

-South Dakota-
Projecting the Population
Our Largest Project in 2012

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Projection isn't Prediction

Projection is based on the data and trends that exist at a specific point in time – in this case, the trends and population that existed on April 1, 2010.

The projections are without error – the problem is, the assumptions are not.

Let's look at a couple of past assumptions

- Drifting Goose Reservation – April 1, 1880

- EXECUTIVE MANSION, *June 27, 1879.*

It is hereby ordered that townships numbered 119, 120, and 121 north, of range 63 west, in the Territory of Dakota, be, and the same are hereby, set apart as a reservation for the use of Mag-a-bo-das” or “Drifting Goose” band of Yanktonais Sioux Indians.

- **R. B. HAYES**

A year and two weeks later

- EXECUTIVE MANSION, *July 13, 1880*
- It is hereby ordered that townships Nos. 119, 120, and 121 north, of range 63 west, in the Territory of Dakota, set apart by Executive order, dated June 27, 1879, for the use of “Mag-a-bo-das” or “Drifting Goose” band of Yanktonais Sioux Indians, be, and the same are hereby, restored to the public domain.

R. B. HAYES

ON April 1, 1880 Steamboats Were South Dakota's Transportation System



1880-81 – The River Freezes

- An unusually hard winter destroys most of the riverboats, moored in Yankton. While riverboat traffic continues into the 1930's, South Dakota transportation shifts to the railroads.
- Sioux Falls begins 1880 with 2,164 people and in 1890 has 10,167.
- It was time to railroad instead of steamboat

Or a Base Closure?

- April 1, 1890, Fort Randall is the population center and economic engine for the area that is now Gregory County
- In 1892, Fort Randall is closed
- On April 1, 2010 Ellsworth Air Force Base is operating about 10 miles from Rapid City, with a population around 8,000.
- Our projections assume Ellsworth will continue at this rate

1910 – 1920 Years of Plenty

- Fertile Soil
- Wet Years
- Good Yields
- High Prices

1935 The Dustbowl

- In December, 1935, 40% of South Dakotans were on relief
- Population about 700,000
- 83,303 Farms and Ranches

- On April 1, 1940, South Dakota had 642,961 residents

- World War II started on December 7, 1941 for the USA

- On April 1, 1950, South Dakota had 652,740 residents

- In 1990, South Dakota's population matched 1935

Three things drive demography

- Birth
- Death
- Migration

South Dakota's Mortality and Health

- South Dakota's 2002 infant mortality rate was 6.5. In 2007, it was 7.3 which increased to 8.28 in 2008. (per thousand live births)
- South Dakota's current life expectancy is about 79.9
 - a little higher than the United States life expectancy of 78.6.

Making Projections

- Birth and Death are easy – we just get the numbers from Vital Statistics, calculate the trend lines, and build the birth and death models.
- The model includes increasing longevity
- The model maintains birth rates at the same rate as occurred between 2000 and 2010
- For purposes of calculating the extremes – one of our ways of checking data – we also calculate from the extremes – the years with the highest and lowest death rates. This is background data, useful for checking the math, but not for planning.

