·o·graph·ics

/ˌdemeˈɡrafiks/

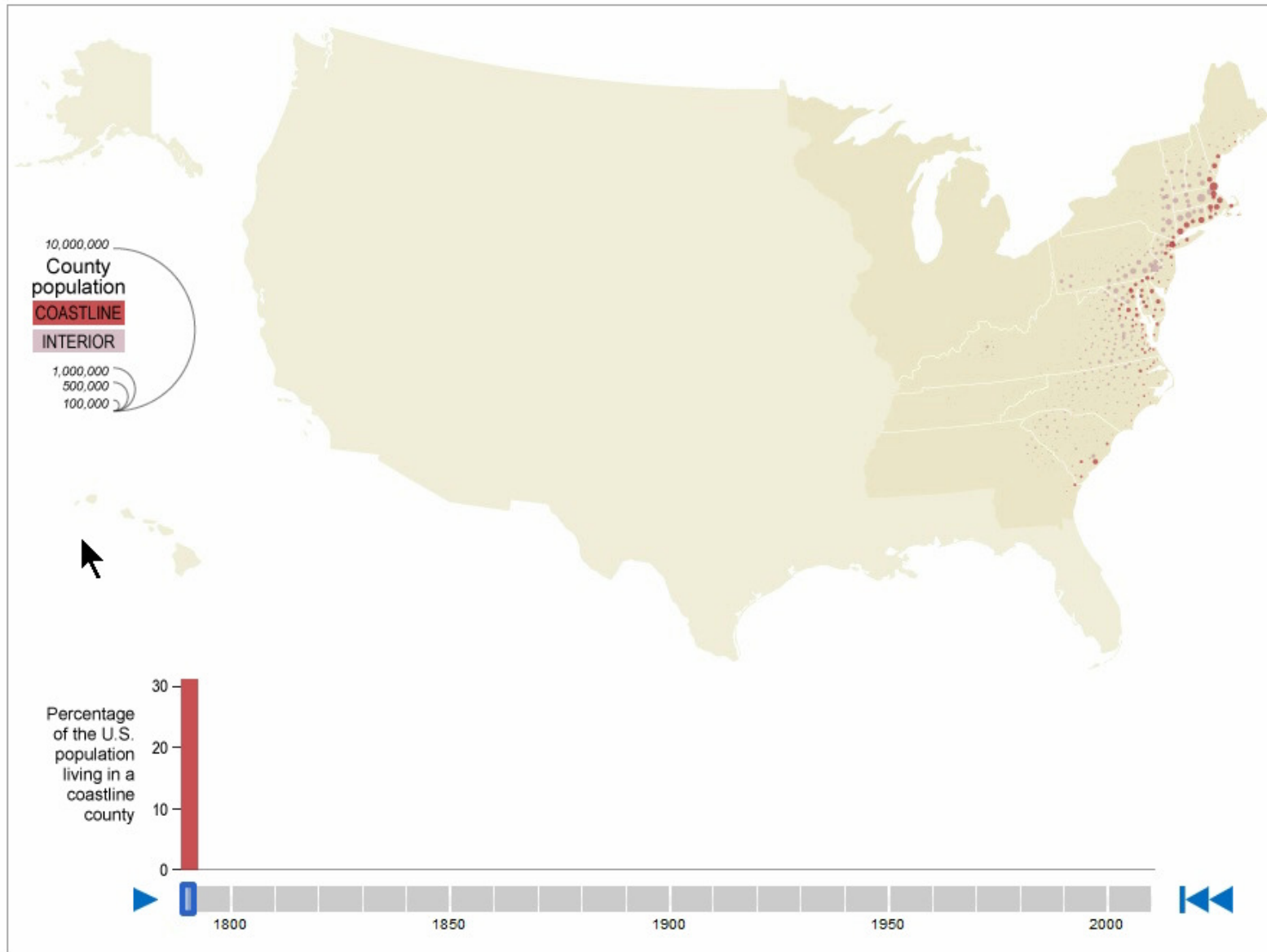
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statistical data relating to the population and particular groups within it.




Coastline County Population











September 6, 2012



2015 Population Estimates

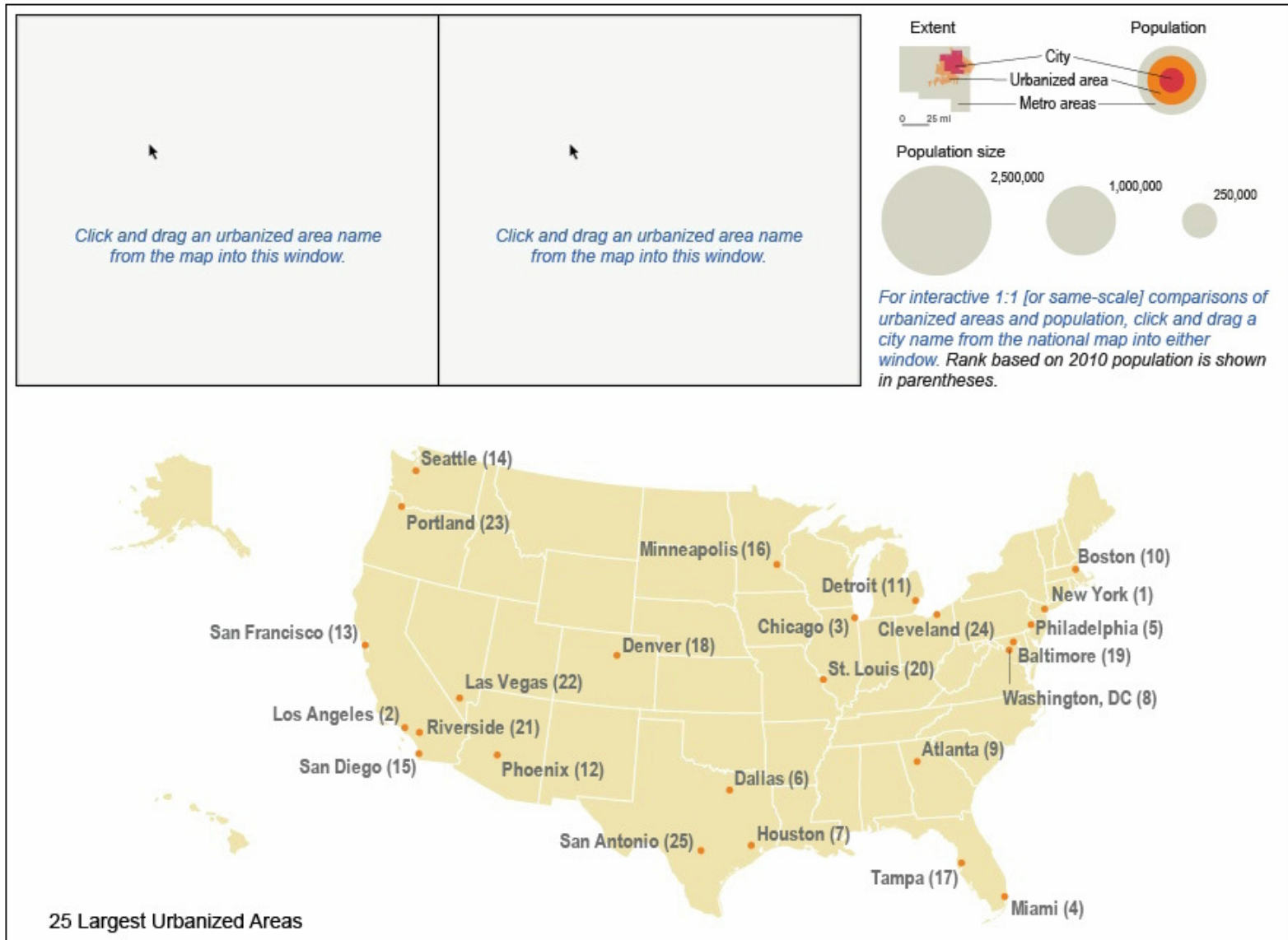
- US Population in 2015 ~ 321 million
- Florida's population exceeded 20 million
 - Surpassed New York as 3rd most populous state



