

Toward a Sustainable Food System in Kansas

Craig Volland

July 21, 2012

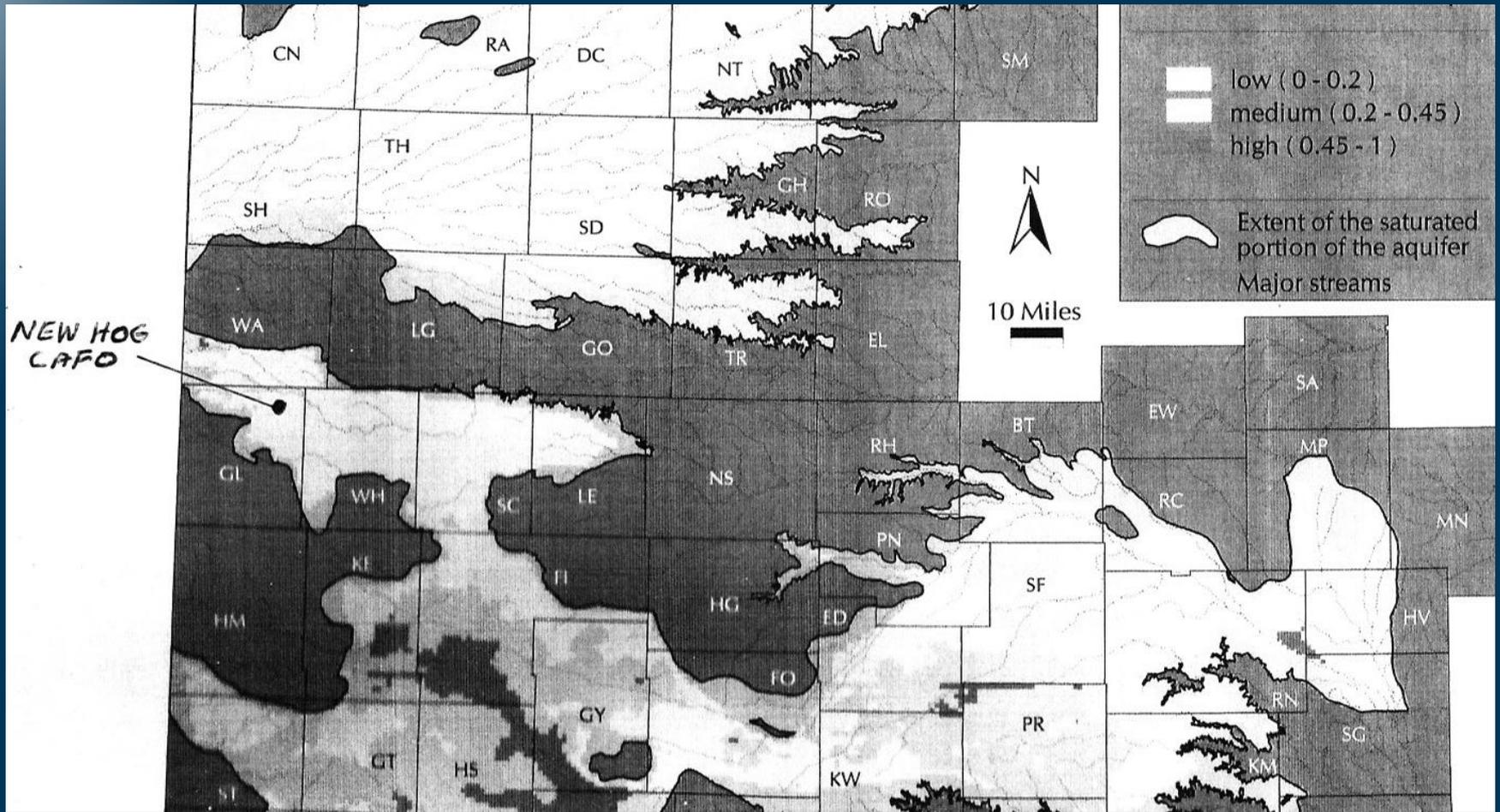
A Poster Child for an Unsustainable Food System