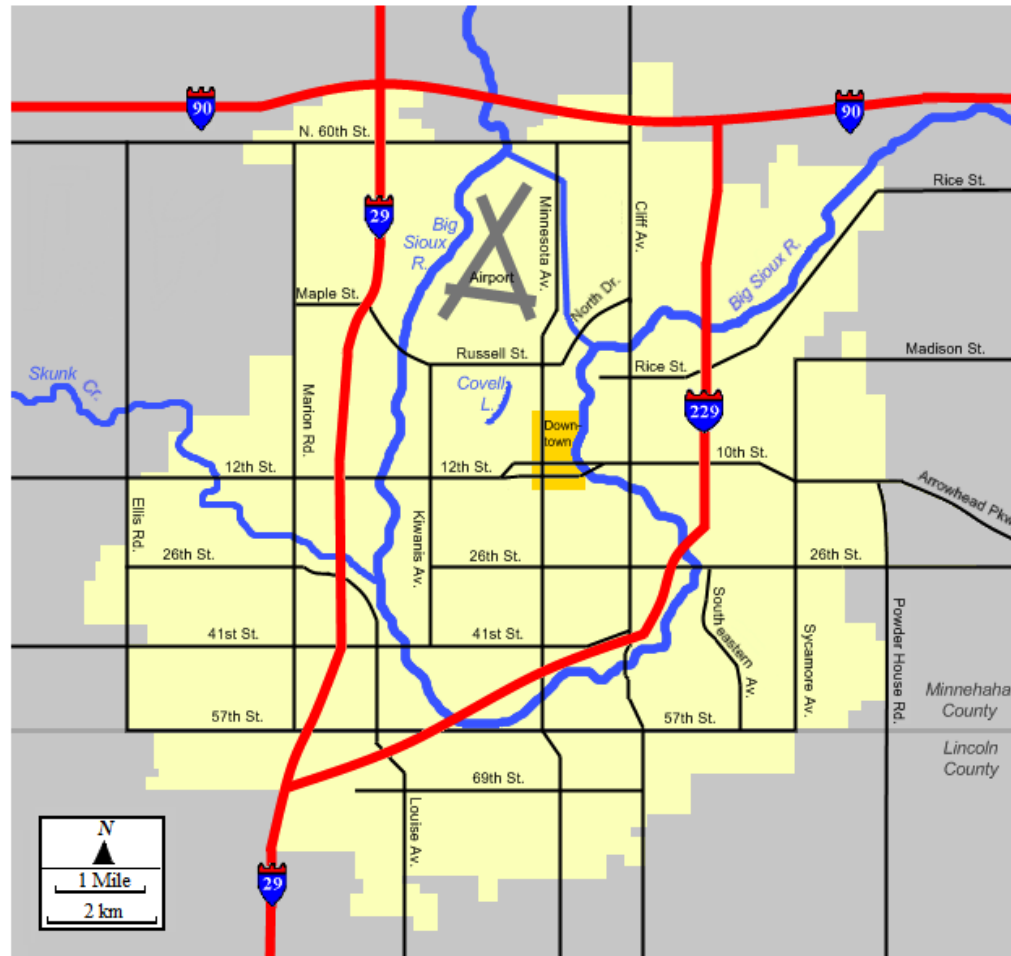
Migration Isn't Easy

- With the Census “long form” replaced by the American Community Survey, the potential error of measurement for our small communities becomes greater than the migration number.
- We can get more accurate data from IRS filings – but those carry their own inaccuracies. For example, an 18-year-old going to college probably hasn't filed taxes when she moves to Brookings – but she leaves as a taxpayer.

Now, we look at trends

- Some Counties are losing population – outmigration/death
- Some Counties are gaining population
- South Dakota Counties are generally getting older
- Birth rates remain low
- Life expectancies are increasing
- Medical progress continues
- The in-migration driver of the state is Sioux Falls
- The Baby-Boom cohort is moving into retirement age

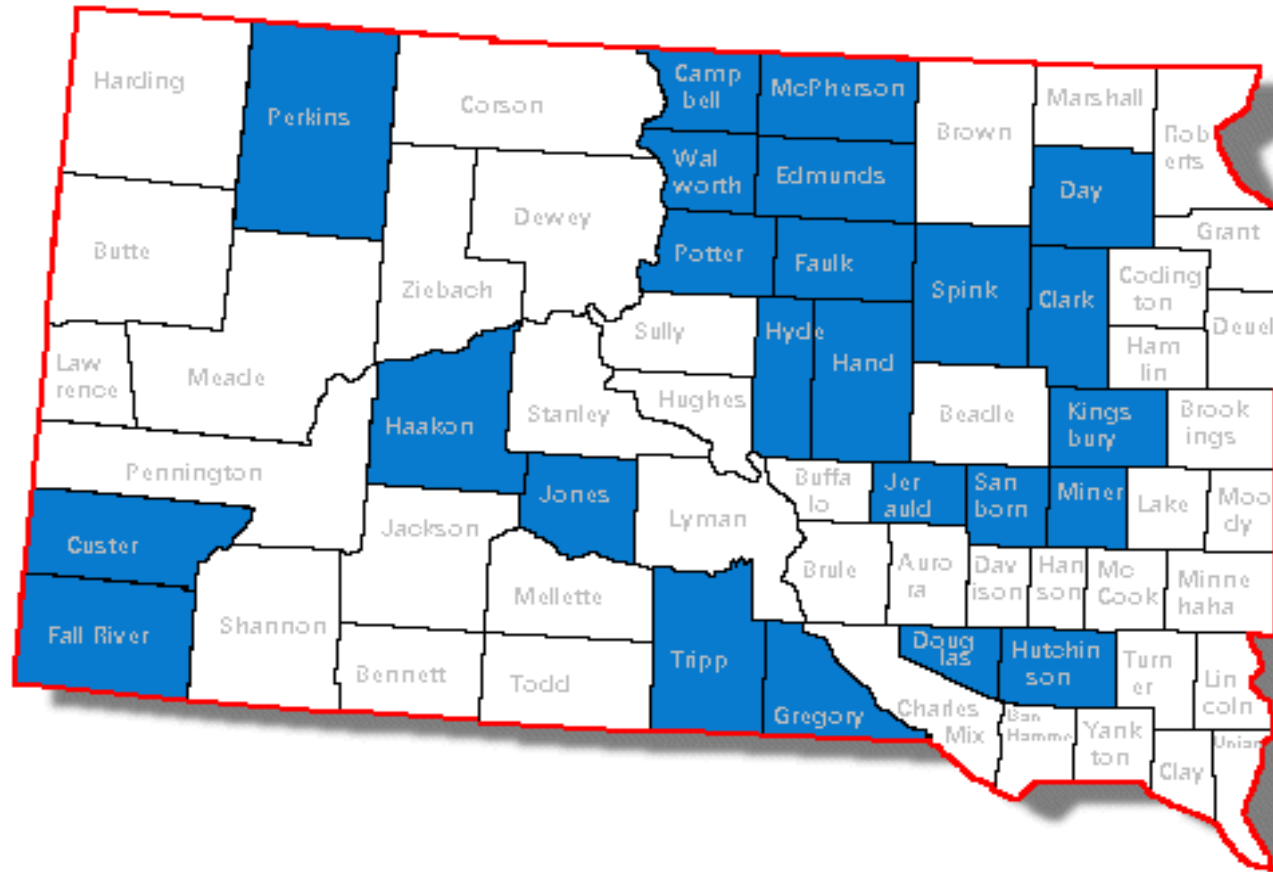
Most of SD's Population Growth Occurs in Sioux Falls



Our Aging Rural Counties (2010)