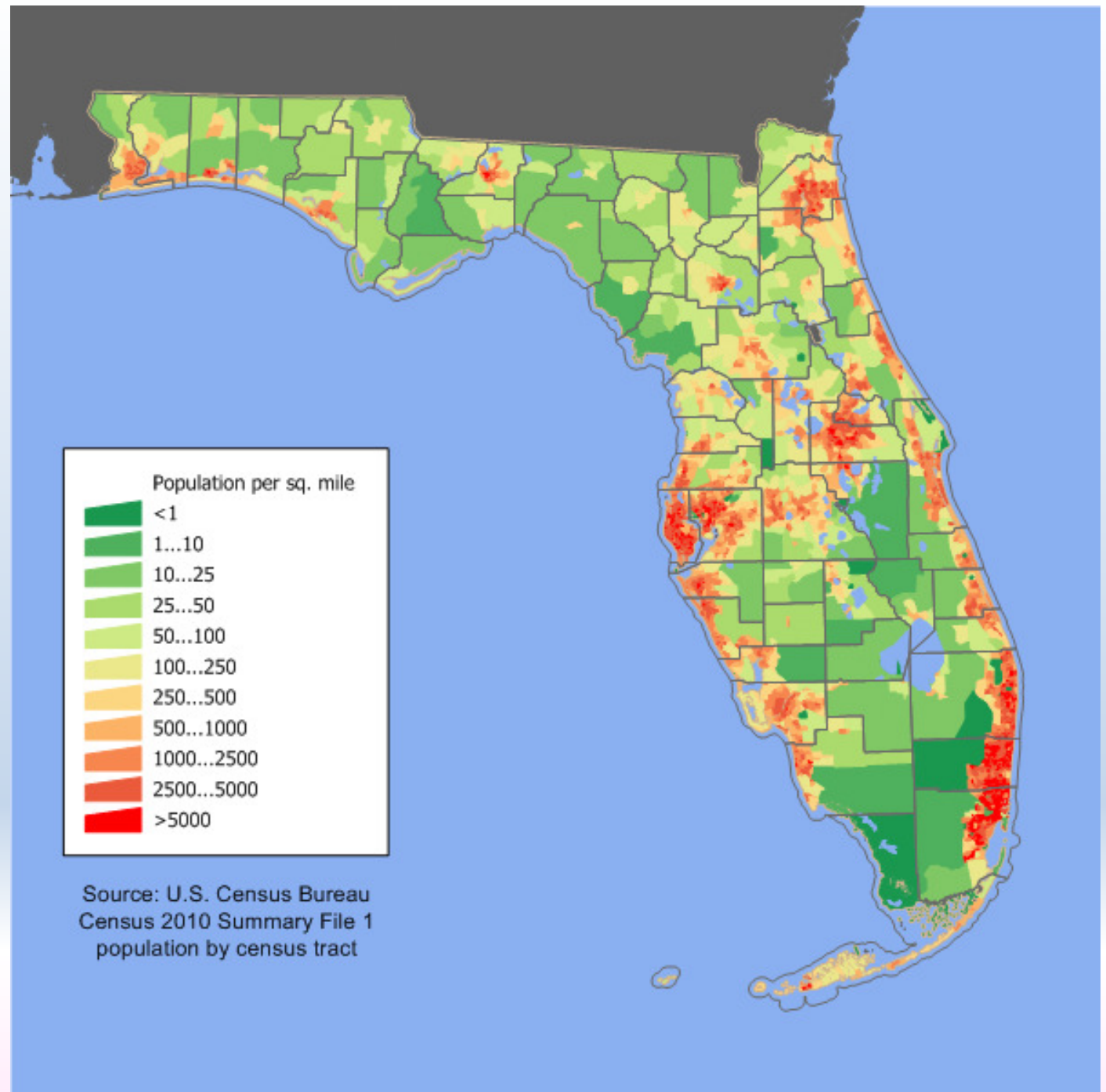
Rank in the fifty states, 2015	State or territory	Population estimate, July 1, 2015	Percent of total U.S. pop., 2015 ^[note 1]
1	 California	39,144,818	12.18%
2	 Texas	27,469,114	8.55%
3	 Florida	20,271,272	6.31%
4	 New York	19,795,791	6.16%
5	 Illinois	12,859,995	4.00%
6	 Pennsylvania	12,802,503	3.98%
7	 Ohio	11,613,423	3.61%
8	 Georgia	10,214,860	3.18%
9	 North Carolina	10,042,802	3.12%
10	 Michigan	9,922,576	3.11%

Largest Urbanized Areas With Selected Cities and Metro Areas

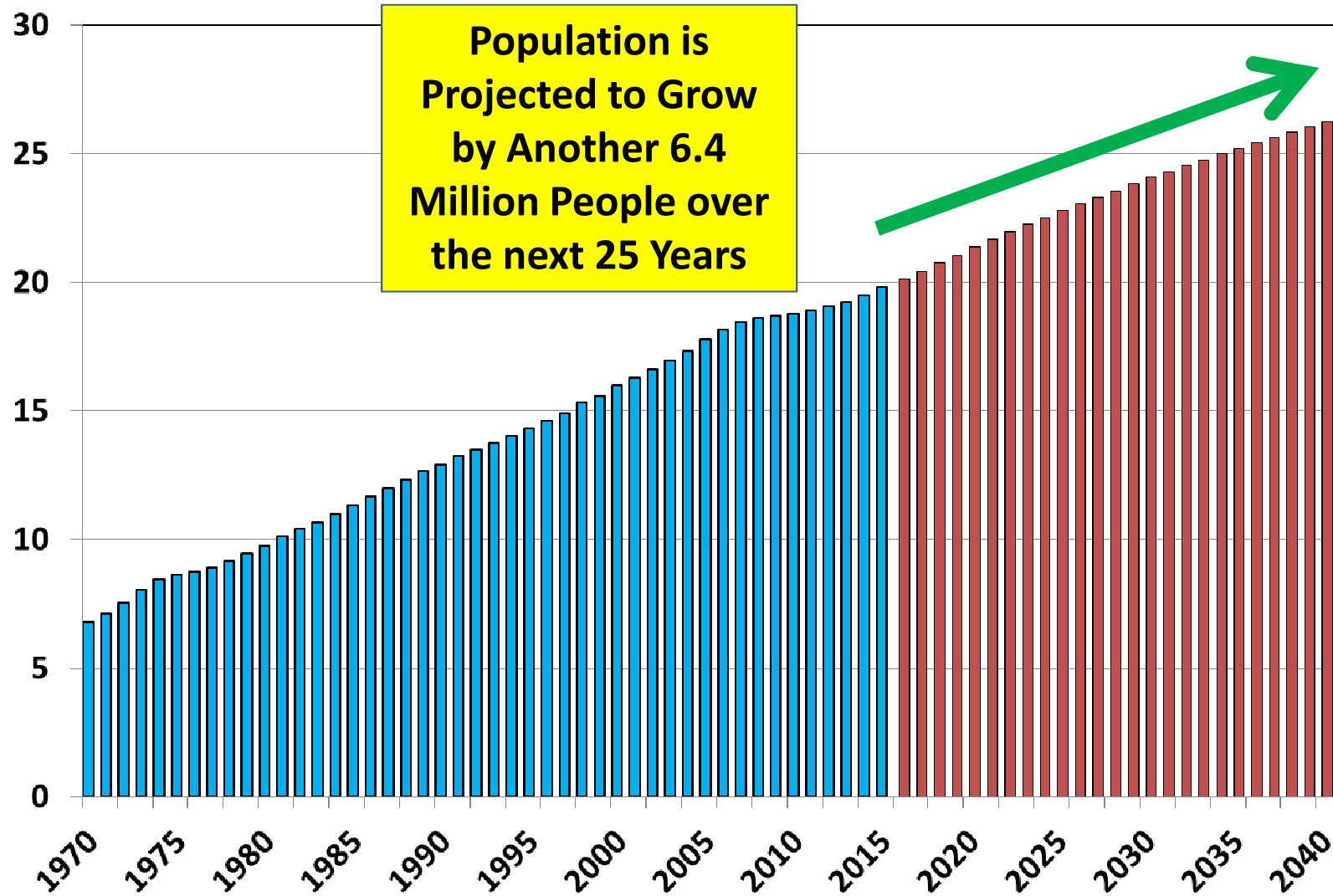
November 15, 2012



So Where do the People in Florida Live?



State of Florida Population in Millions



Source: Bureau of Economic and Business Research, UF

State Water Supply Challenges

6.4 Million New People

@

90 gpd/capita for domestic use

= 576 Mgal/day

of “new” water needed

over the next 25 years

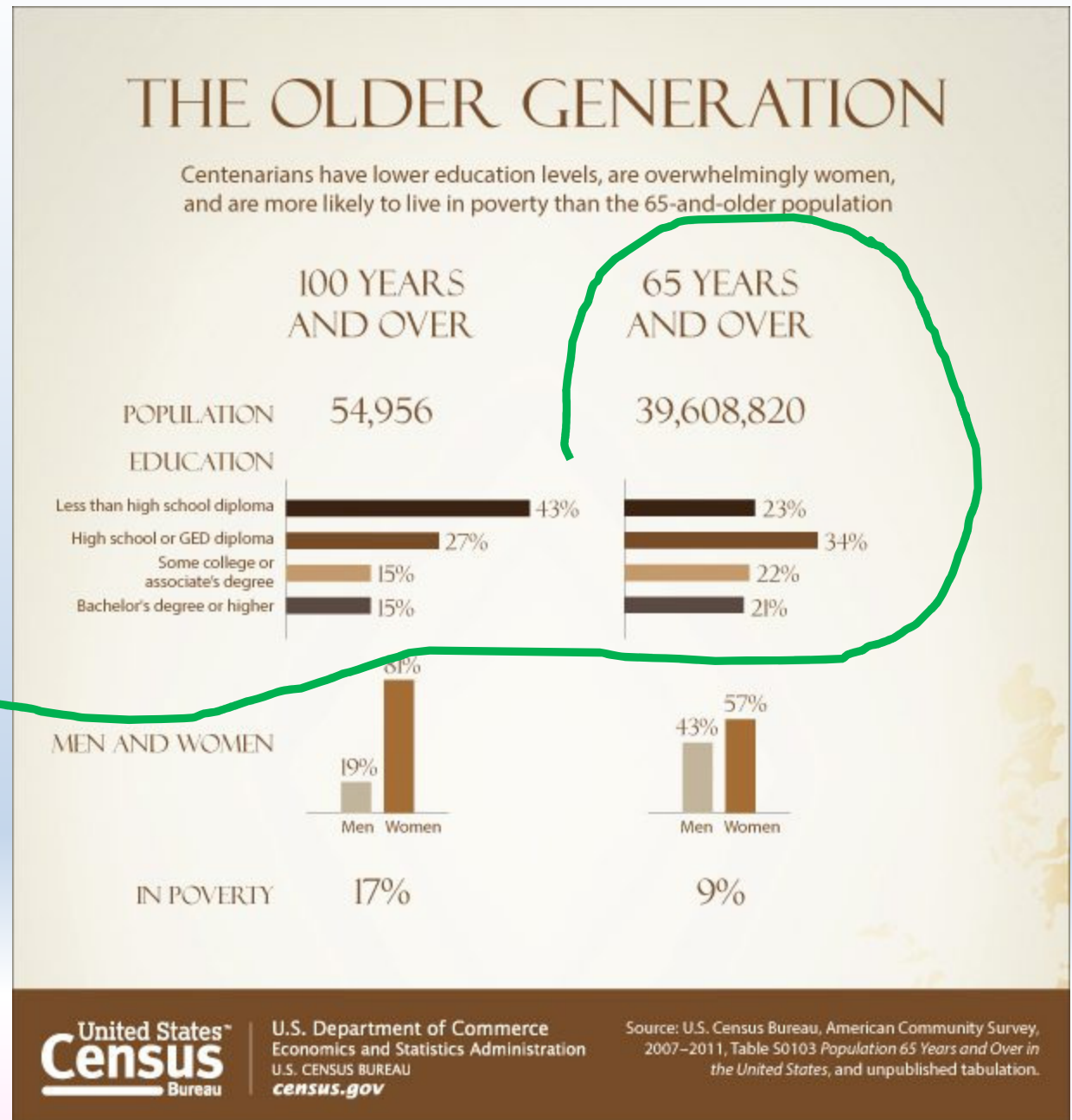
(this is roughly 1,800 acre*³ft/day)

