What has changed in the dairy business since 2009

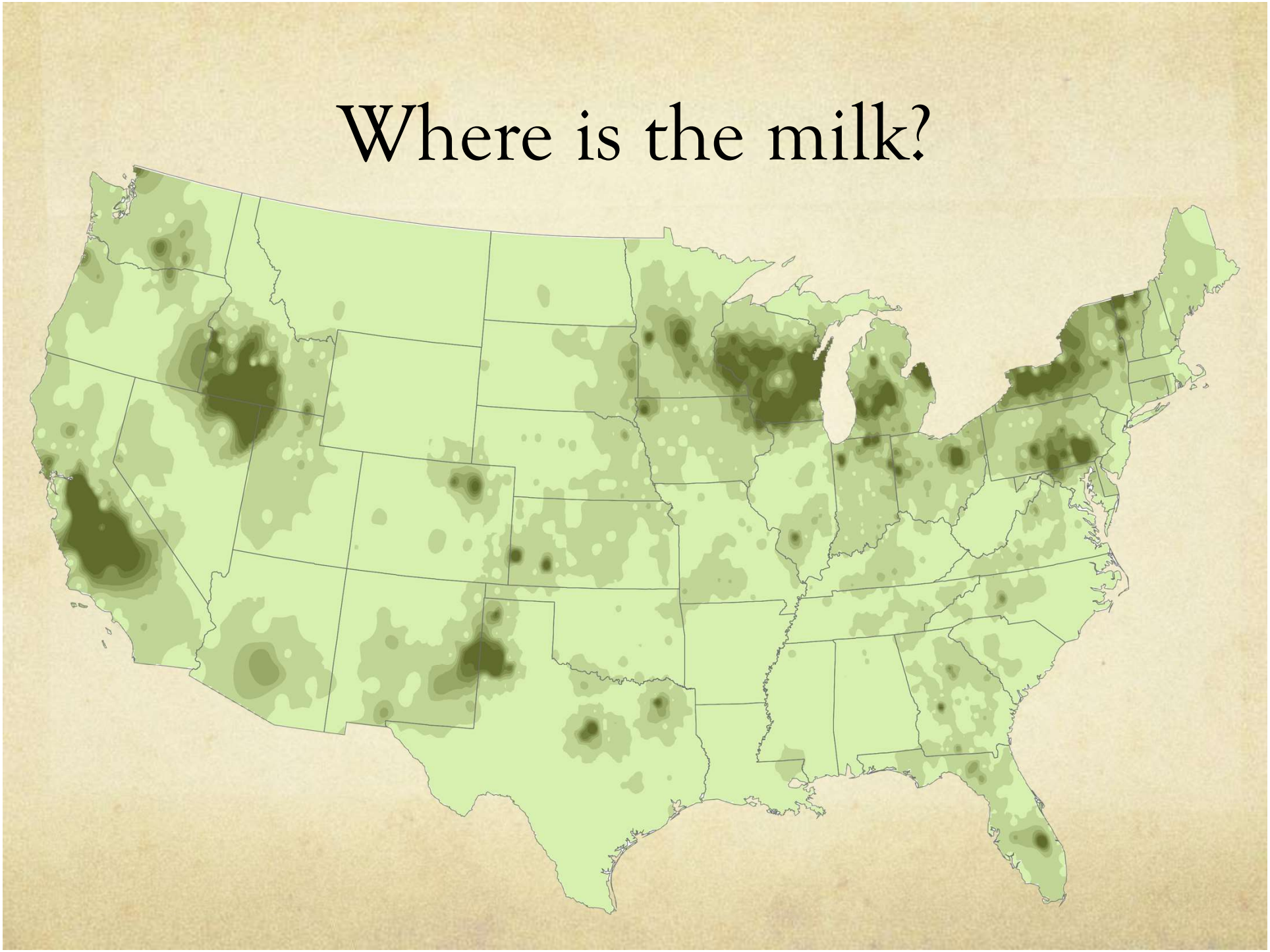
CDCB Industry Meeting

THE UNIVERSITY of WISCONSIN MADISON

Mark Stephenson

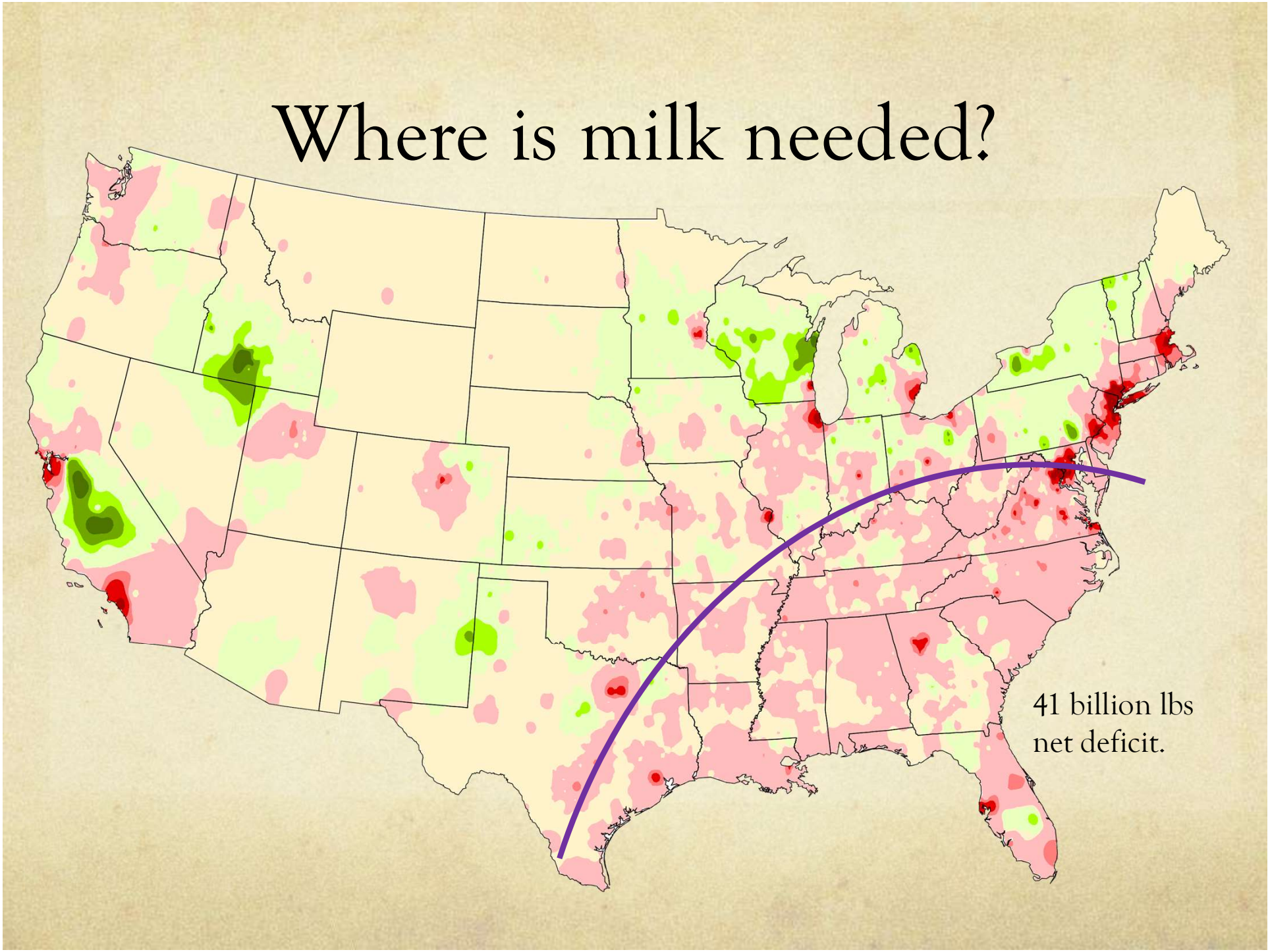
Director of Dairy Policy Analysis

Where is the milk?