Older Population Counties

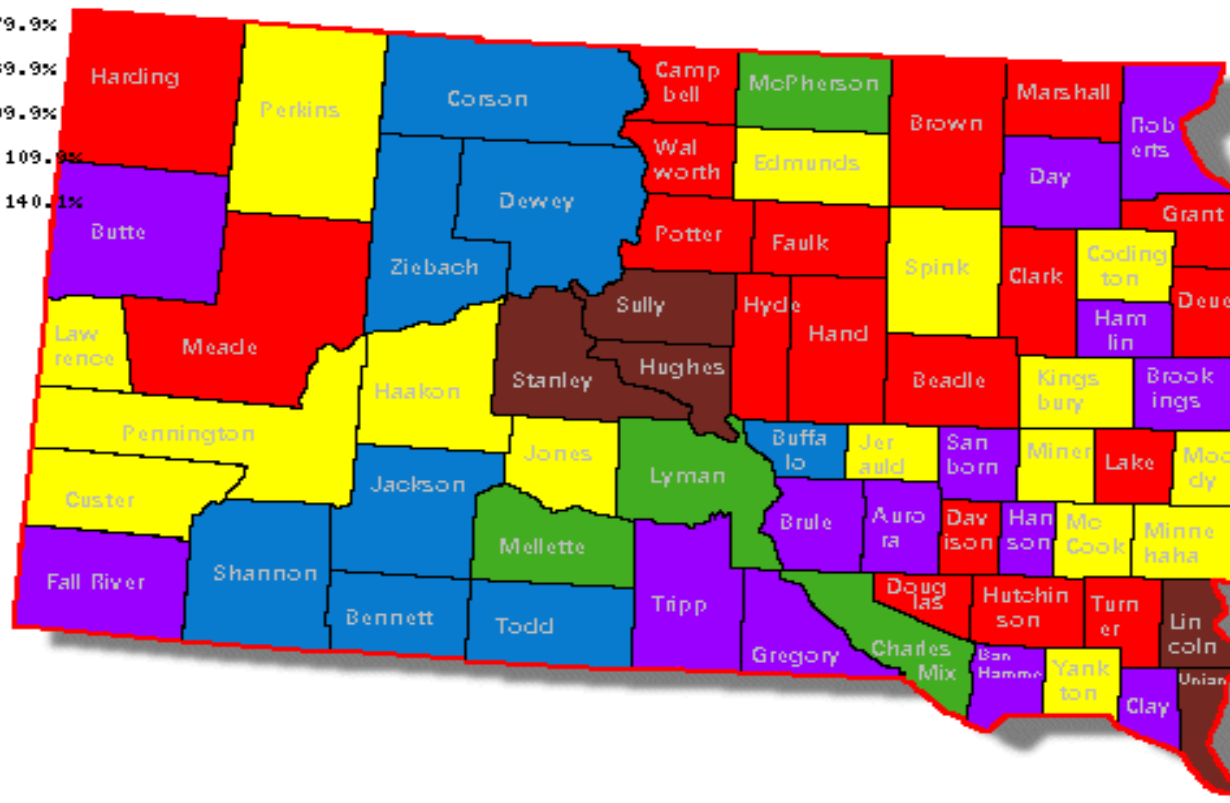
● - > 20% 65+ population



Per Capita Income (2010)

Per Capita Income – Percentage of state median (2010)

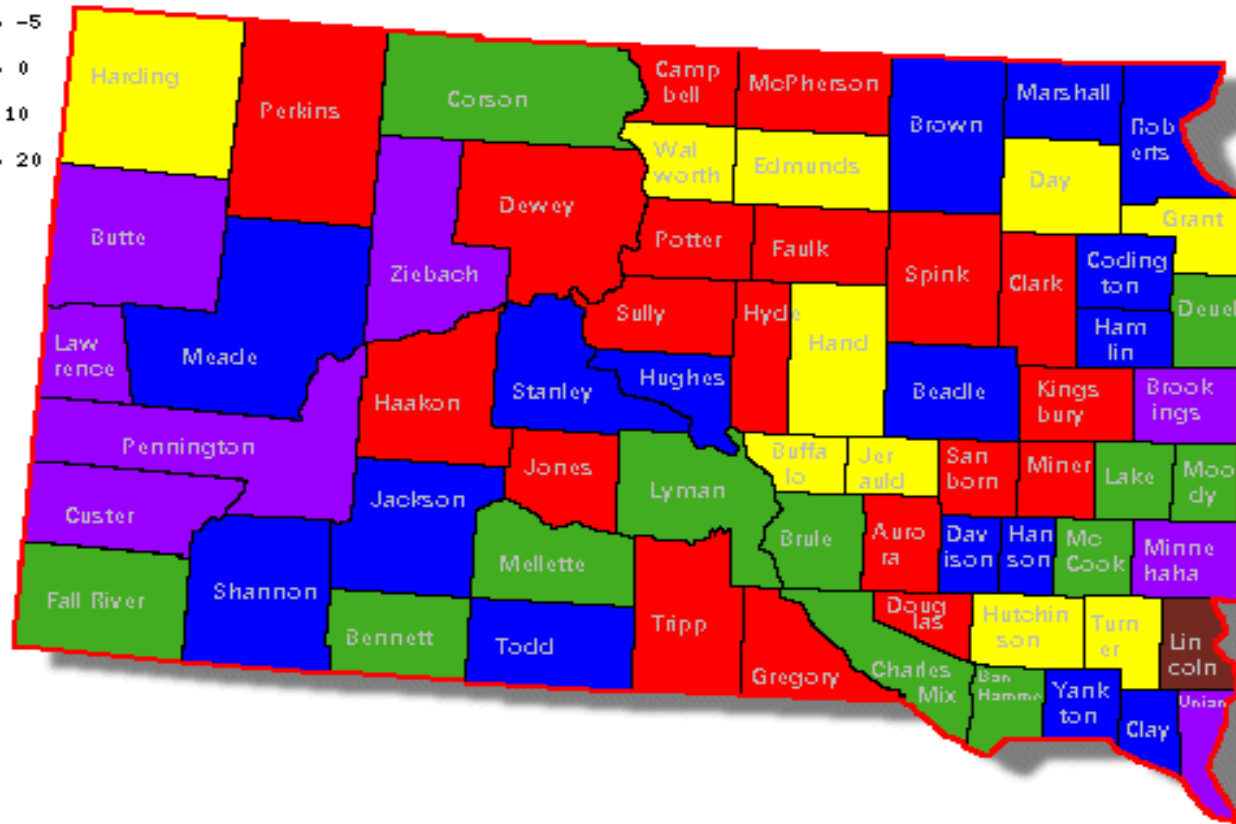
- - 30 to 69.9%
- - 70 to 79.9%
- - 80 to 89.9%
- - 90 to 99.9%
- - 100 to 109.9%
- - 110 to 140.1%