Seaboard Foods New *Ladder Creek Hog*
Factory in Greeley, County Kansas

Manure Generation Equivalent to Building Another Wichita in Far Western Kansas

- 132, 000 Finishers (260 lbs at slaughter) or
- 264,000 growers
- On 6 square miles of land with
- Ten @ 8 to 11 acre anaerobic lagoons
- Largest hog factory in Kansas

Sits Over the County's Limited Water Supply



Extreme Decline in Aquifer

Ladder Creek

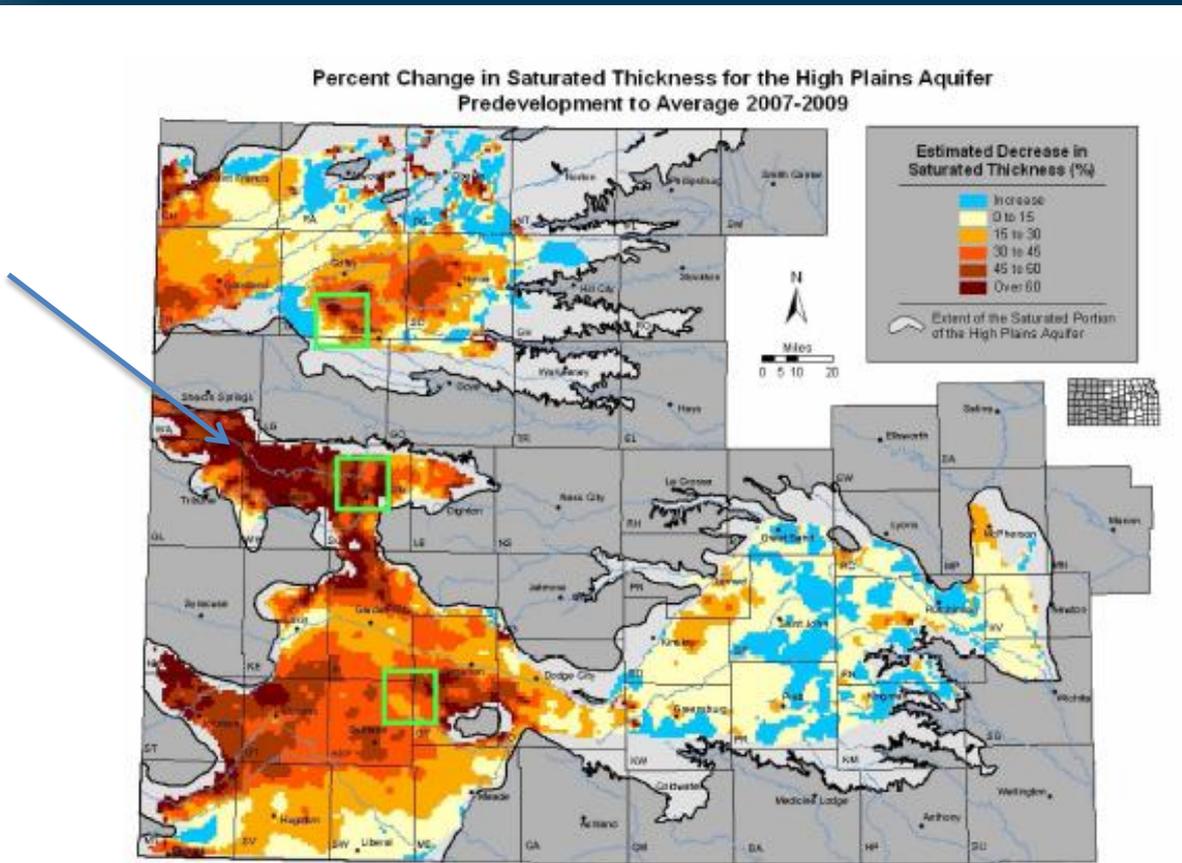


Figure 2-1: The western (Ogallala) portion of the High Plains aquifer, with aquifer and county boundaries shown. The colored pixels represent one section (1 sq. mi.), coded to show the degree of groundwater depletion from the beginning of large-scale development to the average of conditions in 2007-2009. The three outlined areas are the calibration well study sites, shown in greater detail in Figures 2-2 through 2-5, and described in the text and Table 2-1.