Two Major Demographic Shifts Looming for Florida

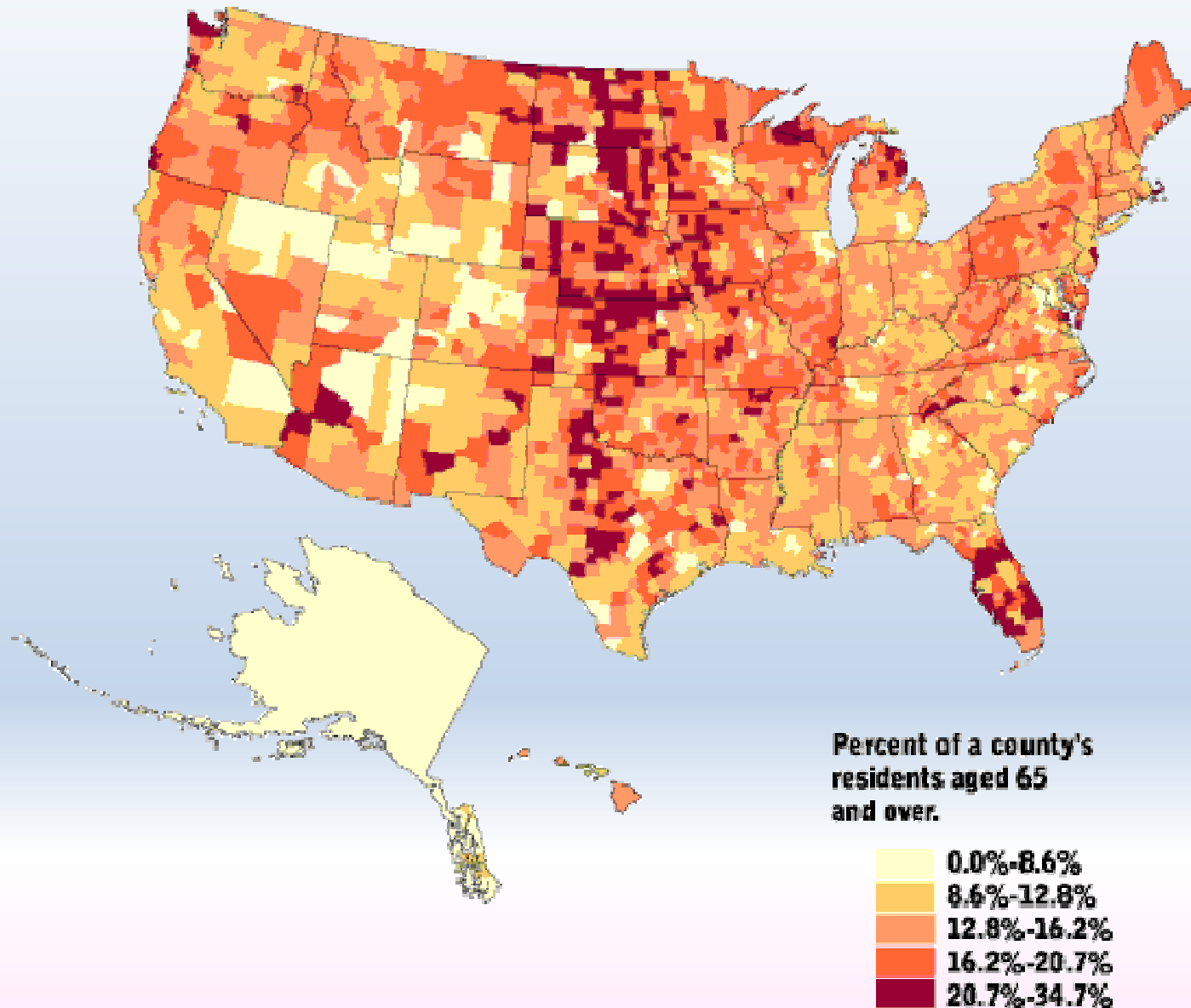
- Baby Boomers
- Immigration

The 2010 Census Revealed 39 Million “Senior Citizens”

But that Does not Reflect Baby Boomers who are Now Adding to these Ranks



In the 2010 Census, the Heartland Exhibited Broad Senior Density from North to South



Florida has 4 of the “Grayest” Counties in the US

The Grayest Counties in the U.S.

Counties with largest % of population ages 65+

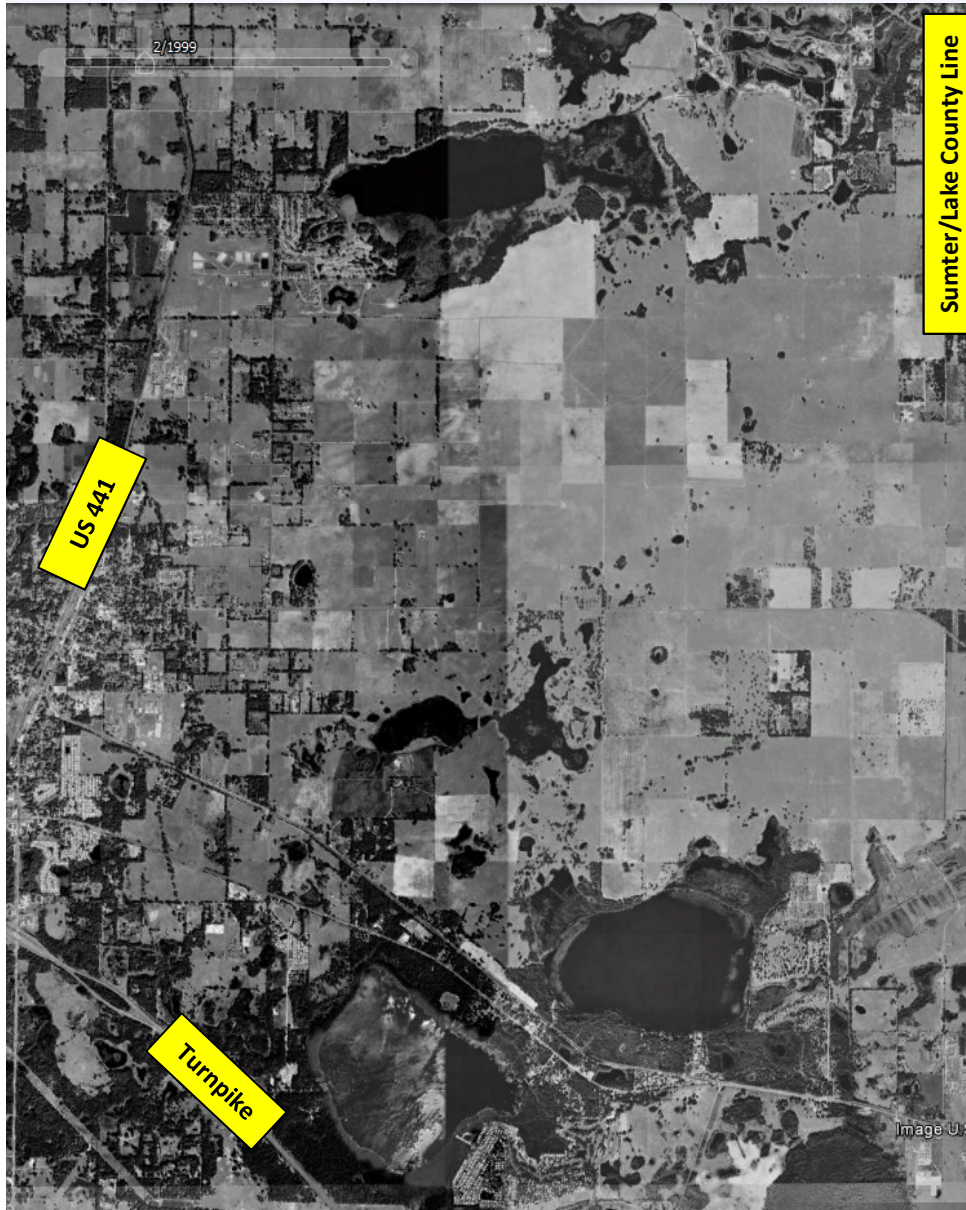
County	State	Total Population	% ages 65+
→ Sumter	Fla.	114,350	52.9%
→ Charlotte	Fla.	168,474	37.7
La Paz	Ariz.	20,231	36.1
→ Citrus	Fla.	139,377	35.2
Lancaster	Va.	11,044	35.2
Catron	N.M.	3,556	35.0
Alcona	Mich.	10,454	34.8
Northumberland	Va.	12,251	34.3
Sierra	N.M.	11,325	34.0
→ Sarasota	Fla.	396,962	33.9
Llano	Texas	19,510	33.9