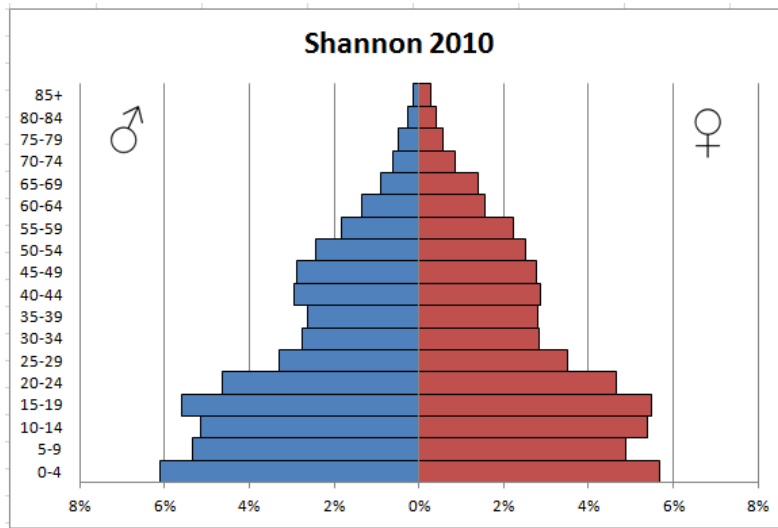
Demography – Close and Personal (Population change in percentage)

Population Change (2000–2010)

- - -20 to -10
- - -9.9 to -5
- - -4.9 to 0
- - 0.1 to 10
- - 10.1 to 20
- - > 20.1

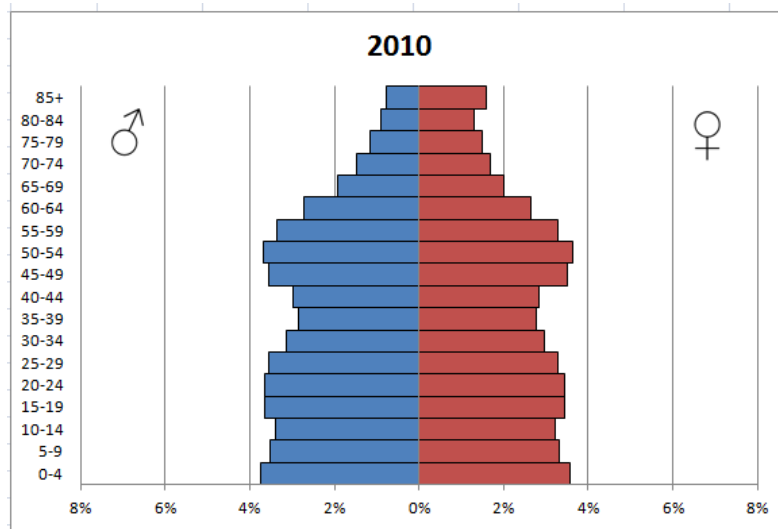


So lets look at the pyramids



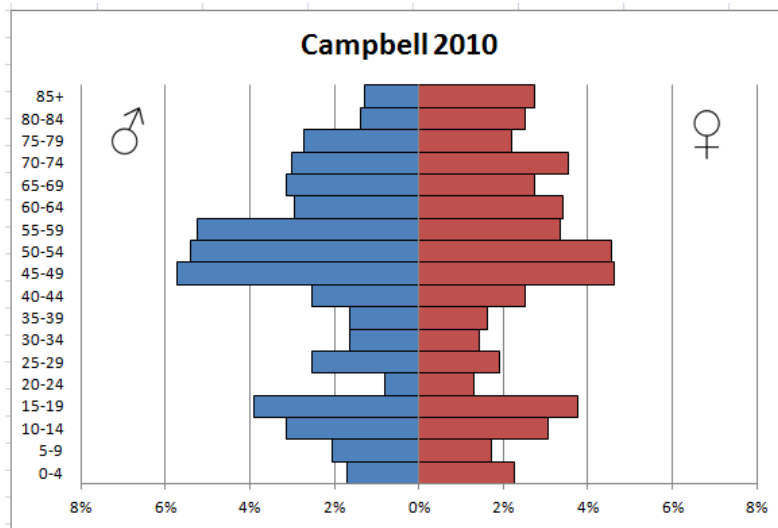
- Traditionally, populations are displayed in 5-year age cohorts – and when the practice began, they were pretty much isosceles triangles – like the example from Shannon County (Pine Ridge)

South Dakota's is less triangular



- The traditional triangle ends with the folks who were born around 1960 – at the end of the baby-boom the resemblance to a pyramid lessened considerably.