Heat Stress and No Water Will Soon End CAFOs in Western Kansas

- It's not just about watering the animals, flushing the pits and filling the lagoons;
- It's the large quantities that must be pumped to support the crop yields needed to take up the waste;
- After crops are no longer viable, operators will turn to evaporation ponds;
- Should we be evaporating water in W. Kansas?
- What happens to residual concentrates?

Intensive Confinement Technology and Global Warming



Figure 19.
Crowding in Hog CAFO
Animals in CAFOs are
packed tightly together.

Photo credit: Courtesy of
Farmsanctuary.com.

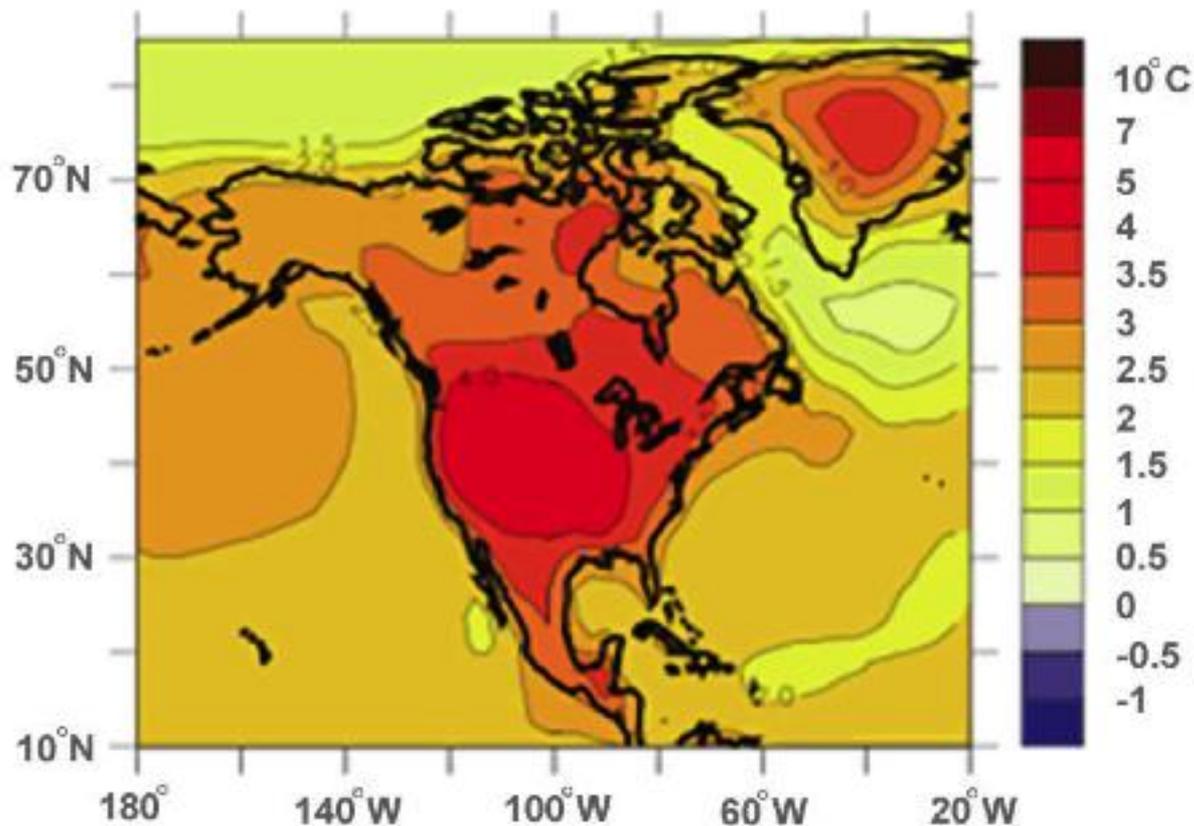


“Broiler” Chicken Barn





JJA



Kansas is in the cross hairs of global warming. The International Panel on Climate Change projects an increase in average summer temperatures of 4 degrees C (7.2 degrees F) *or more* towards the end of this century.