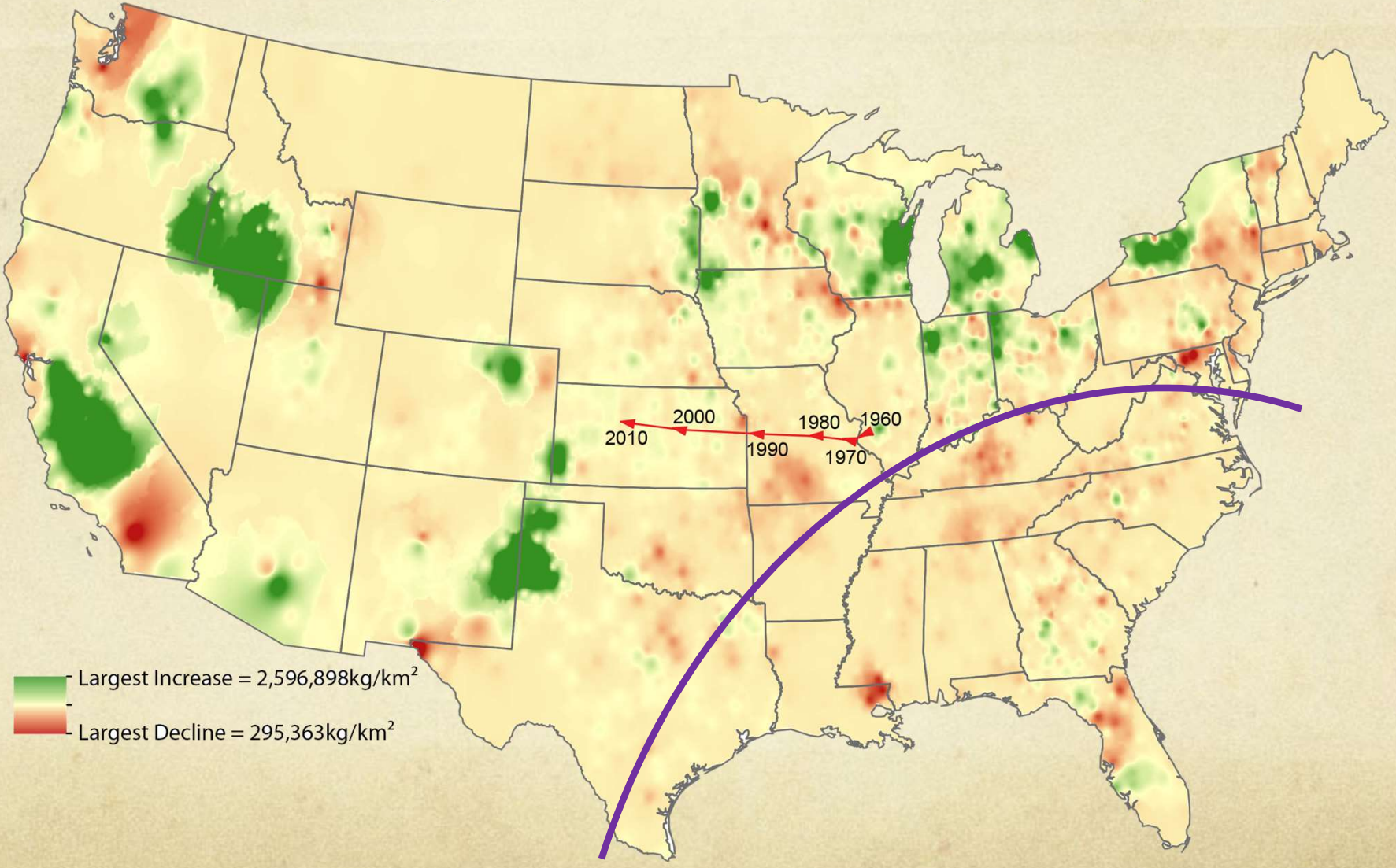


Where are the people?

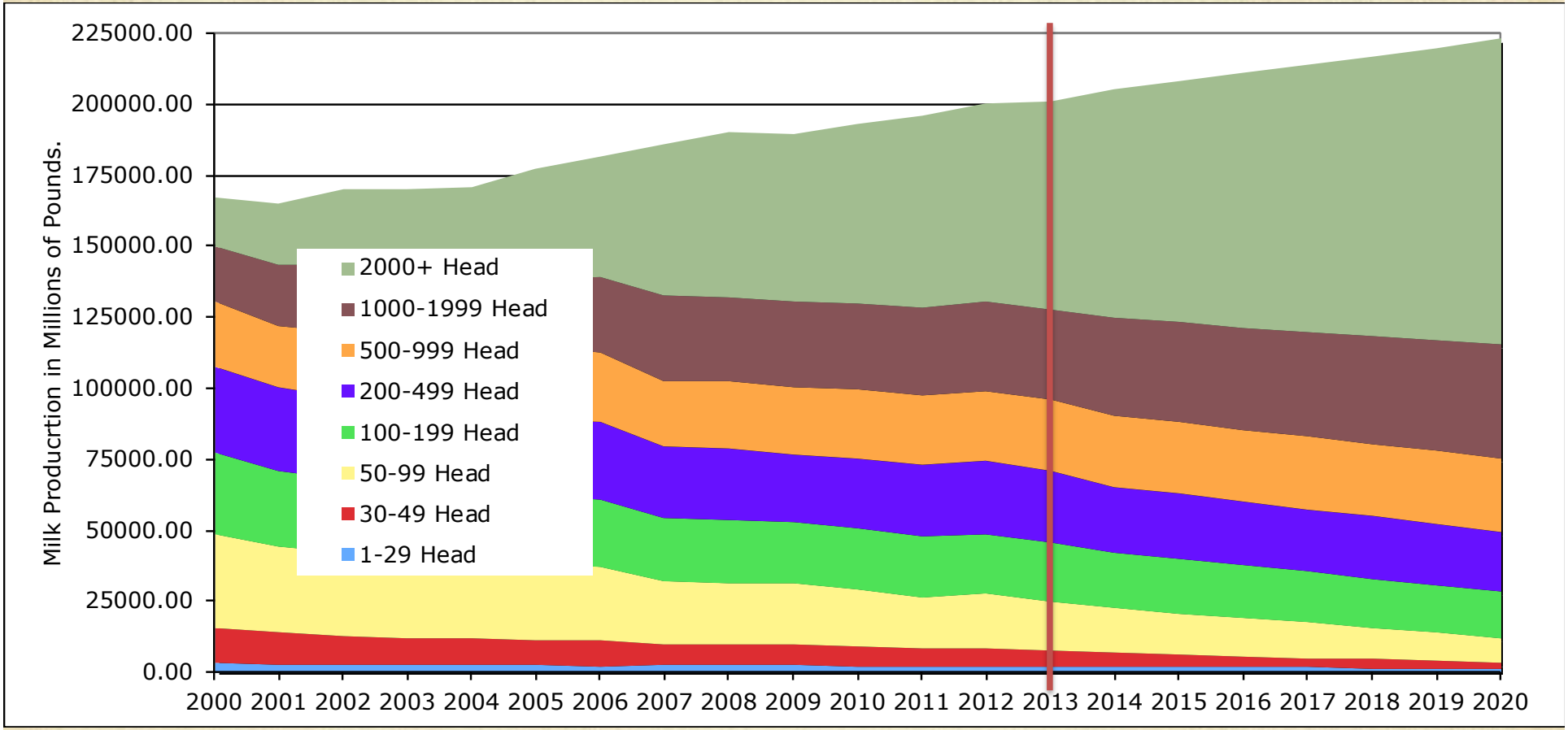
Where is milk needed?



Change in Milk Intensity.