So let's look at some pyramids



- Campbell County is both an aging county and a population-loss county. While the pyramid gives a view of the population structure, the population indices show the social strain

And the population indices

Campbell County 2010

General Dependency Ratio	64.35
Youth Dependency Ratio	22.87
Aged Dependency Ratio	41.48
Index of Aging	181.37
Sex Ratio	103.05
Fertility Ratio	315.22
Young Adult Ratio	10.64

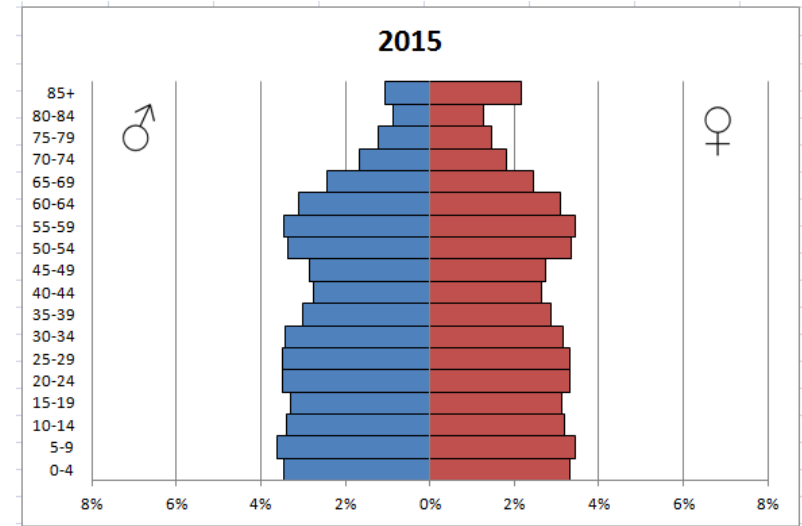
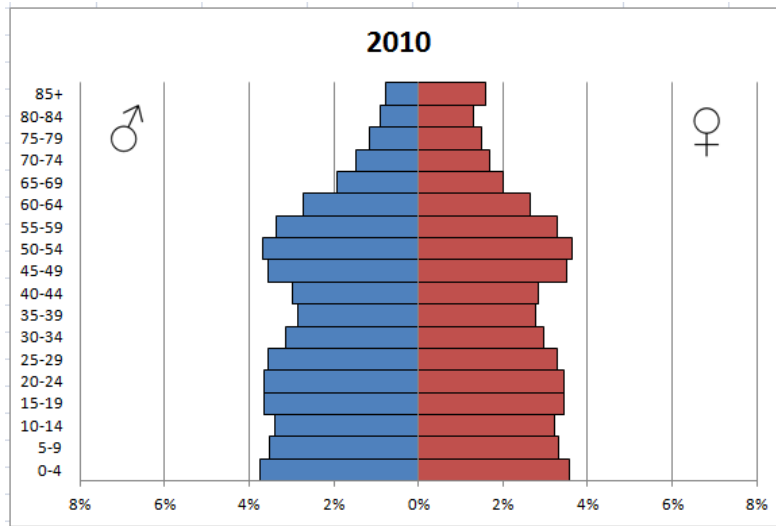
Population by Cohort

Age	2010	2015	2020	2025	2030	2035
0-4	58	63	83	84	59	48
5-9	55	53	58	77	75	49
10-14	91	47	48	52	70	65
15-19	112	81	39	44	47	64
20-24	31	99	71	31	40	41
25-29	65	31	86	61	23	37
30-34	45	61	31	70	52	16
35-39	48	41	56	31	53	45
40-44	74	41	36	52	30	37
45-49	152	60	35	32	48	30
50-54	146	137	46	30	28	43
55-59	126	132	121	32	25	24
60-64	93	113	117	105	18	22
65-69	86	81	99	100	87	17
70-74	96	71	68	84	82	69
75-79	72	78	55	54	67	63
80-84	57	53	59	38	40	48
85+	59	81	91	101	90	84
Total	1466	1323	1198	1077	936	802

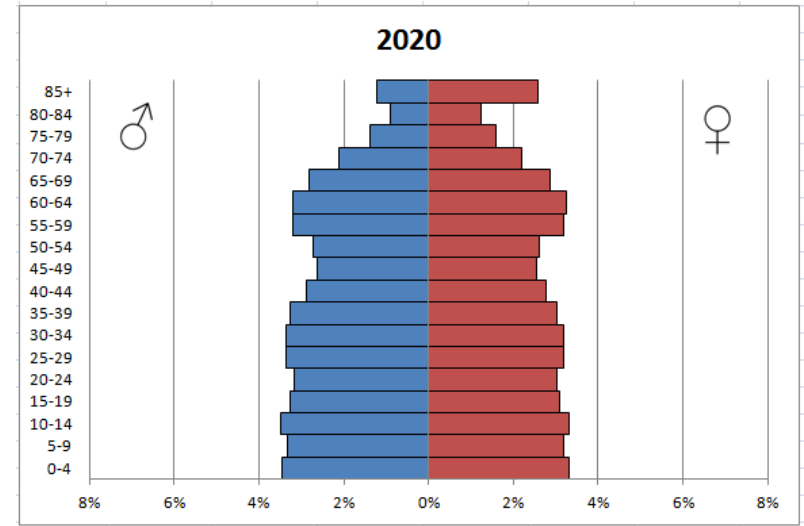
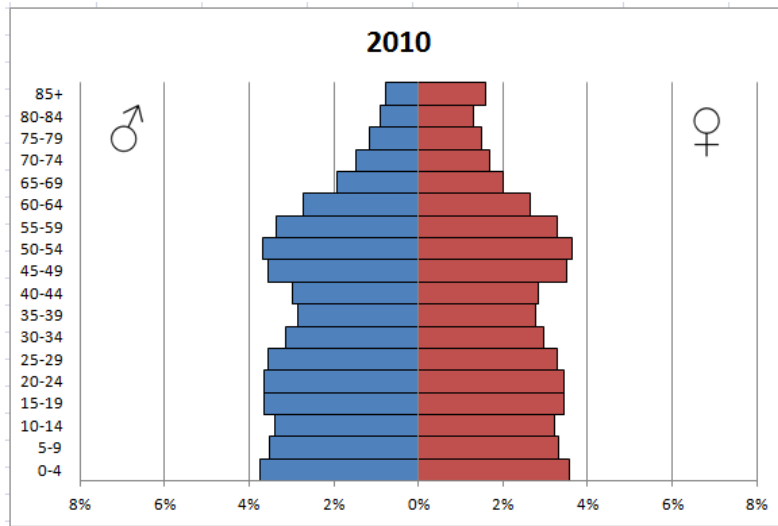
The Boomers' Last Entry