This graphic from the IPCC website (www.IPCC.ch) compares temperatures from June to August in the years 2080 to 2099 to what we experienced from 1980 to 1999. These projections are based on a "business as usual" increase in emissions of heat-trapping greenhouse gases, although the scenario does assume that the world population will level off by mid-century. So it could be even worse. ***Business as usual, such as the construction of coal-fired power plants, is not acceptable.*** Future generations cannot reach back in time to save themselves. It's clear. We must do it for them... starting now.

IMPACTS ON AGRICULTURE - Animal Husbandry

- Modest increase in pasture productivity in E. Ks but not in W. Ks, countered by:
- Losses in animal weight gain and breeding productivity from seasonal *heat stress*
- More disease
- Higher confidence (compared to crop impacts) that W. Ks will suffer net loss

It's Already Happening

The Kansas City, Star
Sept. 26, 2011

Livestock endured mass death in the heat

Is factory farming to blame for what critics call a "horrible" toll this past summer? Experts disagree.

During one of this summer's extreme heat waves, fans circulating air in a barn housing almost 5,000 hogs near Kirksville, Mo., stopped because of a power outage.

Half the hogs died of heatstroke.

On a southeastern Kansas farm, in another heat wave, fans were working but temperatures inside the turkey barns reached more than 105. More than 4,000 turkeys died.

In several states, including Kansas, thousands of beef cattle crowded in outdoor pens with little or no shade baked alive when the sun's heat grew so intense that sprinkling water on them did no good.

So far, evidence of such livestock calamities is only anecdotal — reliable and comprehensive statistics aren't available. But some say it's already clear that livestock in confined pens or factory farms are more vulnerable to mass deaths.

On one side are those who believe that disasters such as this year's are becoming more commonplace with the advent of corporate farming.

"Horrible," said Paul Shapiro, senior director of farm animal protection with the Humane Society of the United States. "It is just an unimaginable way to die."

Shapiro and some others say that when livestock are warehoused by the thousands, extreme

By KAREN DILLON
The Kansas City Star



NEWS RELEASE

UNITED STATES DEPARTMENT OF AGRICULTURE • FARM SERVICE AGENCY

For Immediate Release

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Iowa FSA Provides Livestock Assistance for Recent High Temperatures

Des Moines, Iowa, July 21, 2011 – Livestock producers who incur eligible livestock death losses due to the recent extreme temperatures and other adverse weather events may be eligible for the USDA Farm Service Agency’s (FSA) Livestock Indemnity Program (LIP).

”Extreme” temperatures have impacted many of our livestock producers. Those producers who have suffered eligible livestock losses should contact our offices to file a notice of loss.” said John R. Whitaker, State Executive Director for Iowa’s Farm Service Agency.

Taxpayers are footing the bill!

Industrial Agriculture in the Flint Hills

- Application of Industrial Engineering Principles to a Living System Without Regard to Cost Externalities;
- Intensive range burning and overstocking damages wildlife habitat to get extra 10-15% weight gain.