Source: U.S. Census Bureau 2014 population estimates

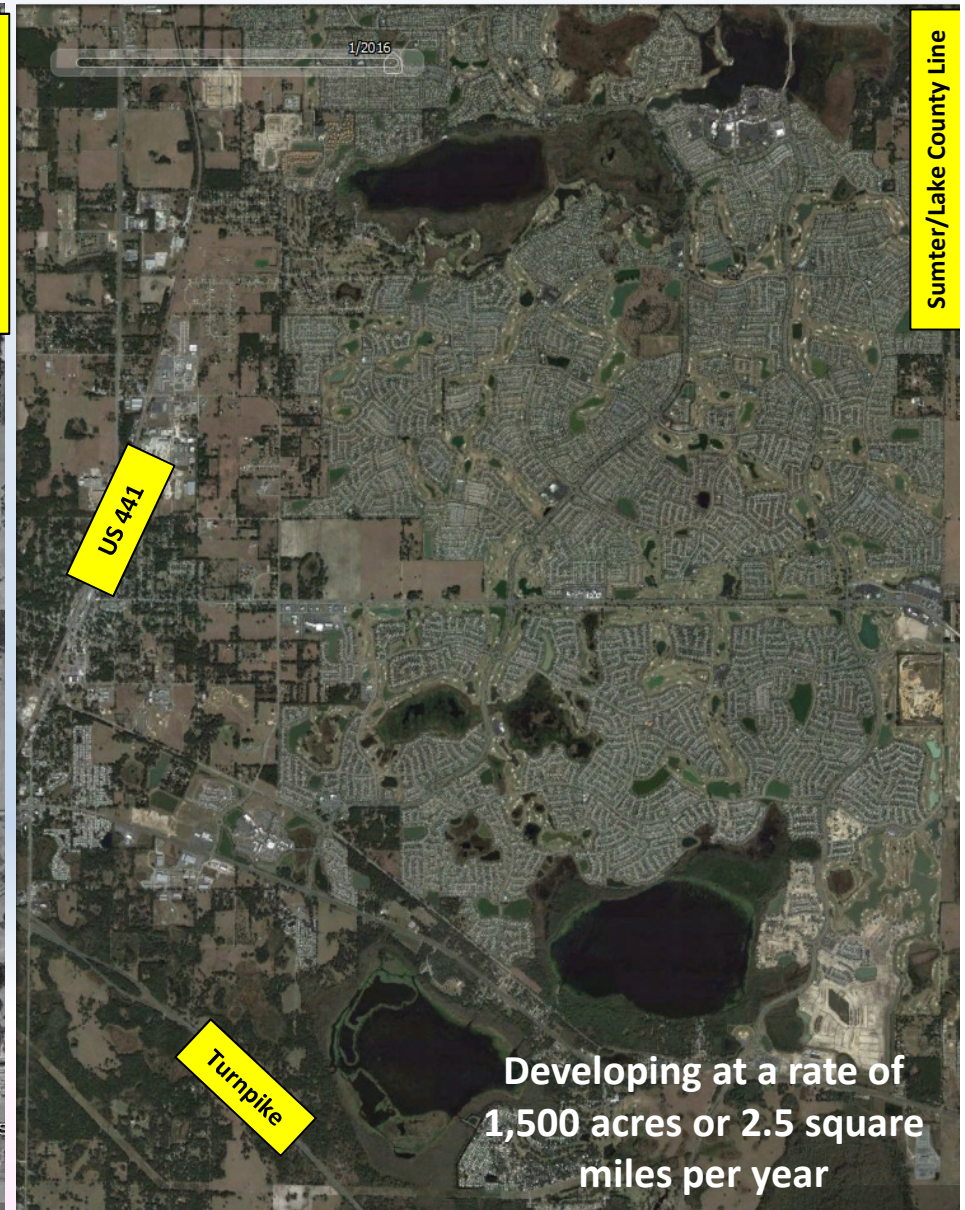
PEW RESEARCH CENTER

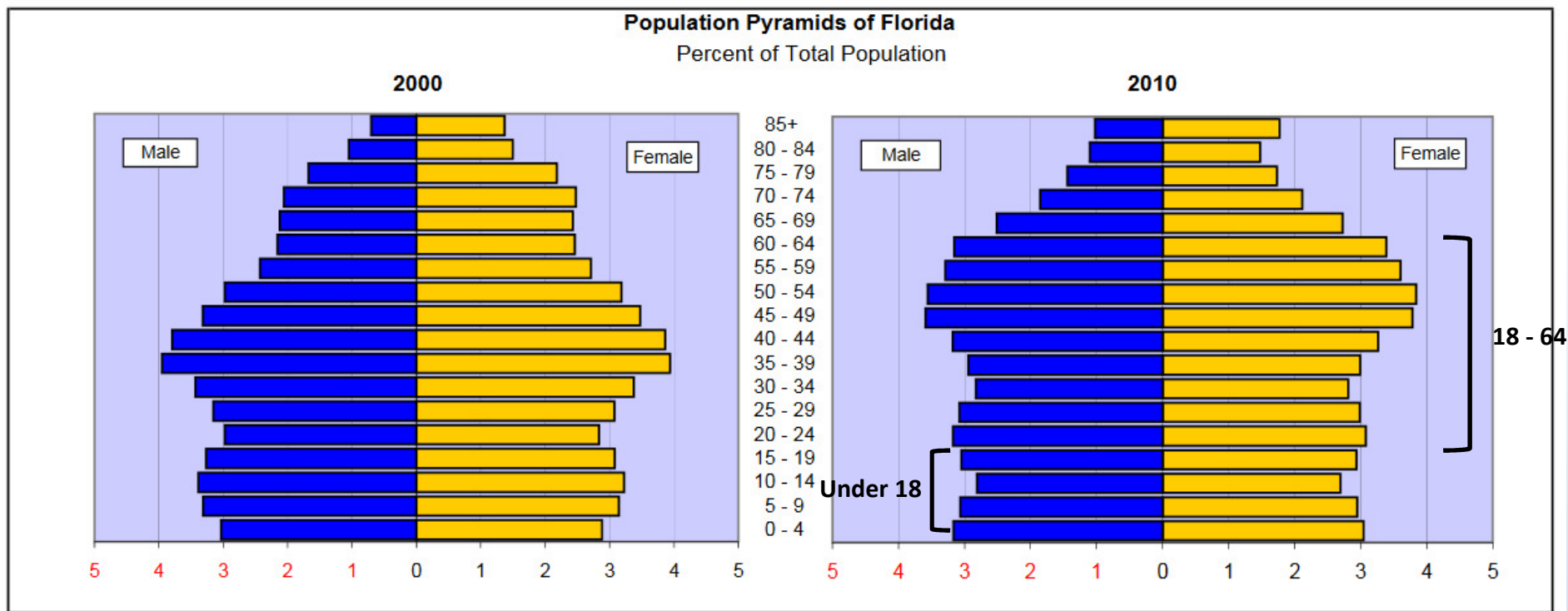


The Villages: 1999

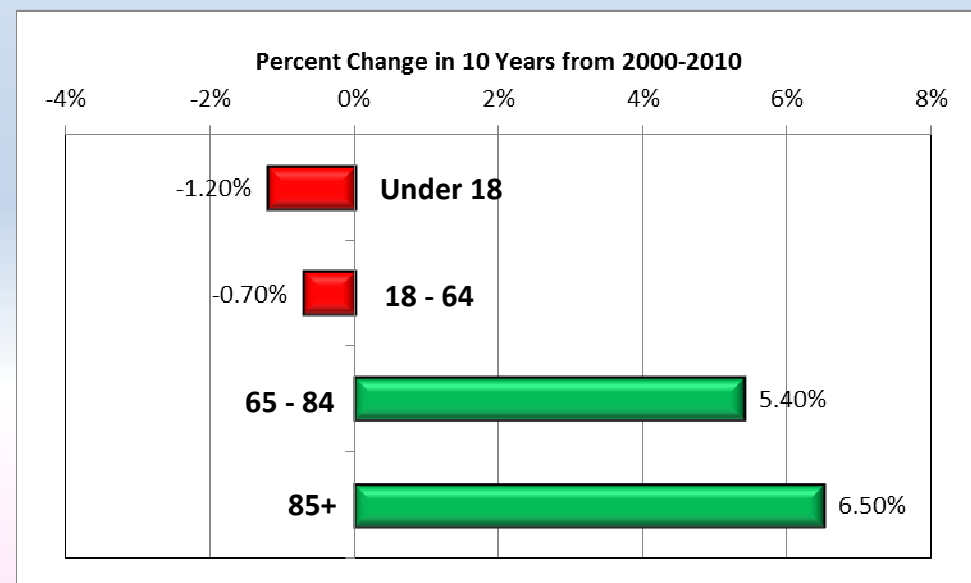


The Villages: 2016



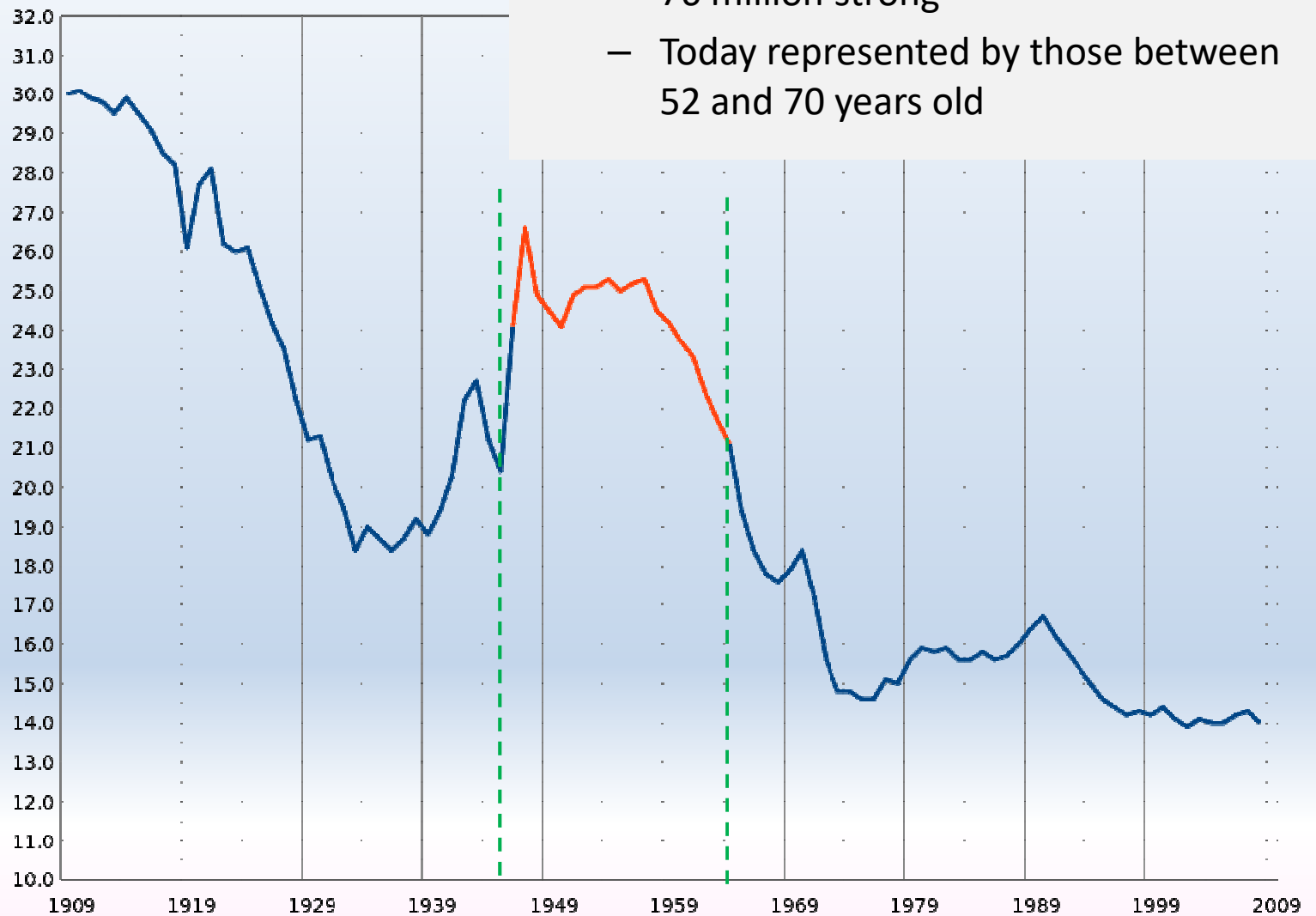


- Since 2000
 - Median Age rose by 3.2 years
 - Relative Changes in the population