- In 1946, the nation encountered a reproductive anomaly – the low birth rates that occurred during the great depression and World War II came back to a balance. The Fertility rate didn't really increase – but the timing left a glut of births.
- The Baby-Boomers were born between 1946 and 1963 – they began entering the 65+ cohort in 2011, and the last will enter in 2028.
- The first Boomer enters the 85+ Cohort in 2031

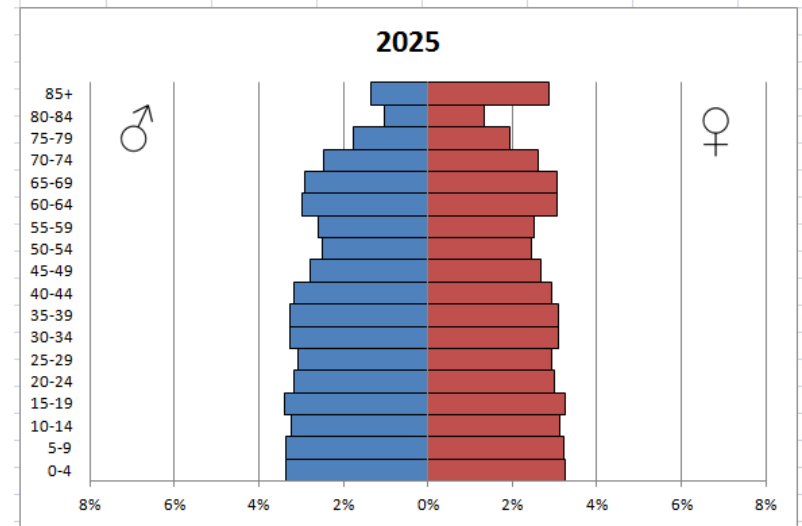
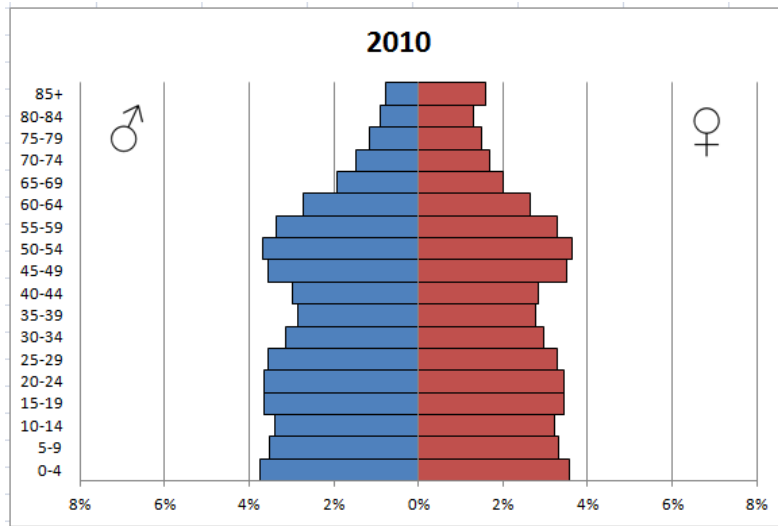
South Dakota – the Aging Boomers