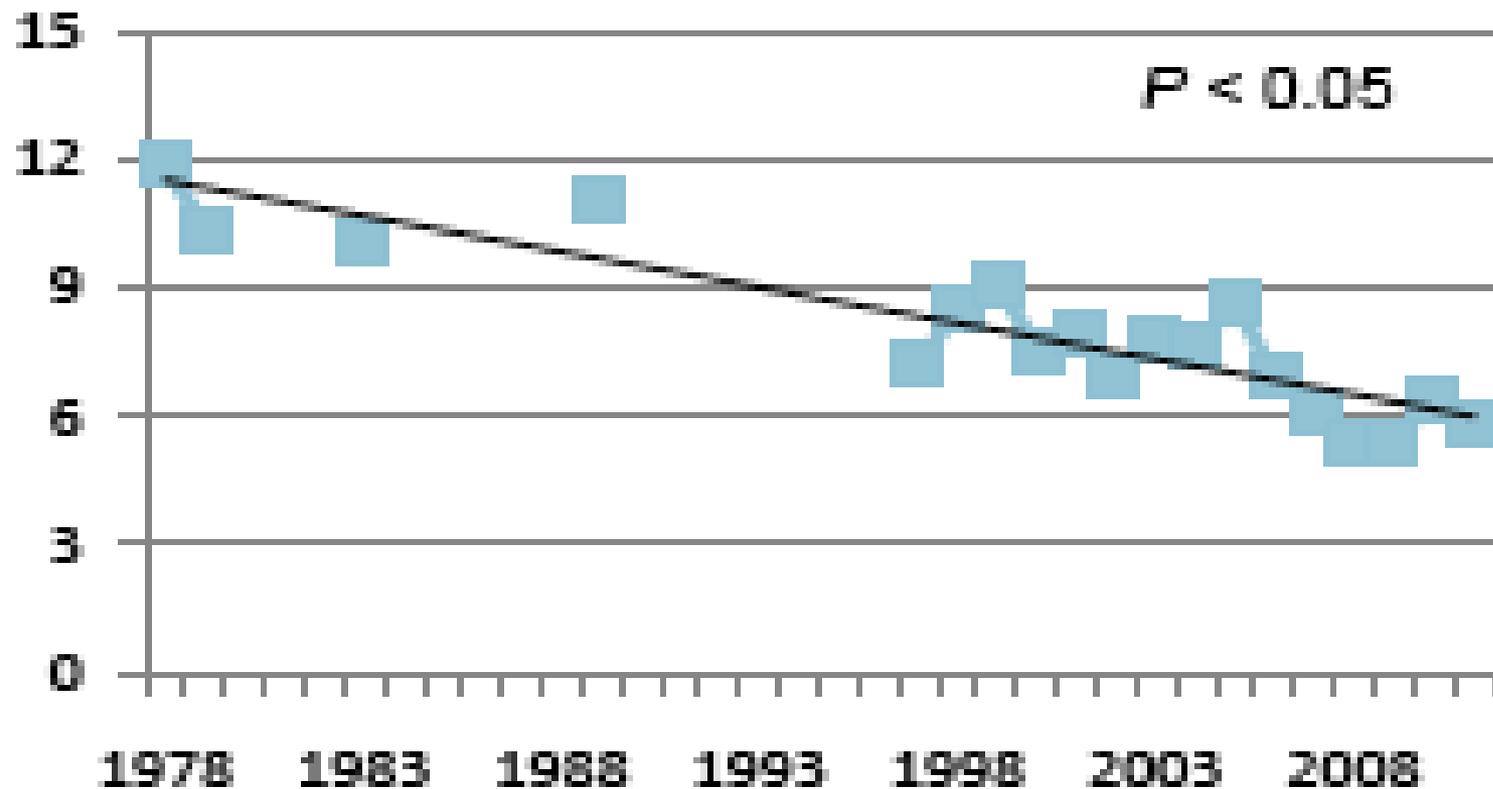




2011 GPC Population Survey

Source: KDWPT

Flint Hills ($n = 9$; GPCH)



Intensive Early Stocking Mode of Impact

- **GPC nesting starts in early April**
- **Most Intensive burning typically mid-April**
- **Destroys early nests**
- **Destroys cover for nesting;**
- **Re-nesting occurs but, overstocking limits “grow back” & new cover**
- **Exposure to predators**

Where is the most burning occurring?