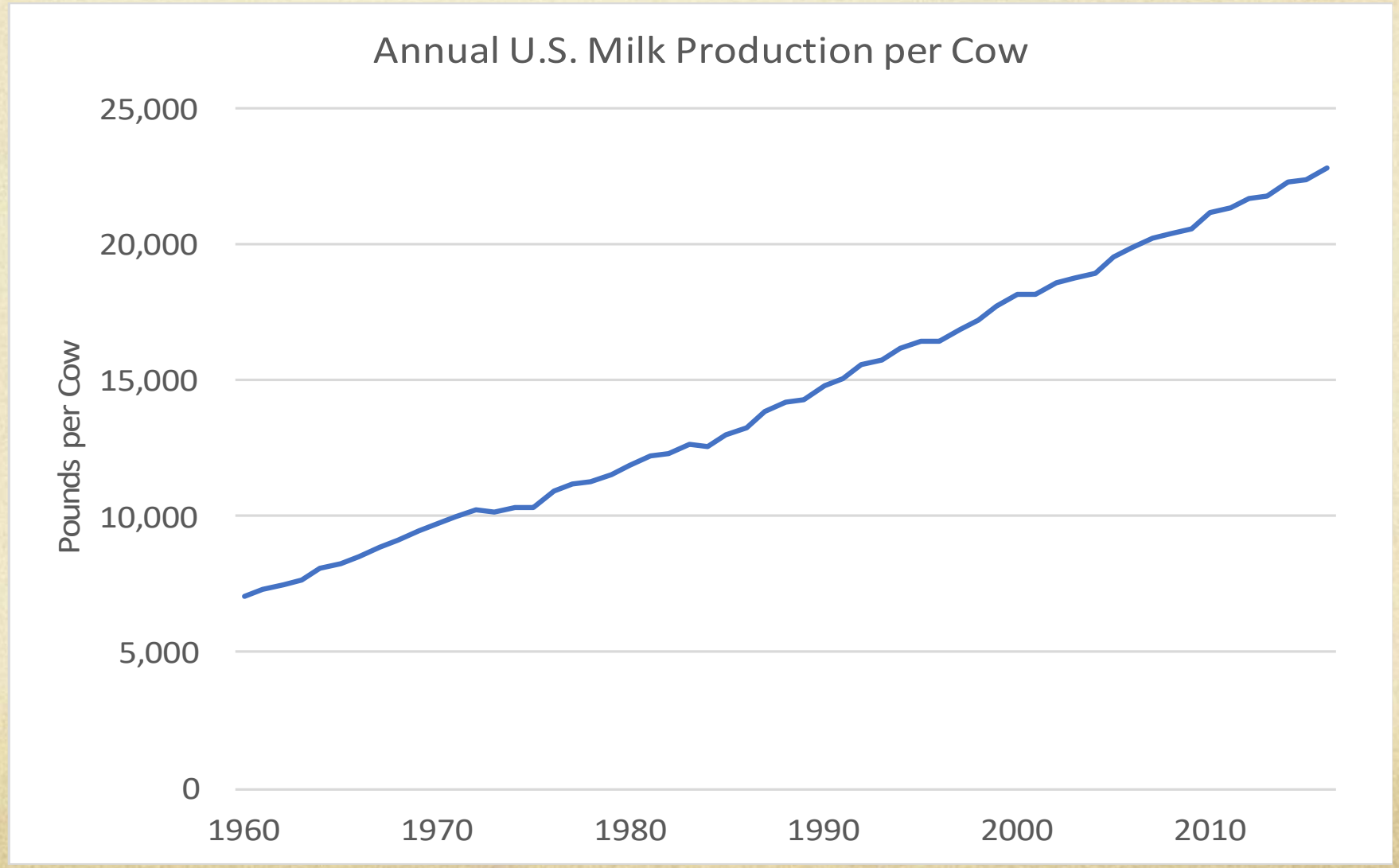


Change in Herd Structure

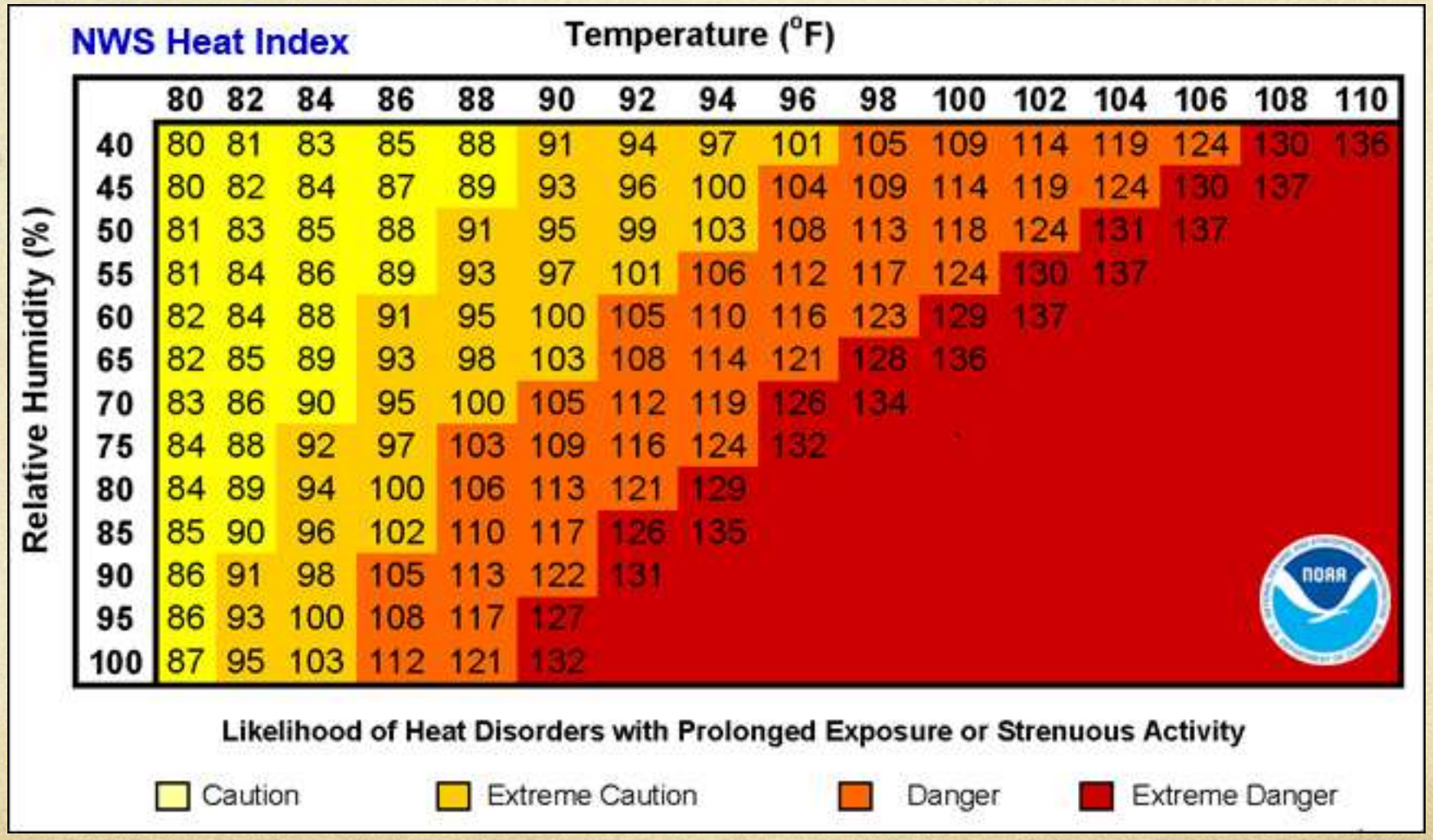


In 2013, more than 53% of milk was produced on less than 3% of the largest herds. Linear trend extrapolation would suggest that by 2020, it will be about 66%.