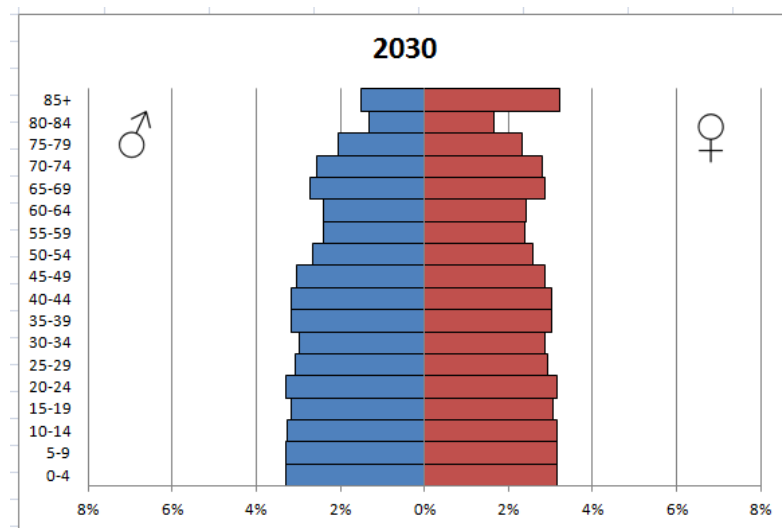
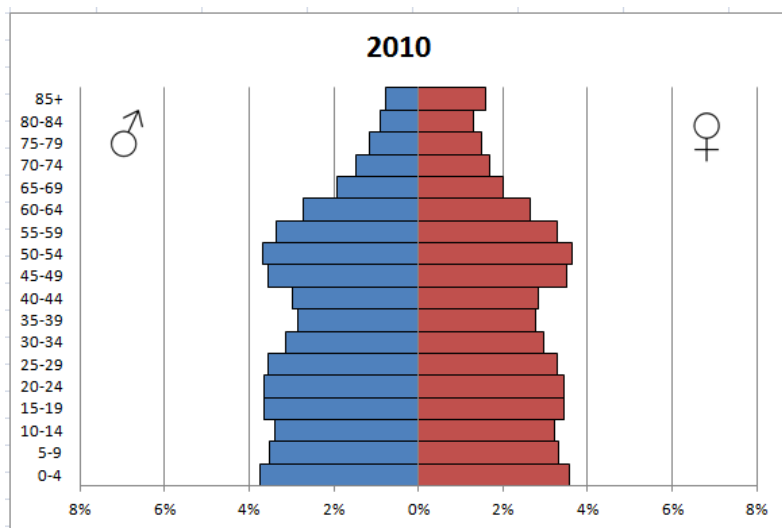
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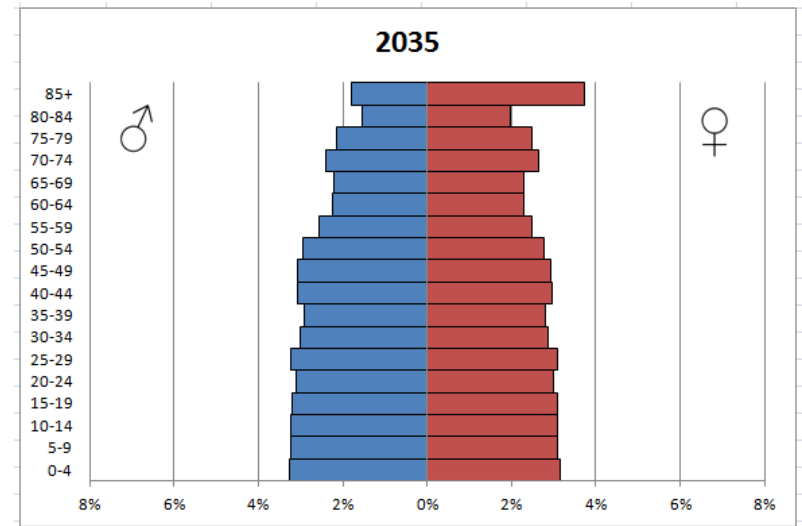
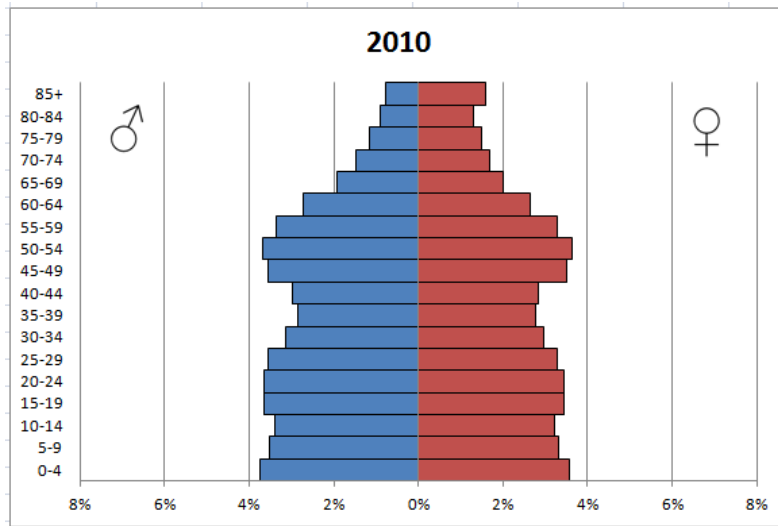
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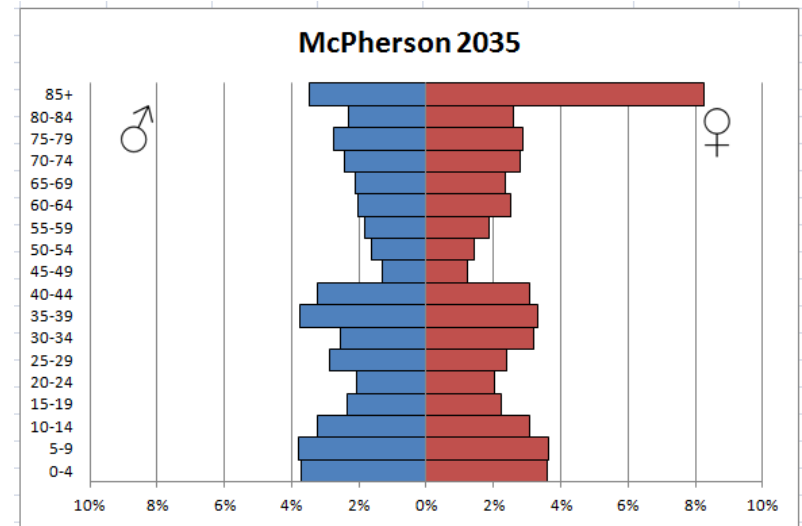
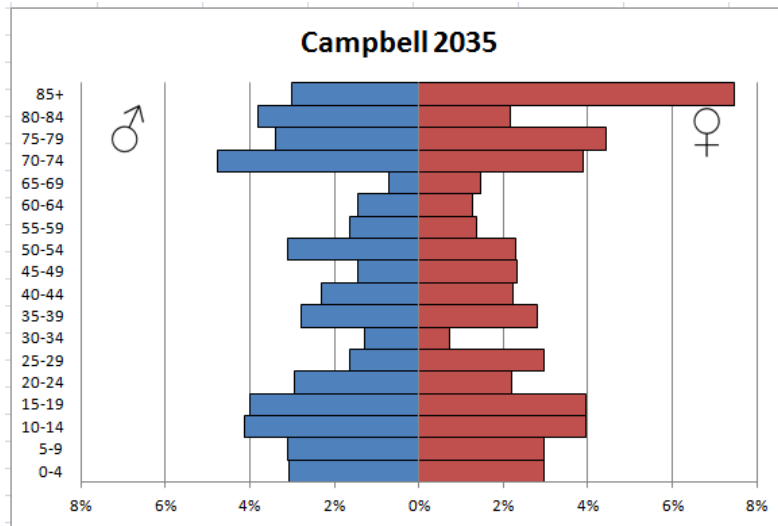
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South Dakota – the Aging Boomers