- **In prime GPC habitat!**
- **Prime habitat is in large, open areas of 95% grass;**

Unfragmented land -
prime GPC habitat

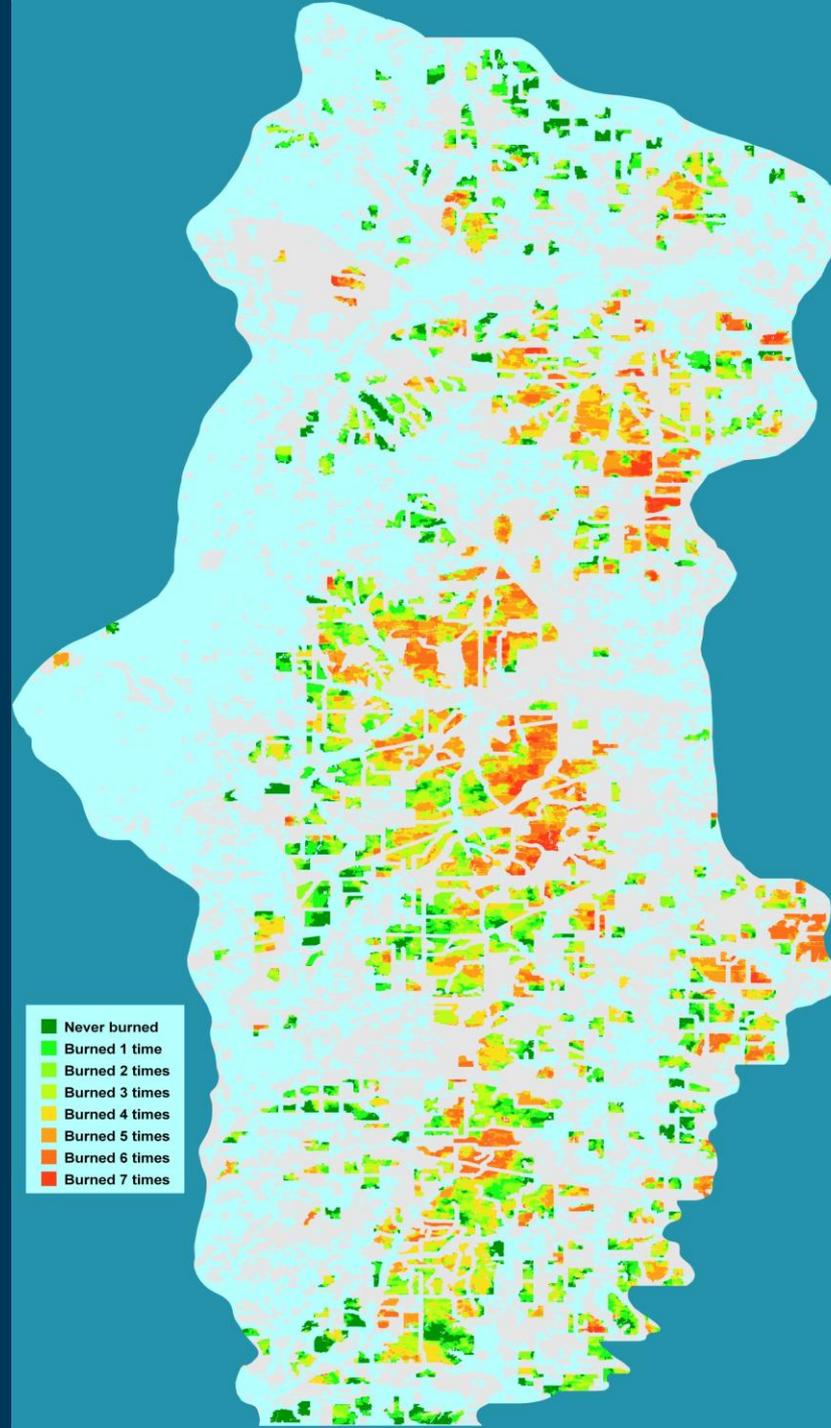