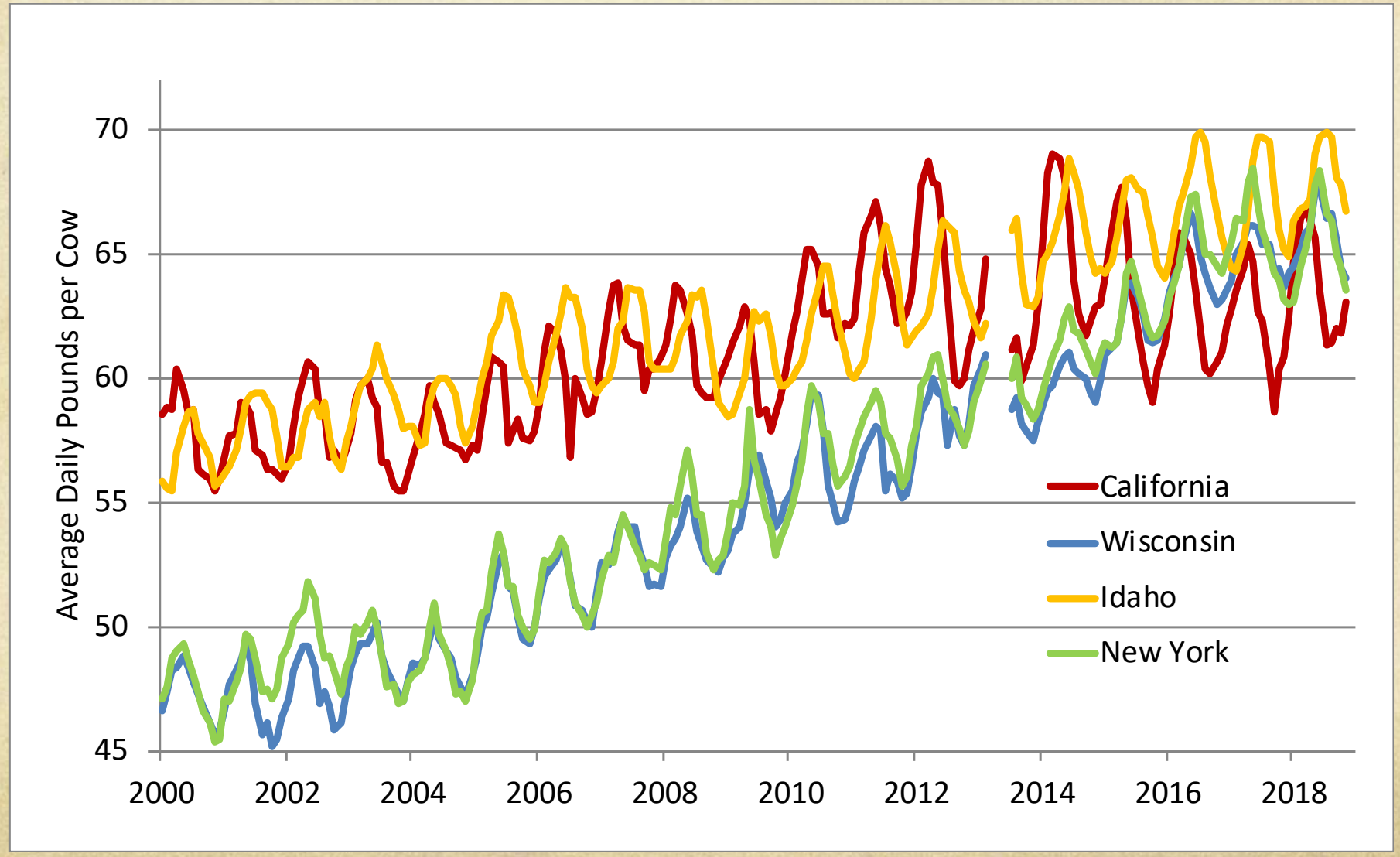
Improved efficiency



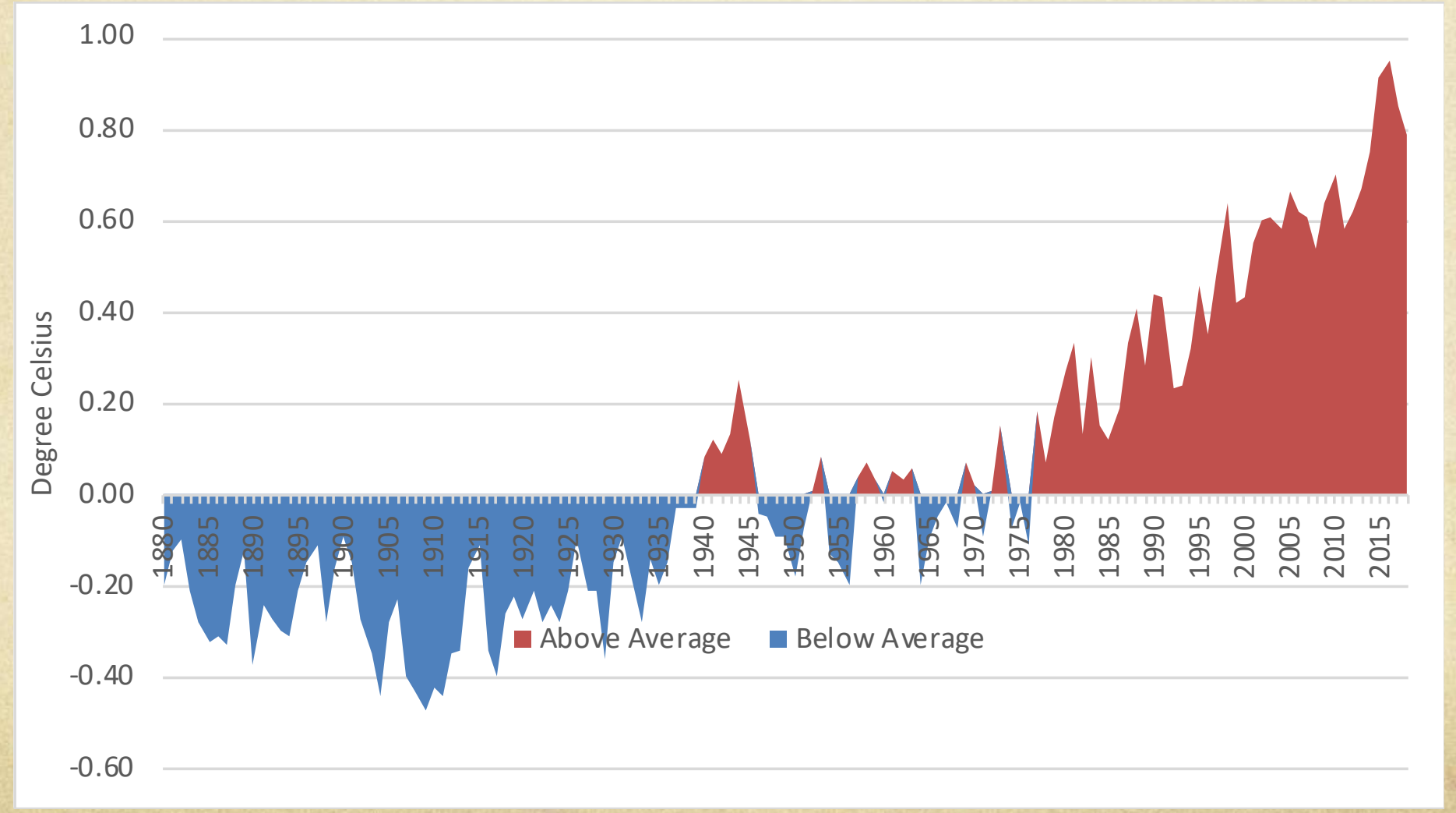
Heat Index–Temp & Humidity



Consider trends in top four states



History of Global Surface Temperature Since 1880



New Federal Report

Climate change will have dire consequences for US, federal report concludes

Jen Christensen and Michael Nedelman, CNN

Updated 3:15 PM EST November 23, 2018

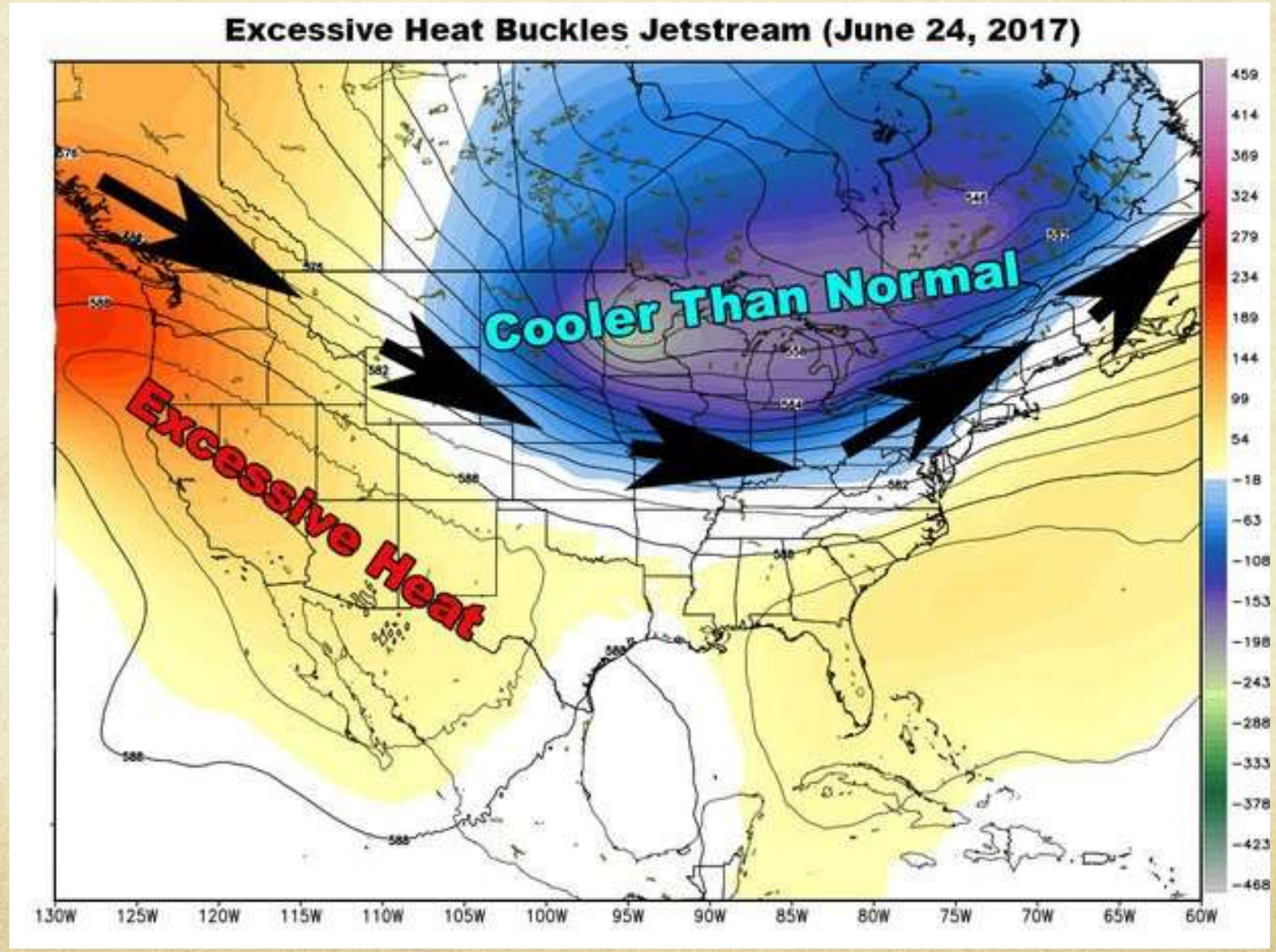
The expense

The costs of climate change could reach hundreds of billions of dollars annually, according to the report. The Southeast alone will probably lose over a half a billion labor hours by 2100 due to extreme heat.

Farmers will face extremely tough times. The quality and quantity of their crops will decline across the country due to higher temperatures, drought and flooding. In parts of the Midwest, farms will be able to produce less than 75% of the corn they produce today, and the southern part of the region could lose more than 25% of its soybean yield.

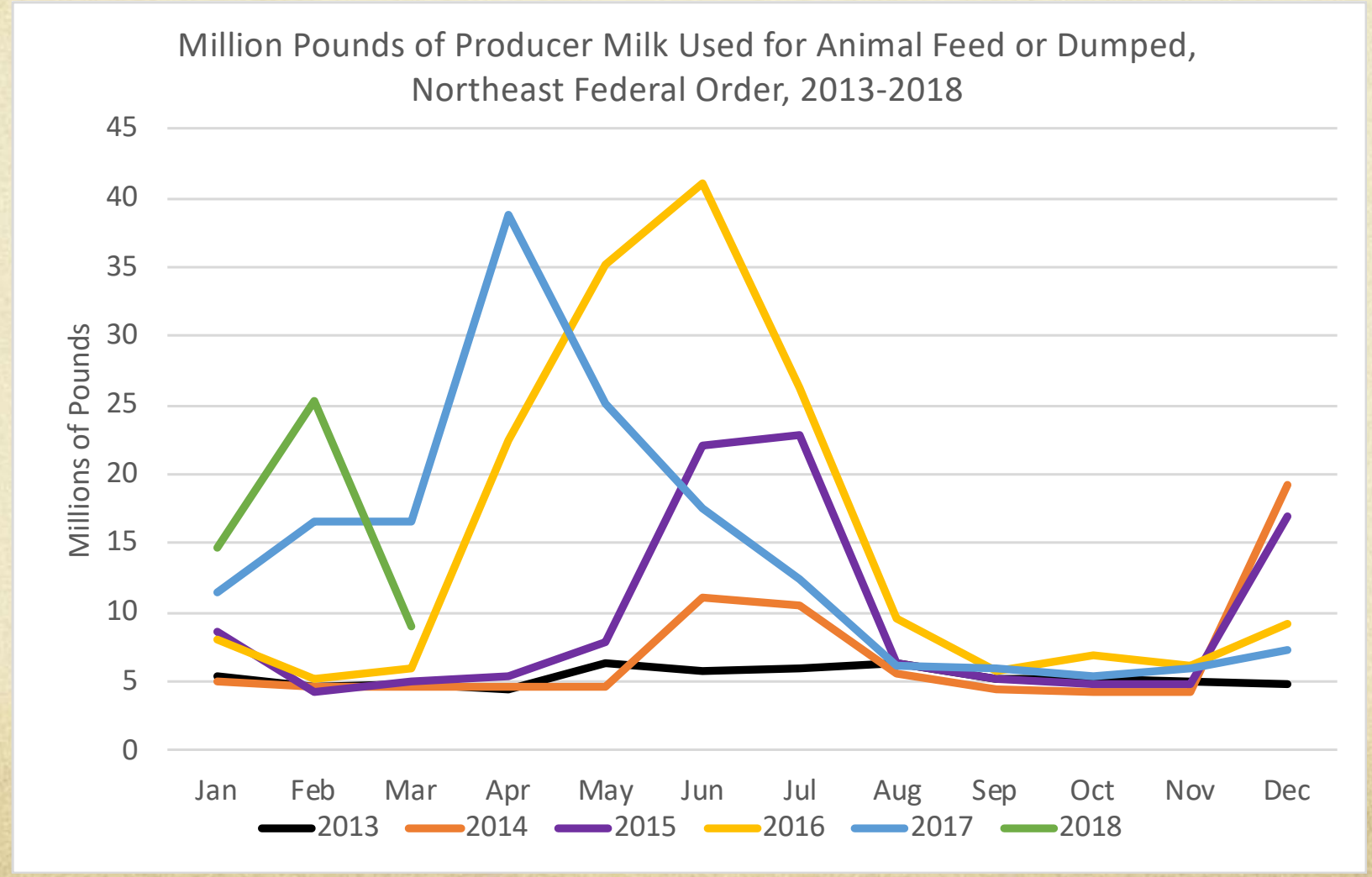
Heat stress could cause average dairy production to fall between 0.60% and 1.35% over the next 12 years — having already cost the industry $1.2 billion from heat stress in 2010.