Let's look at some more aging counties

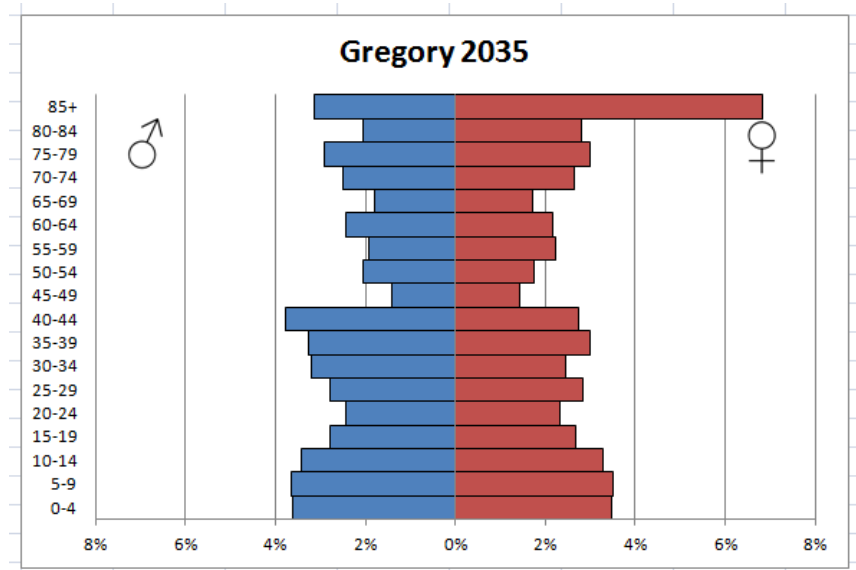
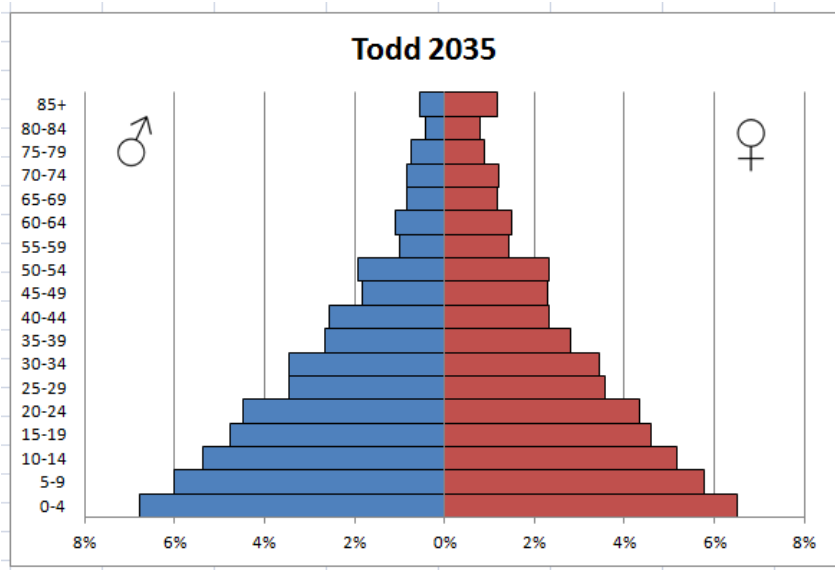


The Projections include

- The final population adjustment for the baby-boom
 - The Boomers needed more schools when they were young
 - Their bulge fueled continued productivity
 - As they age, they'll create a new paradigm about taking care of the elderly
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- We'd better not count on the Cavalry riding in to solve the problem – the future belongs to the young

Planning for 2035?

Who's the Vanishing American?



It's time for questions

- I'll switch from the powerpoint to a spreadsheet that will allow me to display the projections for the specific counties that concern each of you.
- The projections are published on the Census Data Center Web Site, and can be downloaded.
- <http://www.sdstate.edu/soc/rlcdc/general-demographic-data/age-and-sex-structure.cfm>