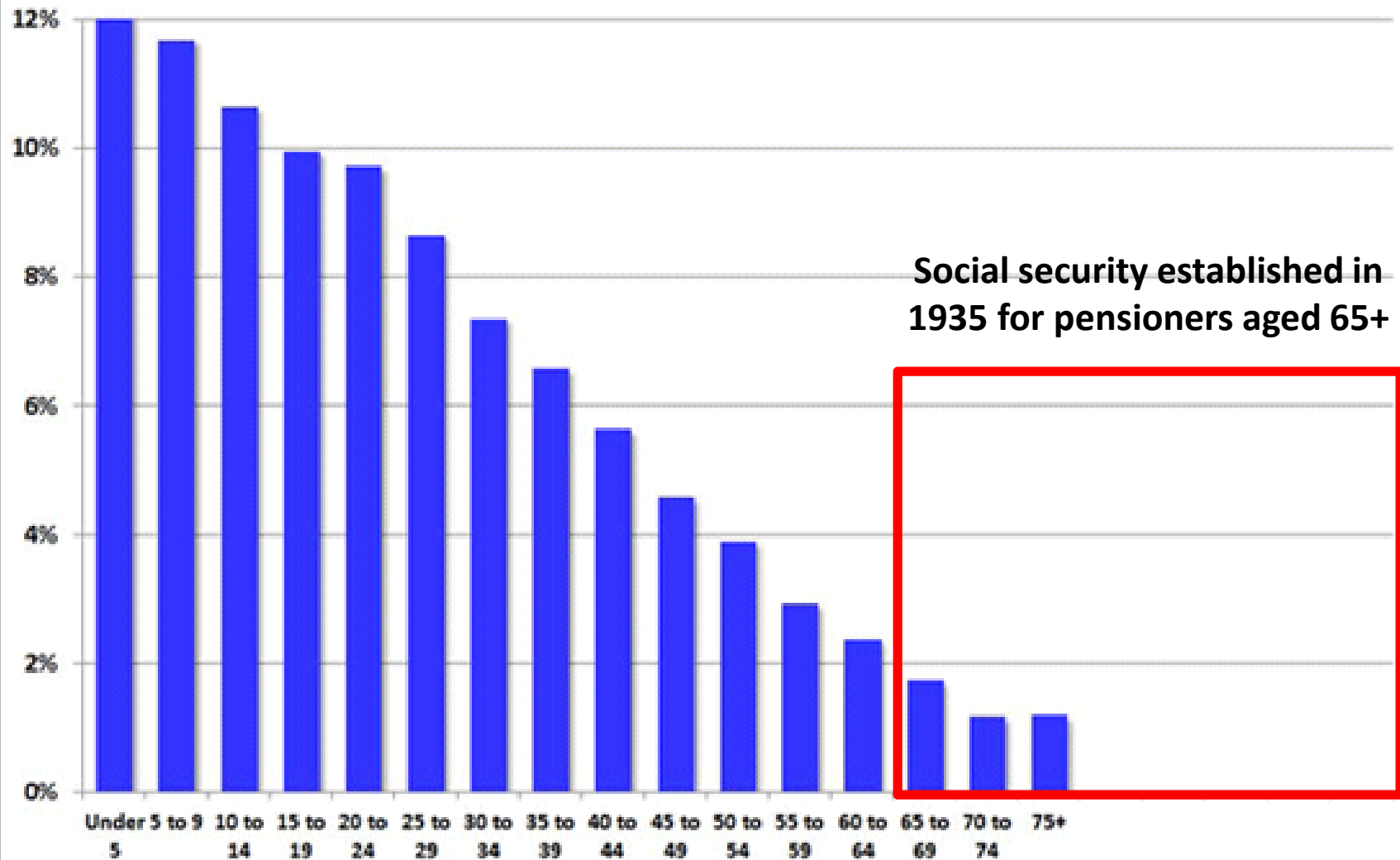
- The Baby Boomers
 - Post WWII
 - 1946 – 1964
 - 76 million strong
 - Today represented by those between 52 and 70 years old

**US
Birthrate
per 1,000**



Population Distribution by Age

■ 1900

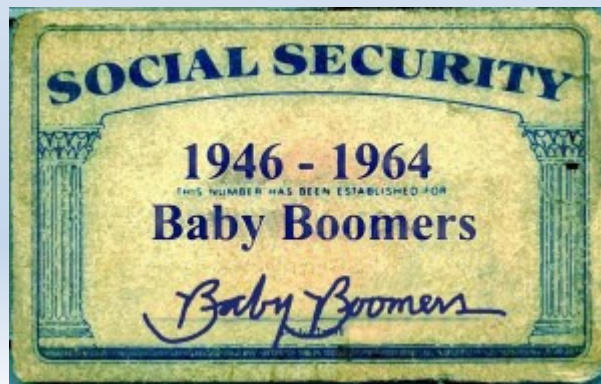


Social security established in 1935 for pensioners aged 65+

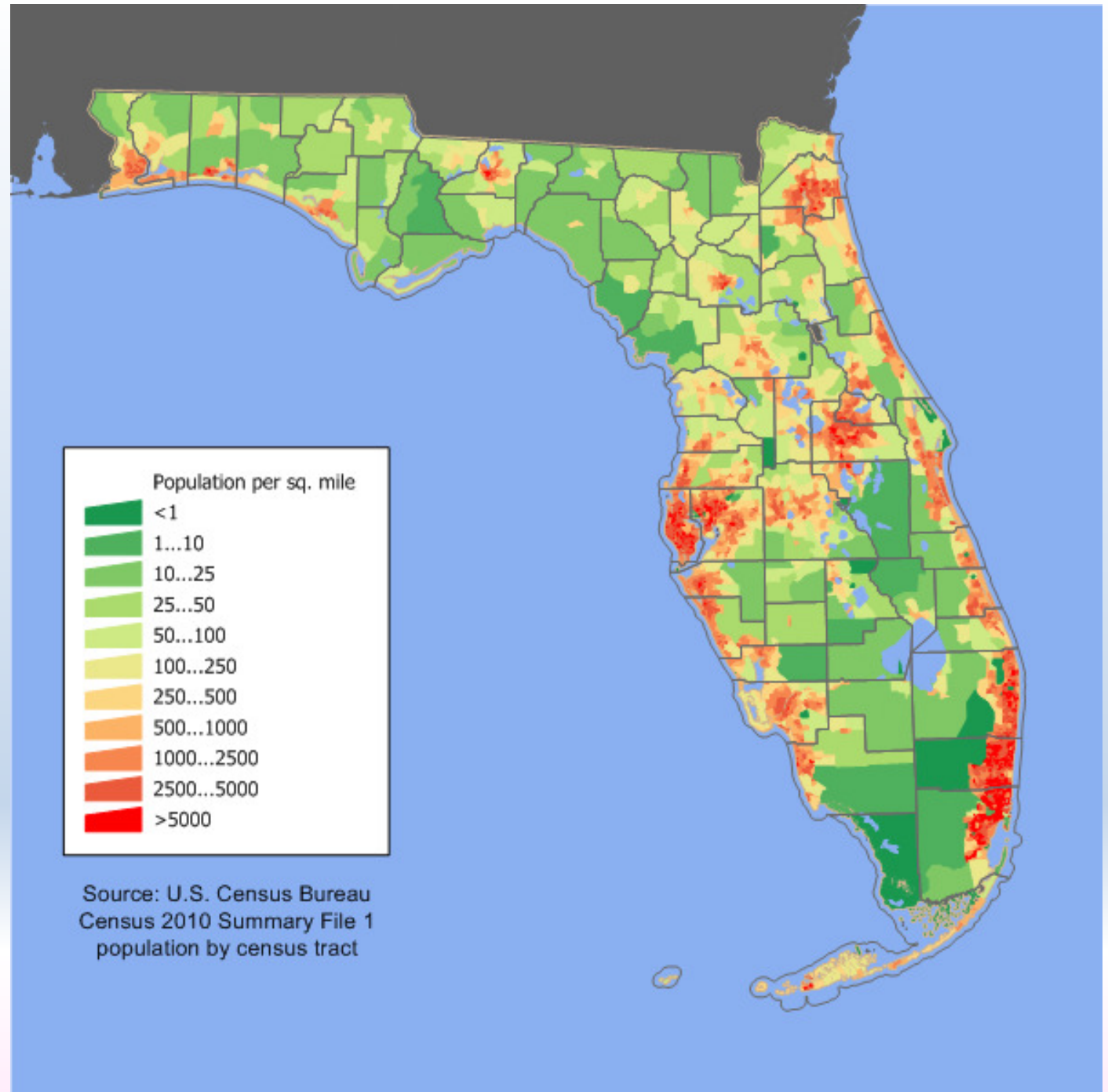
<http://www.calculatedriskblog.com/>

10,000

BABY BOOMERS WILL
TURN 65 EVERYDAY UNTIL
2030.