Temperature Extremes



Location & Volume of Dairy Plants

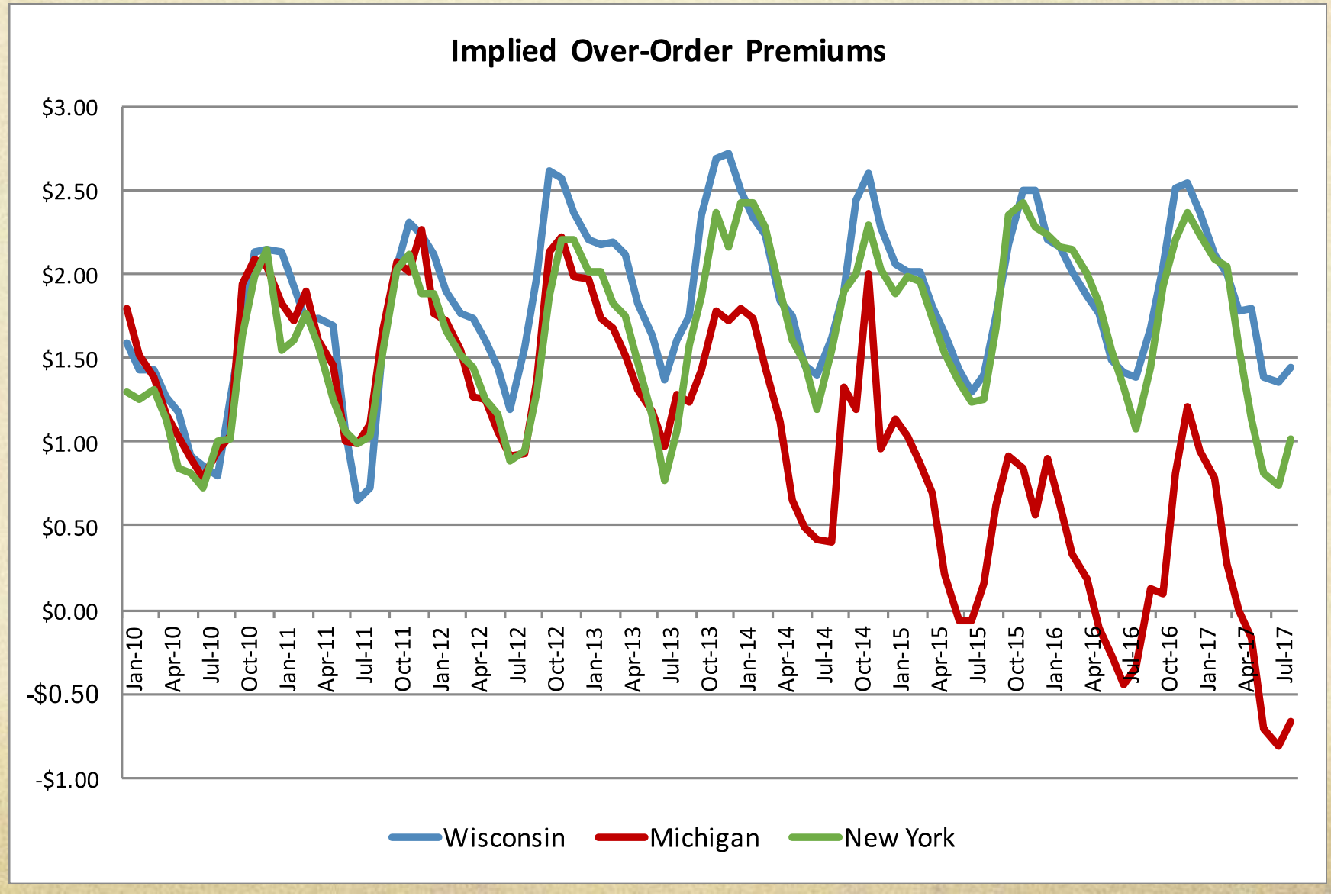
Dumped and Distressed Milk



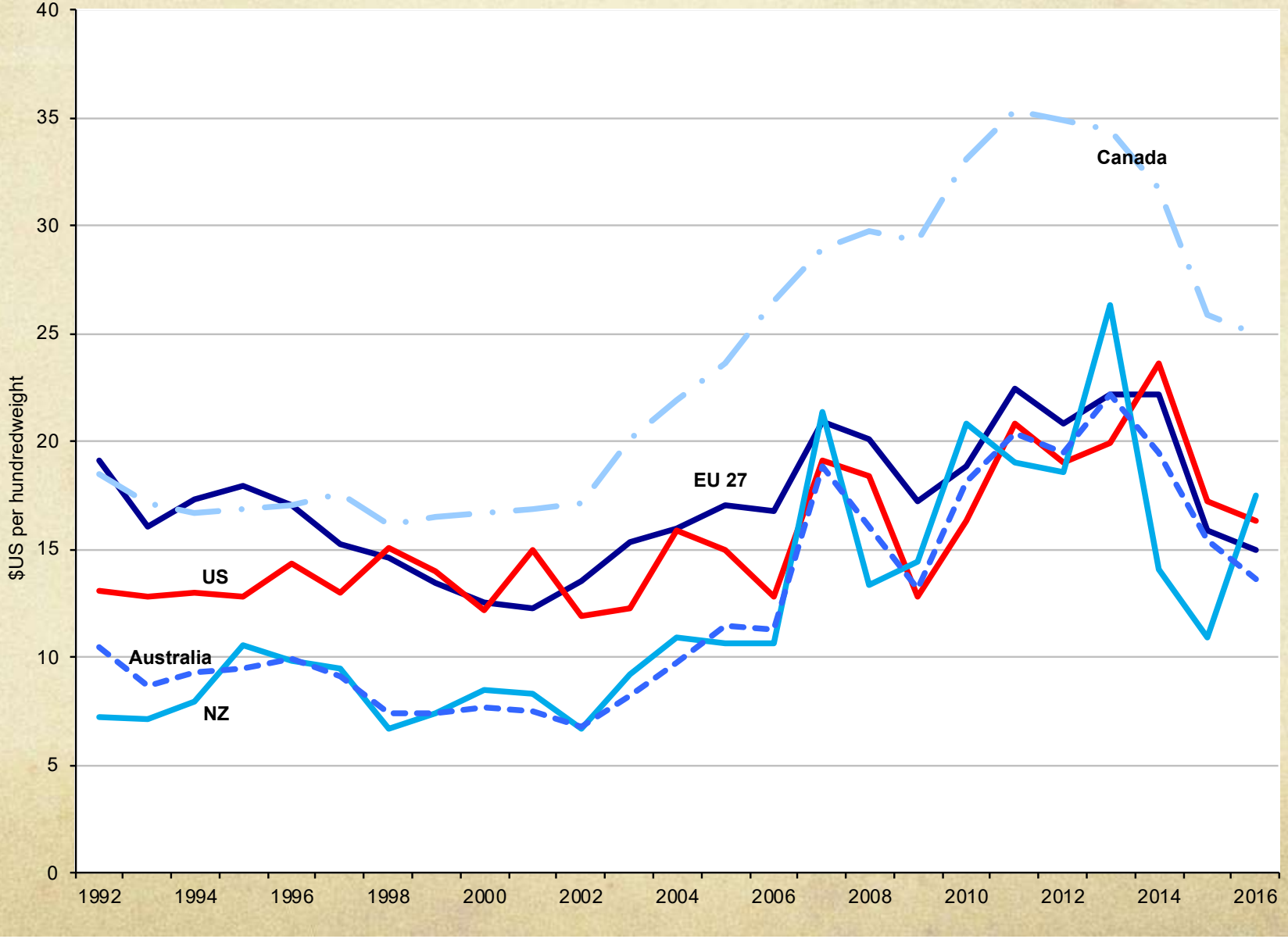
Who are your customers?

- We can build a plant, but…
  - Plants are expensive!
  - Where do we put it?
  - What products do we produce?
  - Who are your customers?
  - How do you get the products to them?
- Raw milk is expensive to move!
- More discussions in coops and elsewhere about some form of supply management.

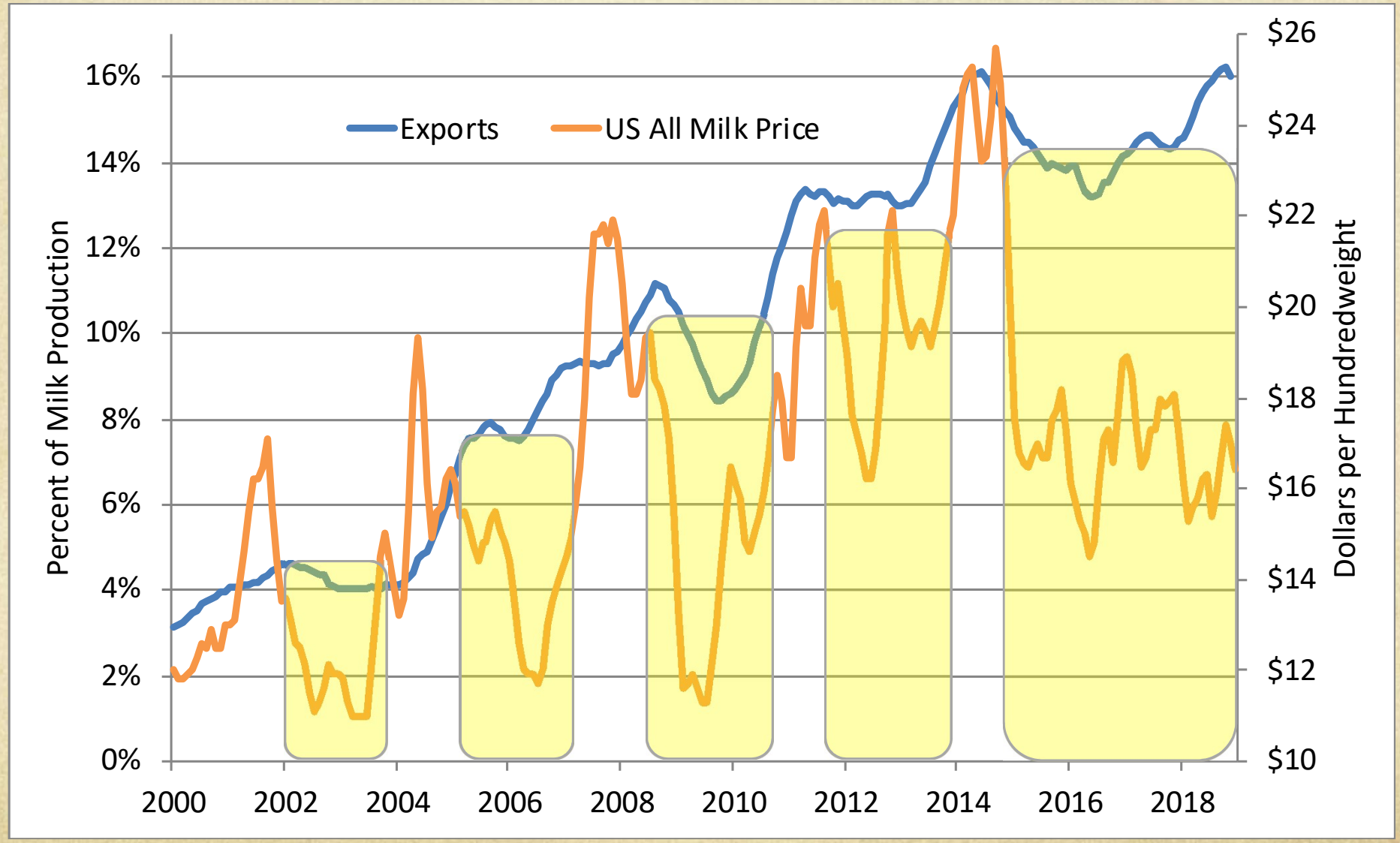
Premiums in the Upper Midwest



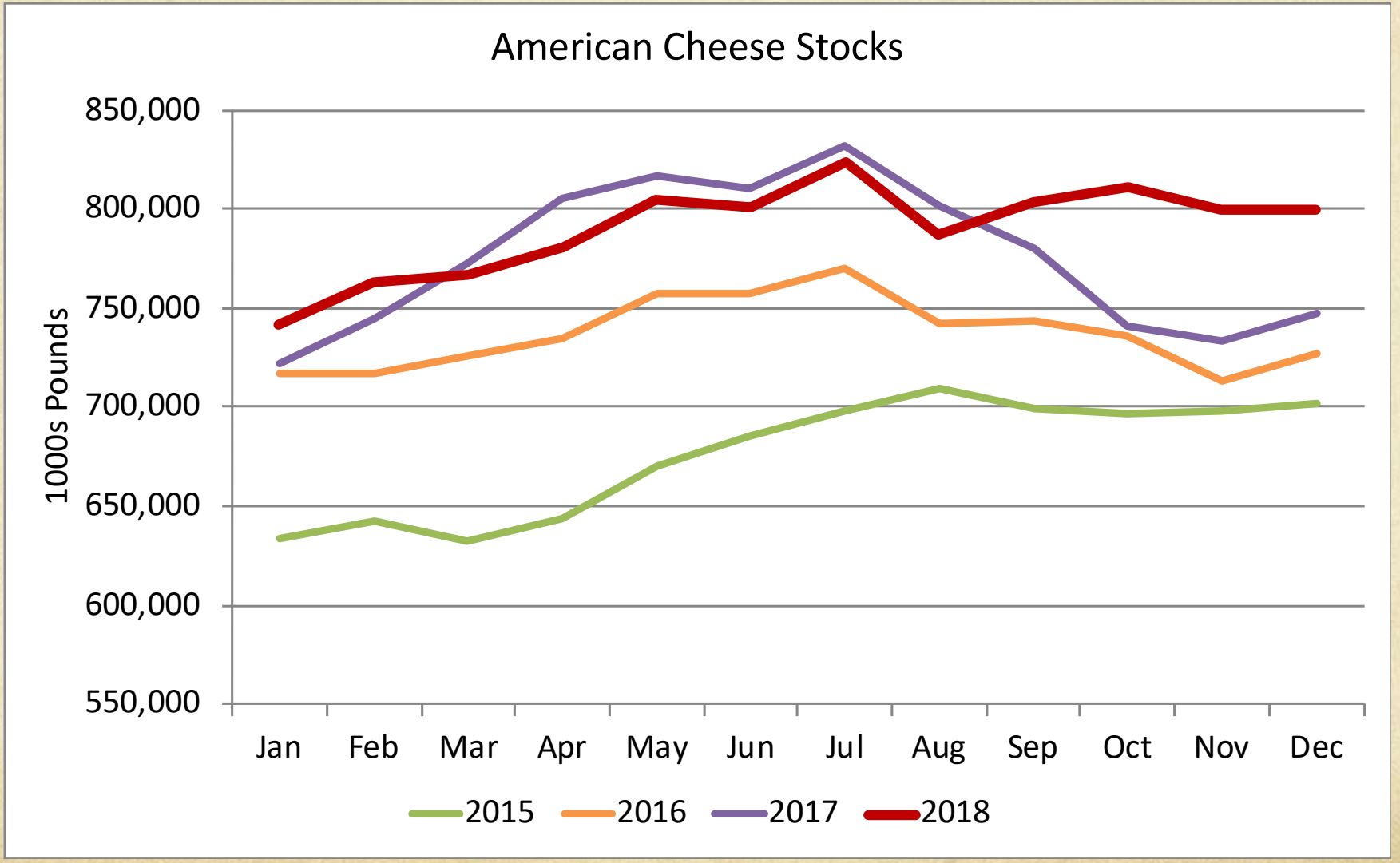
Farm milk prices in selected countries



The Importance of Trade



U.S. American Cheese Stocks



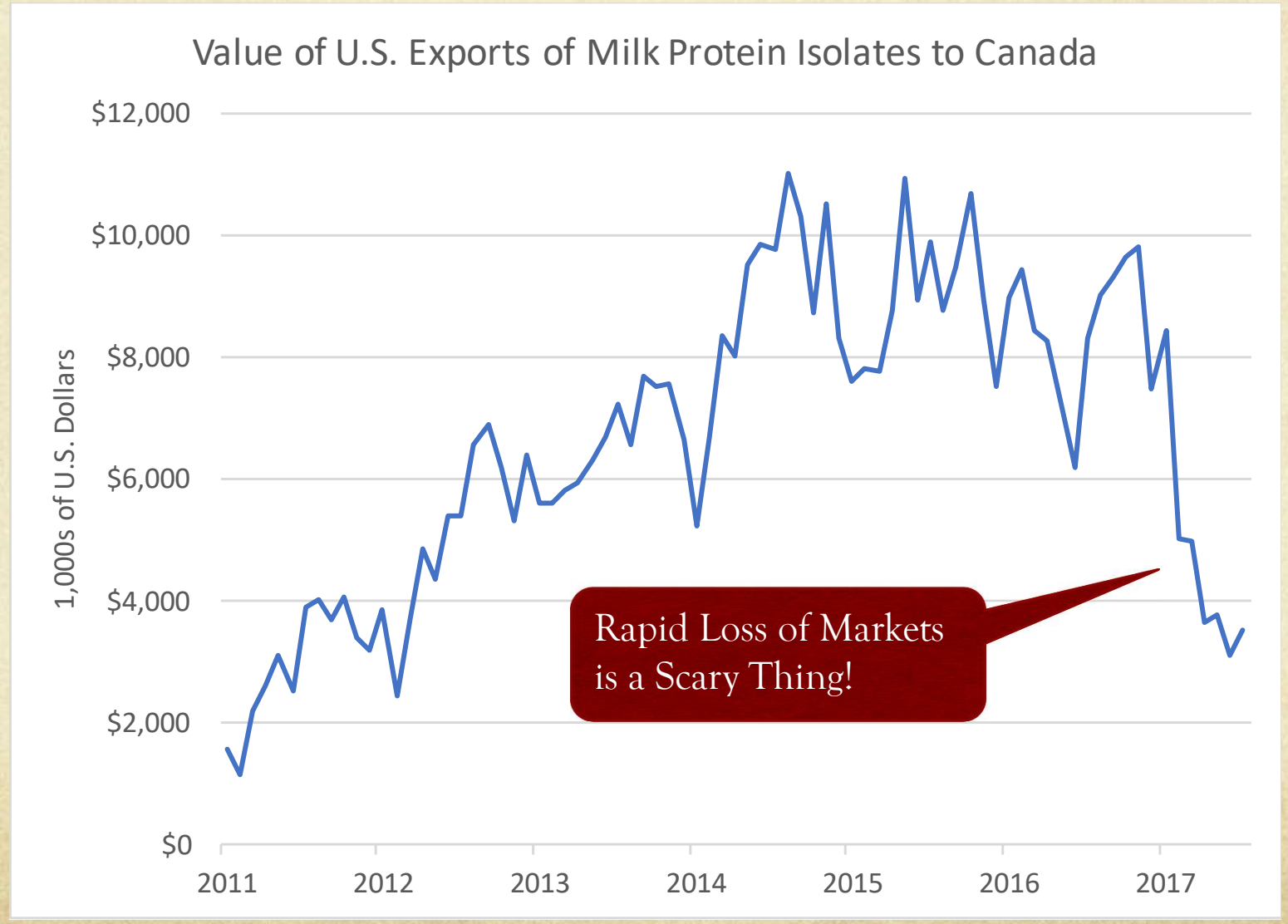
Dairy Trade with Canada

- Canada has a tightly controlled supply management system. Quota is about $30,000 per cow currently.
  - This keeps farm milk prices more stable and quite a bit higher than other countries. (in 2016, WI All Milk price averaged $16.74 while Canada's averaged $23.48)
  - A quota system requires tightly controlled trade
    - High tariffs and import quotas negotiated in 1987 WTO
    - Dairy not included in NAFTA agreement with U.S.
    - Milk Protein Isolates (MPIs) didn't exist in 1987 and have become possible with new processing technology. Since they weren't specified in trade restrictions, they don't have an import quota or tariff.
    - We slipped a puck past the goalie much like MPCs for the U.S. back in the early 1990s.