**New
Growth will
Take Place
Along and
Spreading
out from
Existing
Density
Patterns**

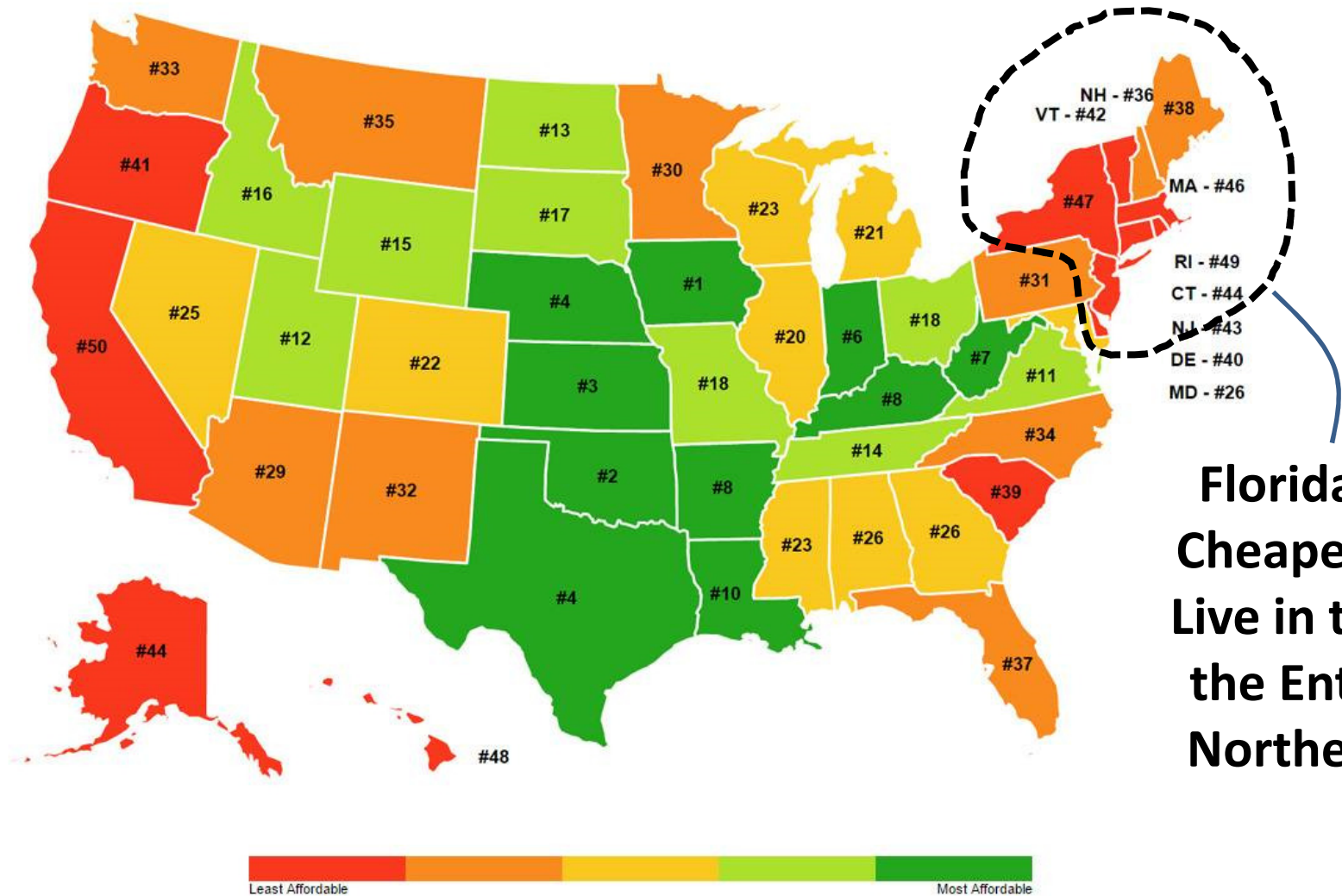


What Brings People to Florida?



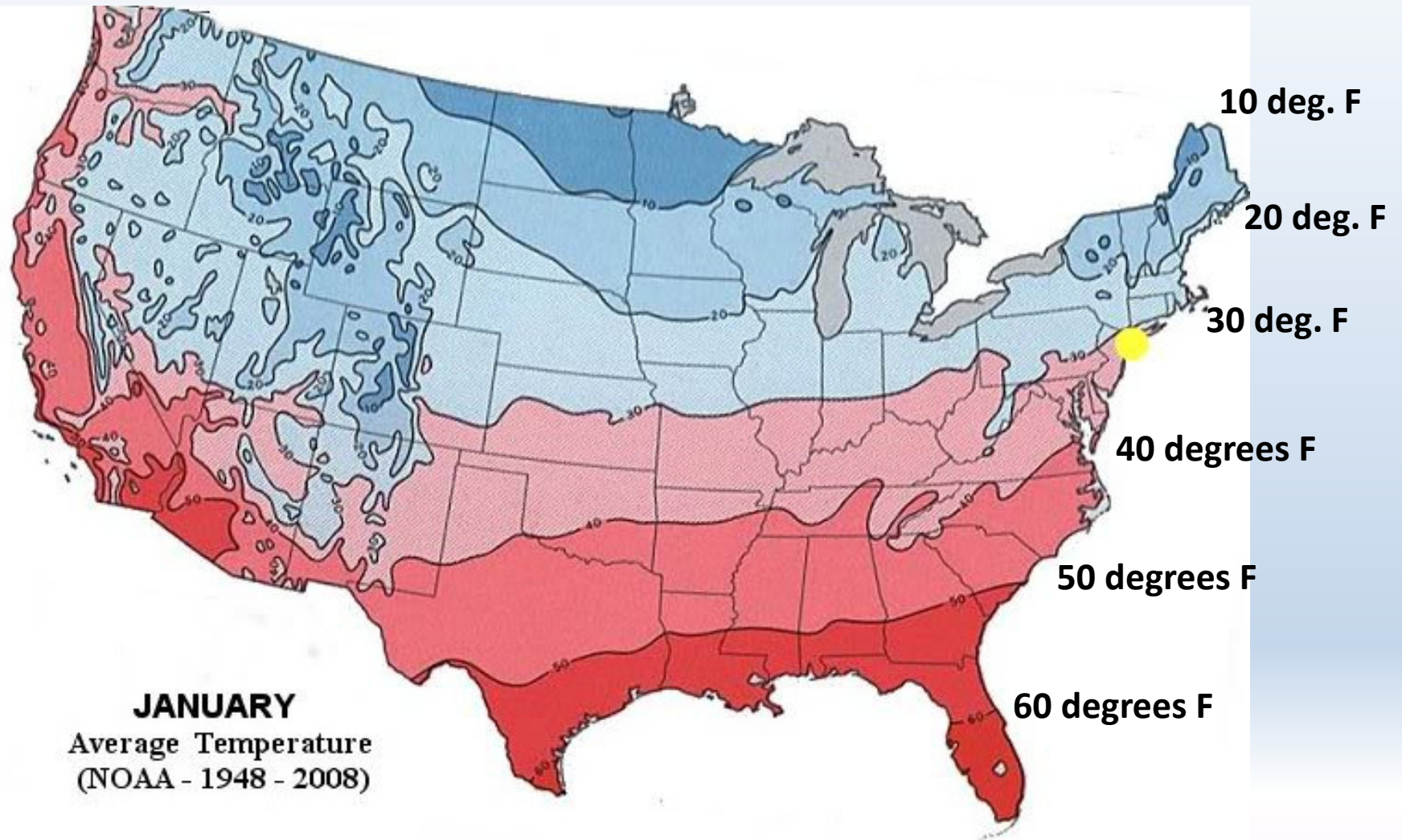
- 27 - 1st Order Magnitude Springs
- 1,100 miles of coastline
- 1,250 golf courses
- 4,500 islands > 10 acres
- 7,700 lakes > 10 acres
- 4 million other senior citizens
- 9 million jobs

WHICH STATES ARE MOST AFFORDABLE TO LIVE IN?