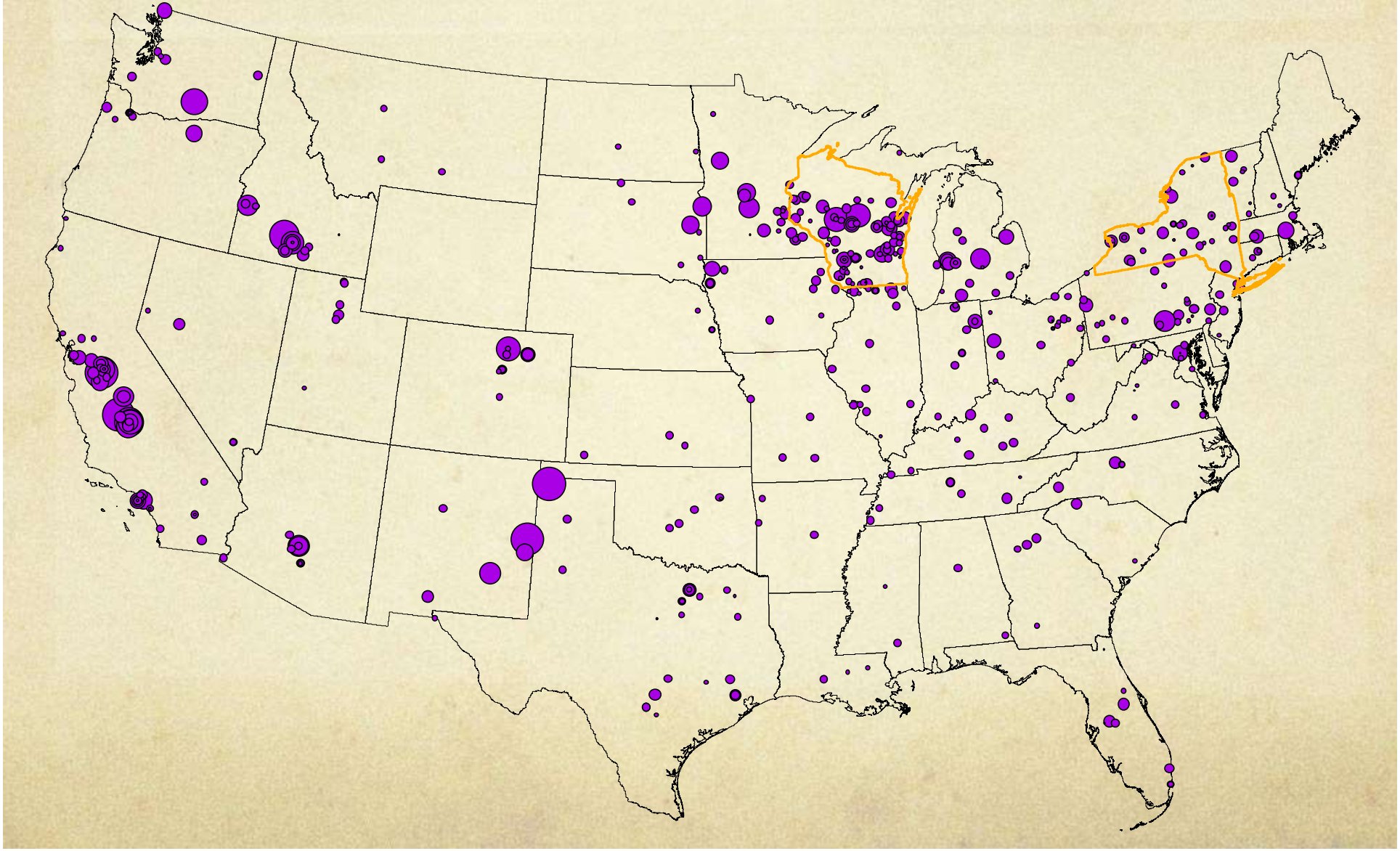
Dairy Trade with Canada

- MPI sales had grown to more than $100 million a year with about half from two plants in New York and half from a plant here in Wisconsin (another small volume from an Idaho plant)
- Canadian cheese processors have markets for more product and want milk for additional sales.
- Canada has a classified pricing and pooling scheme like the U.S.
  - They have created a new ingredients class to produce MPIs domestically that will be priced at “world prices” which effectively halted U.S. sales.

Sales of MPI to Canada



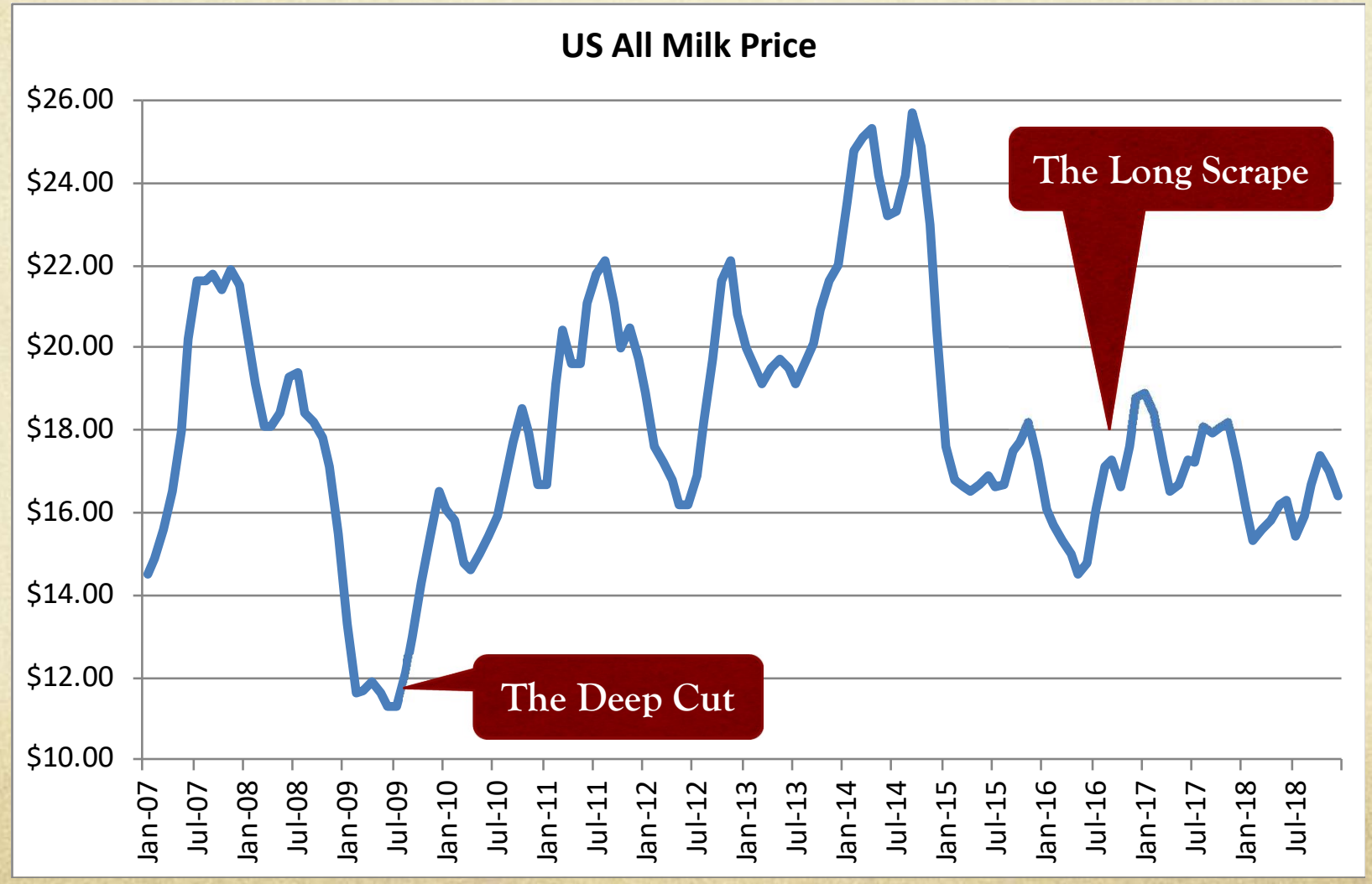
Location & Volume of Dairy Plants



Did I Mention Trade?

MWS1

Milk Price Variation



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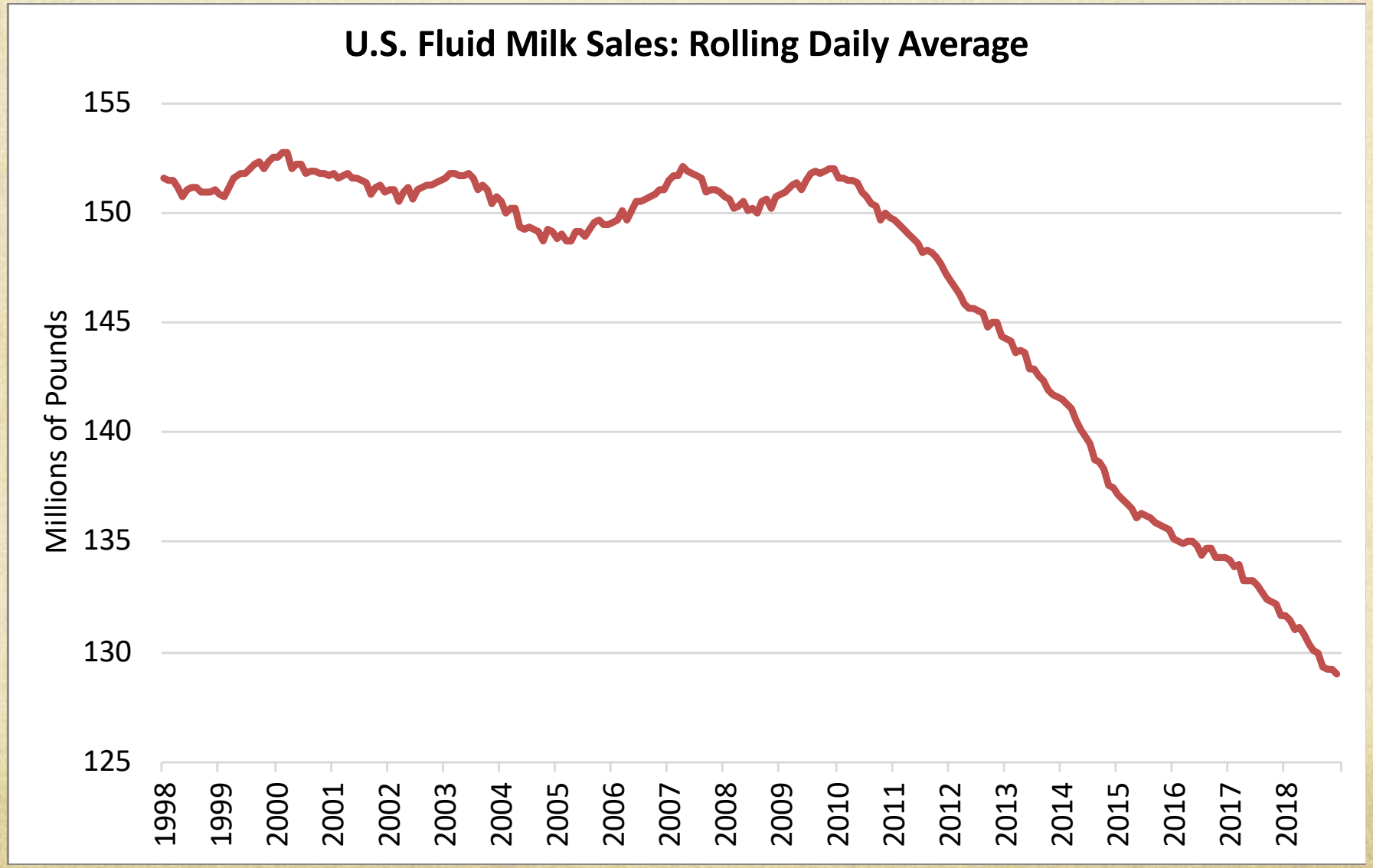
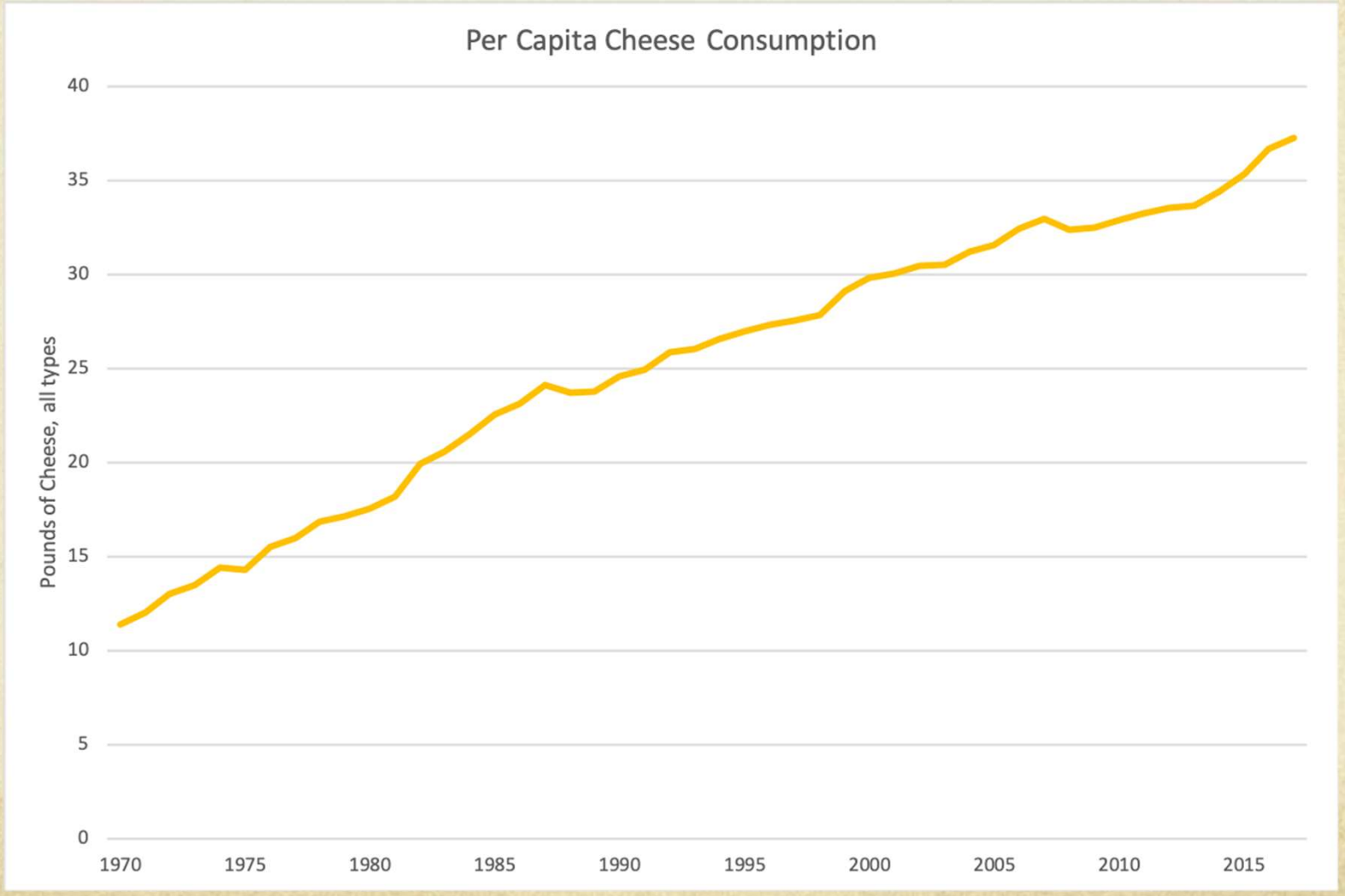
MWS1 Mark Stephenson, 2/23/2019

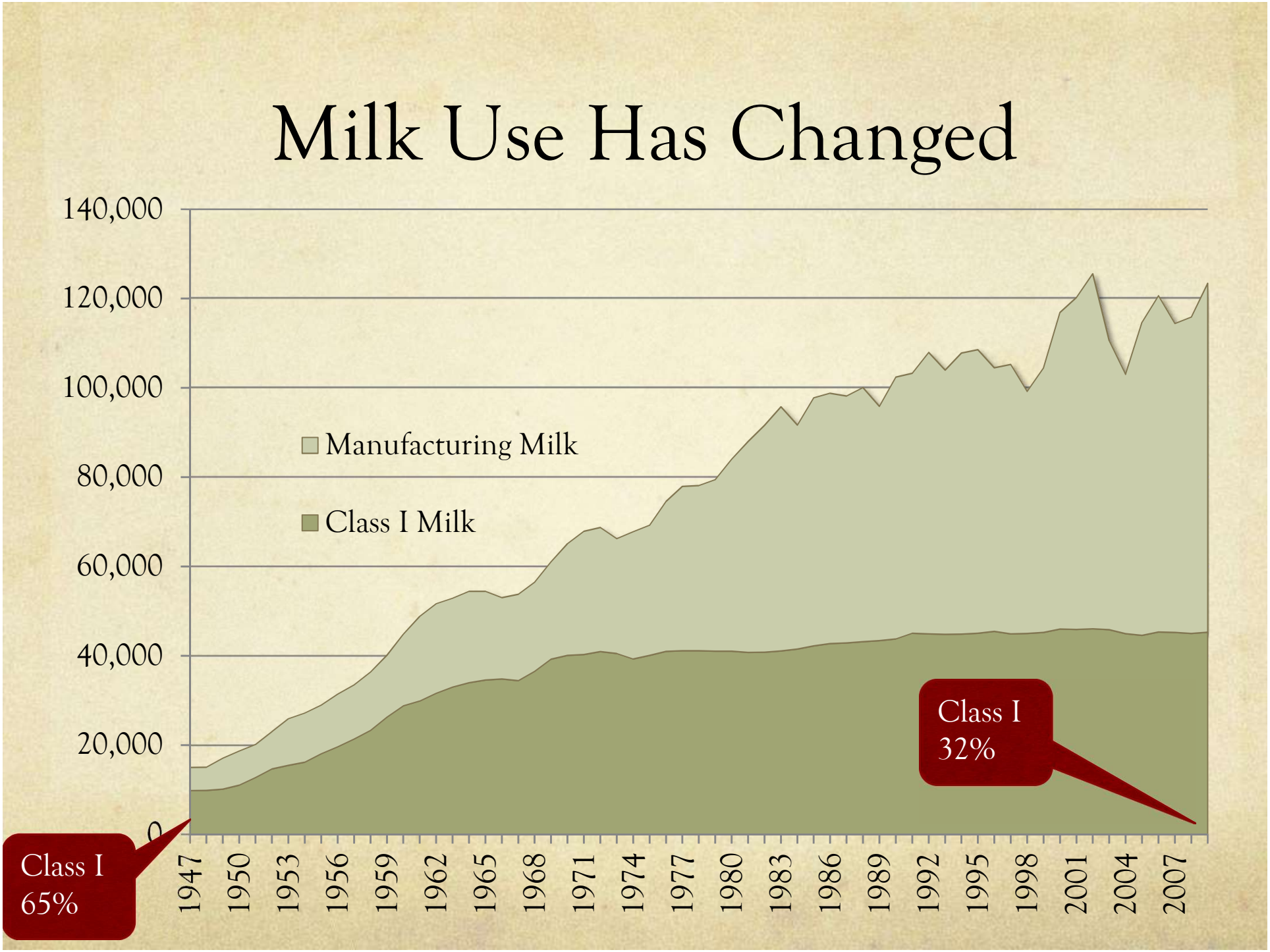
Fluid Sales Decline



It's Not All Bad News



Milk Use Has Changed



Not Much Money in FMMOs

- A $3 differential on top of a $5 manufacturing price when Class I utilization is more than 60% was a lot of money (26% of your milk check)
- A $3 differential on top of a $16 manufacturing price when Class I utilization is less than 30% is not so much money (5% of your milk check)
- In regions like the Upper Midwest or California the value is much less (about 1%)
- Processors need relief in the make allowance
- Do farmers have as much reason to fight for FMMOs?

Summary Observations

- Milk is growing in some regions and taxing plant capacity (Western disease)—puts downward pressure on milk prices
- Production growth for many decades has been almost exclusively in larger herds
- Milk is declining in some regions leaving behind excess capacity—might stimulate milk premiums longer term

Summary Observations

- What happens when trends collide?
  - High-yielding dairy cows like cooler climates
  - Climate is changing
    - Warmer—Cooler
    - Dryer—Wetter
- Regional milk production patterns change and so must food systems.
- Our relentless pursuit of increased yields per cow may be slowing.

Summary Observations

- Trade has been good for the U.S. dairy industry.
  - Exports have supported a level of growth that we couldn't otherwise have had.
  - The shift toward specialty cheeses has crowded out many imports.
- There are some downsides to our role in world dairy trade
  - Greater susceptibility to price volatility
  - Milk and dairy products can back up into stocks during a downturn.

In Summary…

- Trends in productivity are pushing against trends in climate
- We have seen milk production increases in the Northeastern quadrant of states—declines in the West and Southeast
- Plant capacity *may* be an issue, but a bigger factor is probably who the customer is for the product
- Changes in how much milk is produced and where are expressed as changes in milk prices.
  - Exports move the U.S. price up and down
  - Regional shifts change the "tilt" or pattern of prices
- I believe that some form of supply management, most likely not a national program, will become prevalent

Questions...