**Florida is
Cheaper to
Live in than
the Entire
Northeast**

Florida's Mild Winters



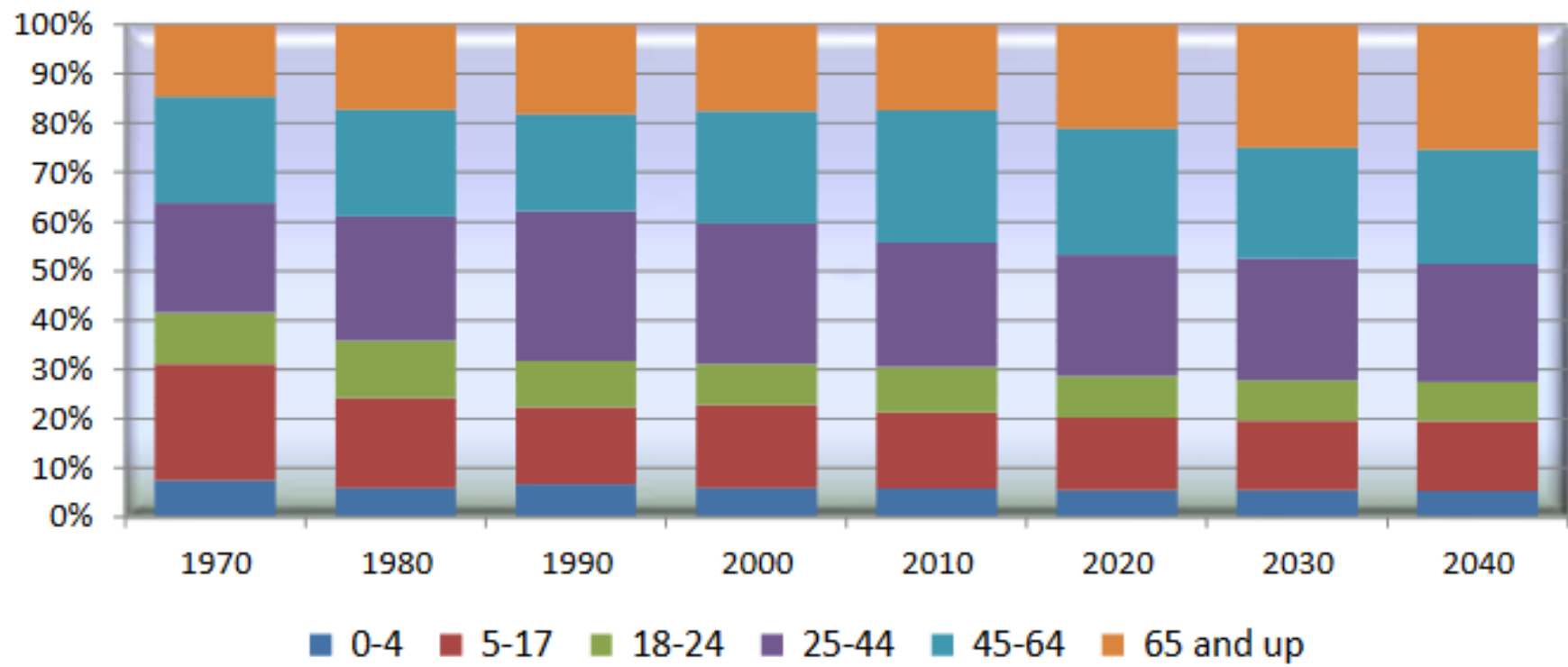


A buried locomotive near Alliance, Nebraska



© AP

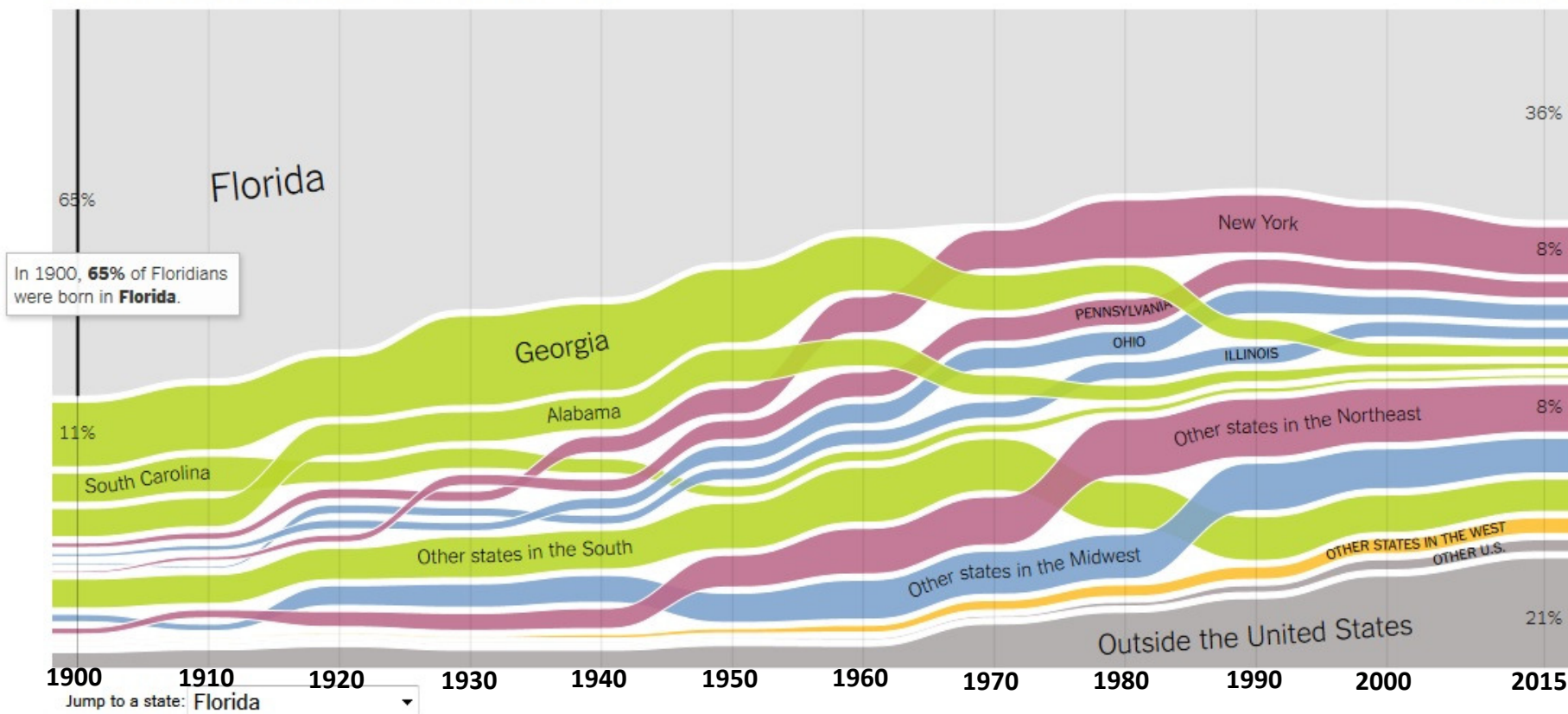
Percentage by Age Group: Florida



Nearly 65% of Floridians Originate from Elsewhere

Where people who live in Florida were born

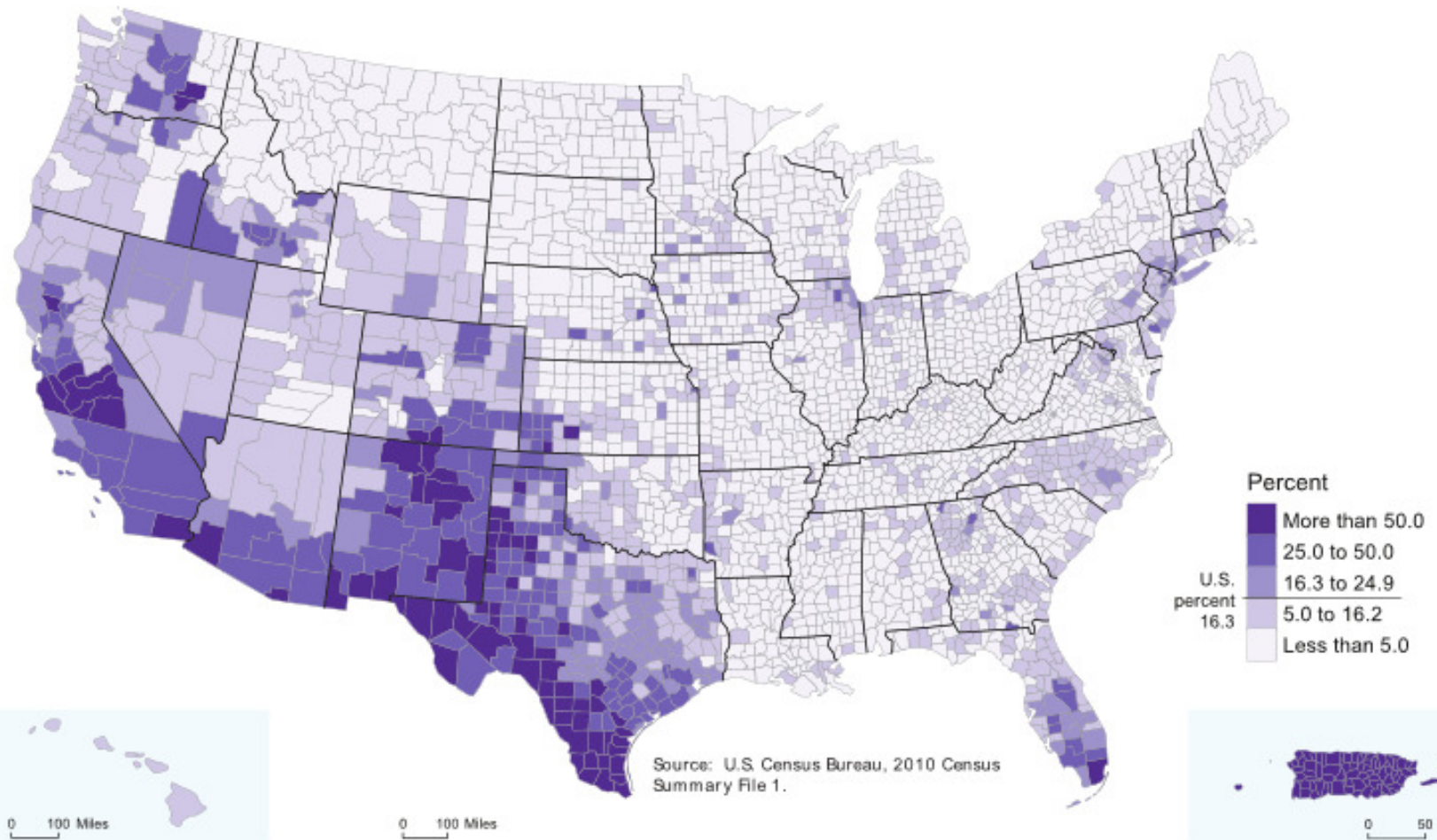
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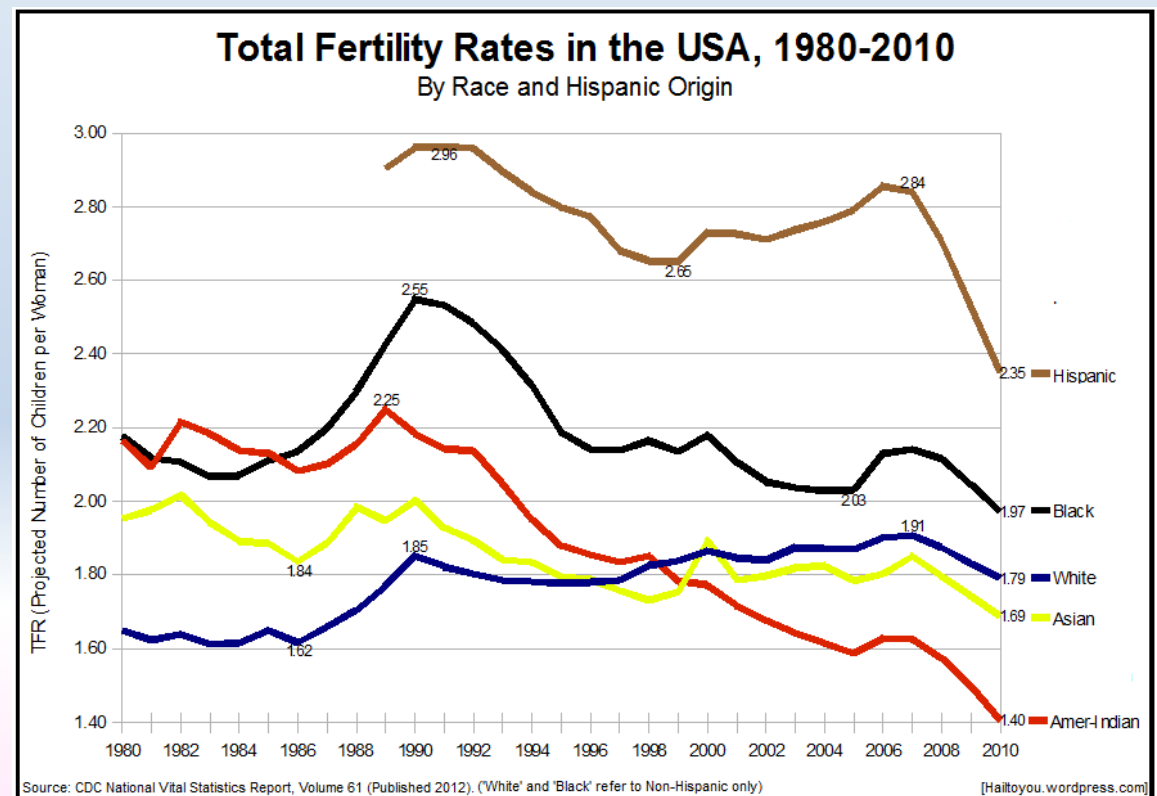
Hispanic or Latino Population as a Percent of Total Population by County: 2010

(For information on confidentiality protection, nonsampling error, and definitions, see www.census.gov/prod/cen2010/doc/sf1.pdf)



Hispanic/Latino Influx to Florida

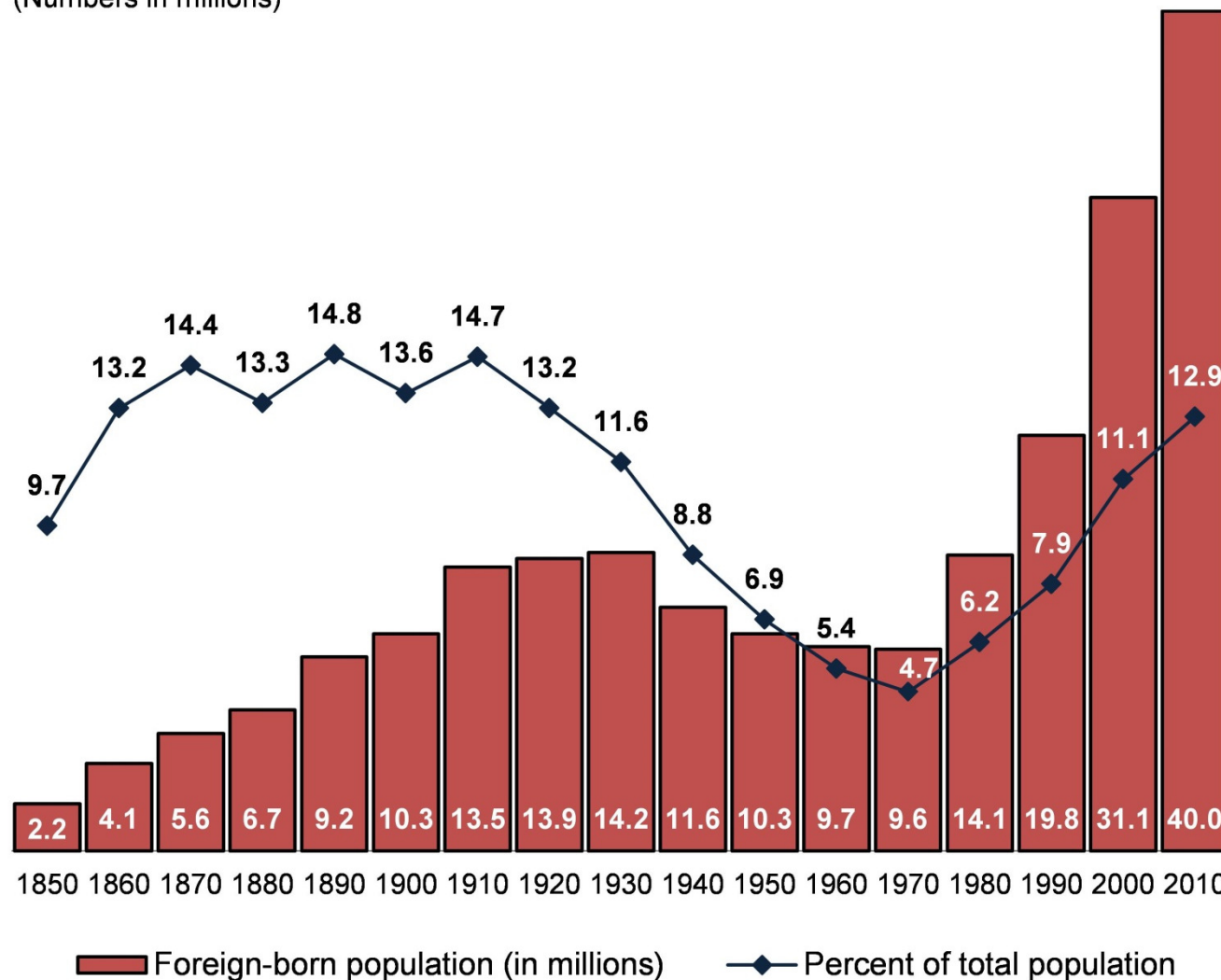
- Between 2000 and 2010, the Hispanic/Latino population of Florida increased by 57%
 - Partly Immigration: Mexico, Puerto Rico and Guatemala
 - Partly Organic



Foreign Immigration to the US over the Past 160 years

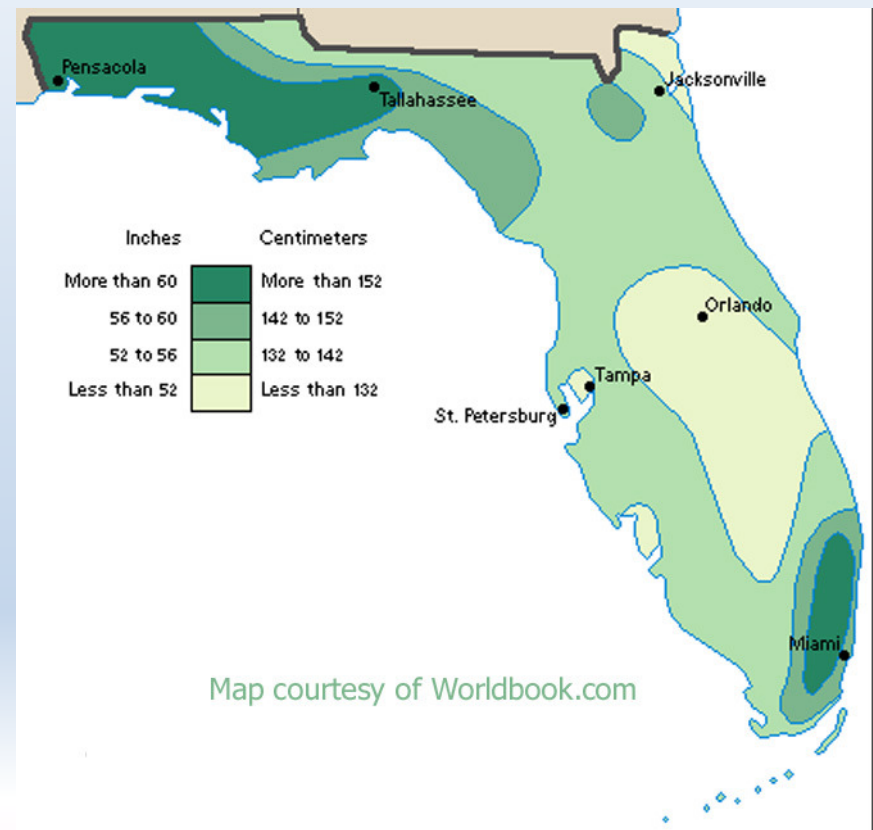
Foreign-Born Population and Percentage of Total Population, for the United States: 1850 to 2010

(Numbers in millions)



Water Supply Availability

- Groundwater is overstressed
- Florida receives 50+ Inches of Rain per year
- If we could capture 1" of rain per year over the state's 58,600 square miles of area:
 - it would supply about 1,000 BG/yr
 - Enough for 27 million people
- However challenges include:
 - Disproportionate population density
 - Rainy/Dry season & storage
 - Lacking system connectivity



Implications of Projected Growth on Water Supply Costs

- The Days of Cheap Water are Gone
- Alternative Sources are Much More Costly
- Traditionally, local governments opted to pursue water supply projects on their own within their own borders
- However, we are seeing a move towards regionalism, interconnection, collaboration and economy-of-scale projects
- Water Management Districts encourage collaboration rather than competition through incentivizing with grants

Final Comments

- Baby Boomer Retirement/Migration en masse will be unprecedented, BEBR projections could miss on the low side
- Continued poor global economic conditions and political instability will continue to bring foreign immigration pressure
- Existing Latino/Hispanic culture in S. Florida and along the I-4 Corridor will attract immigrants looking for easier cultural assimilation
- Additional water supplies will be needed at much higher costs than in the past
- Climate uncertainty and sea level rise add to uncertainty and increase the cost for solutions

end

Discussion/Questions