Min. 640 acres of 95% grass



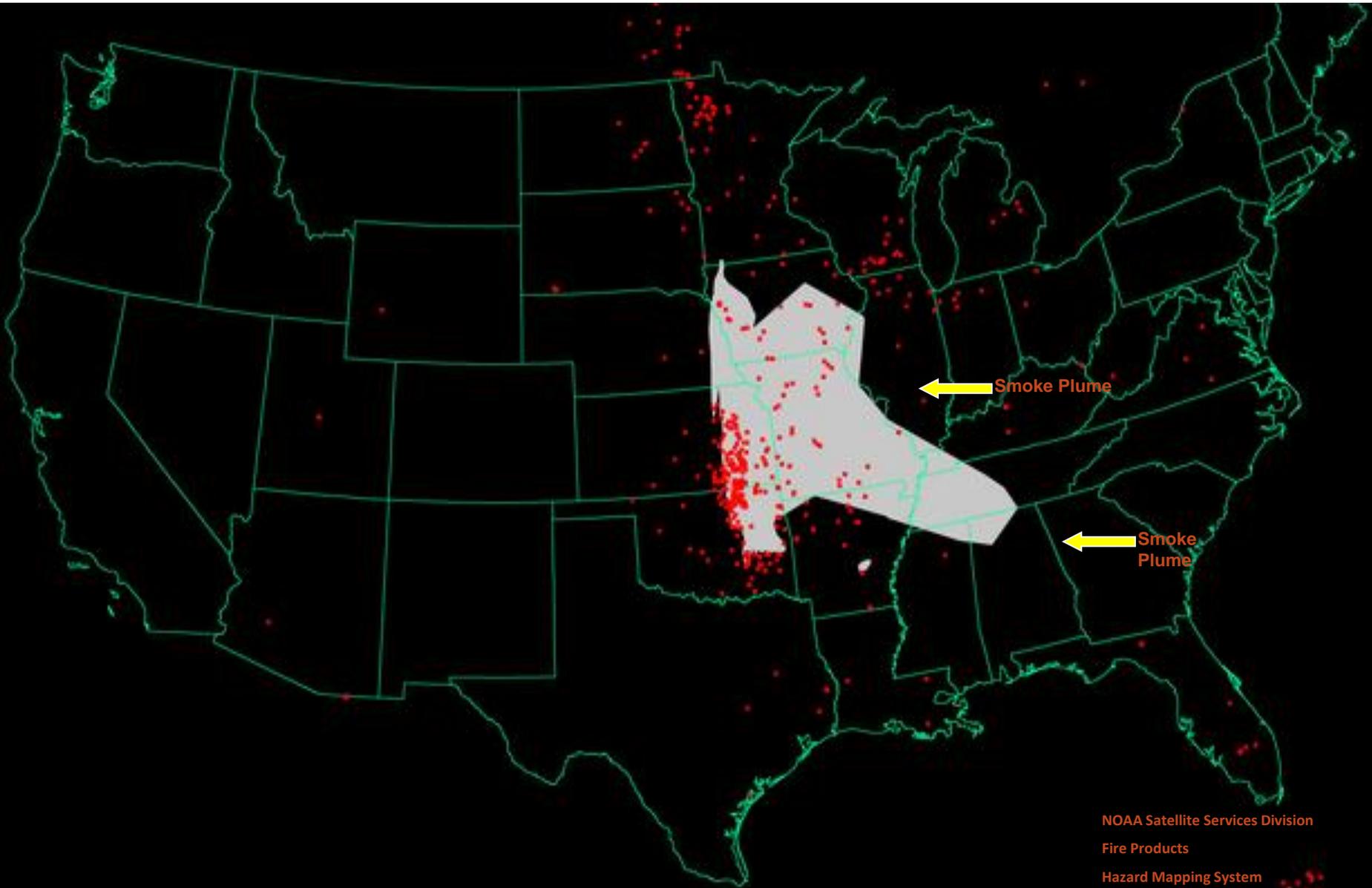
Graphic by Duane Schrag

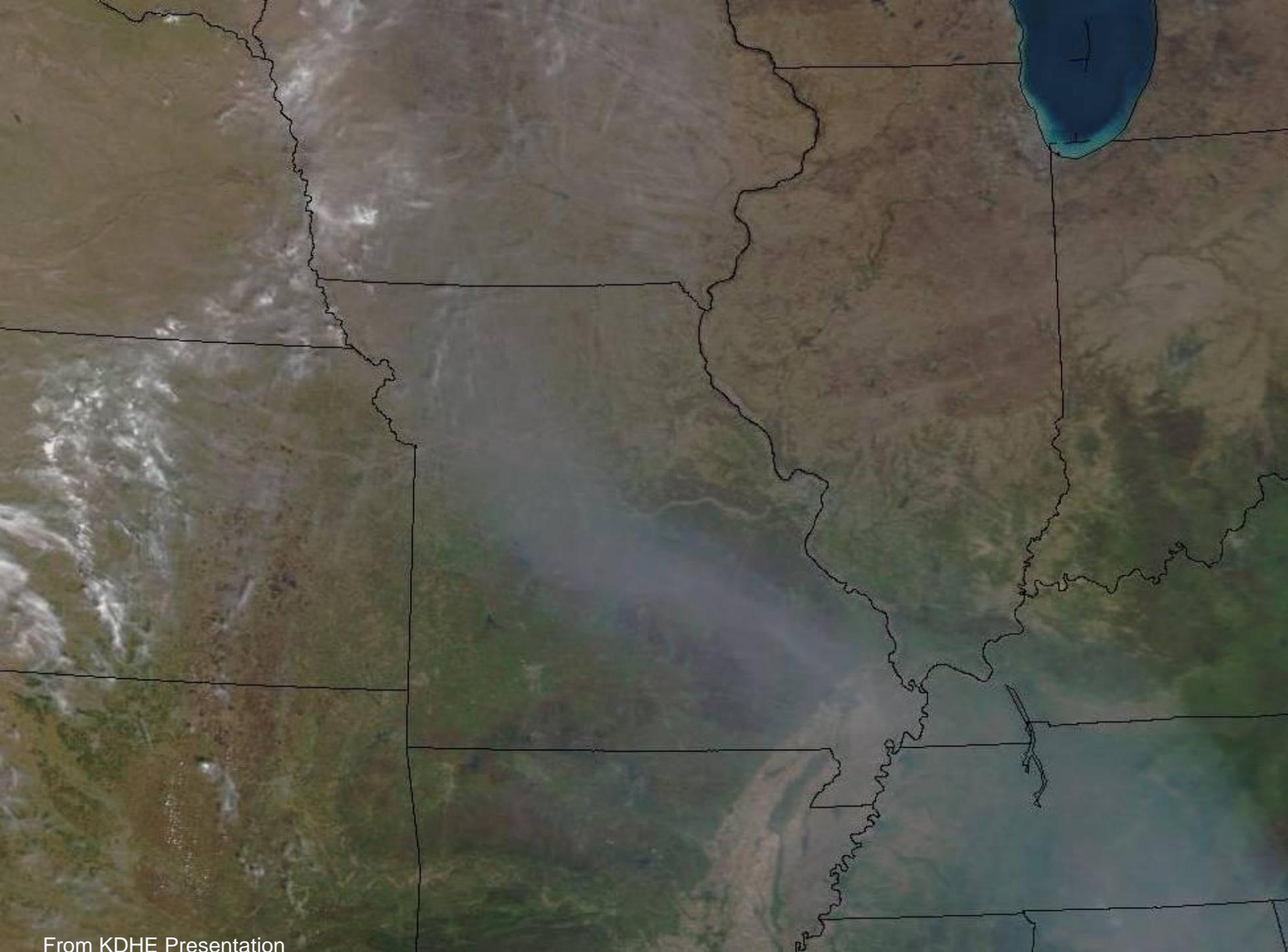
Burning frequency on unfragmented land - 2003 - 2009

Graphic by Duane Schrag
based on preliminary data from
Rhett Mohler & Doug Goodin of
KSU

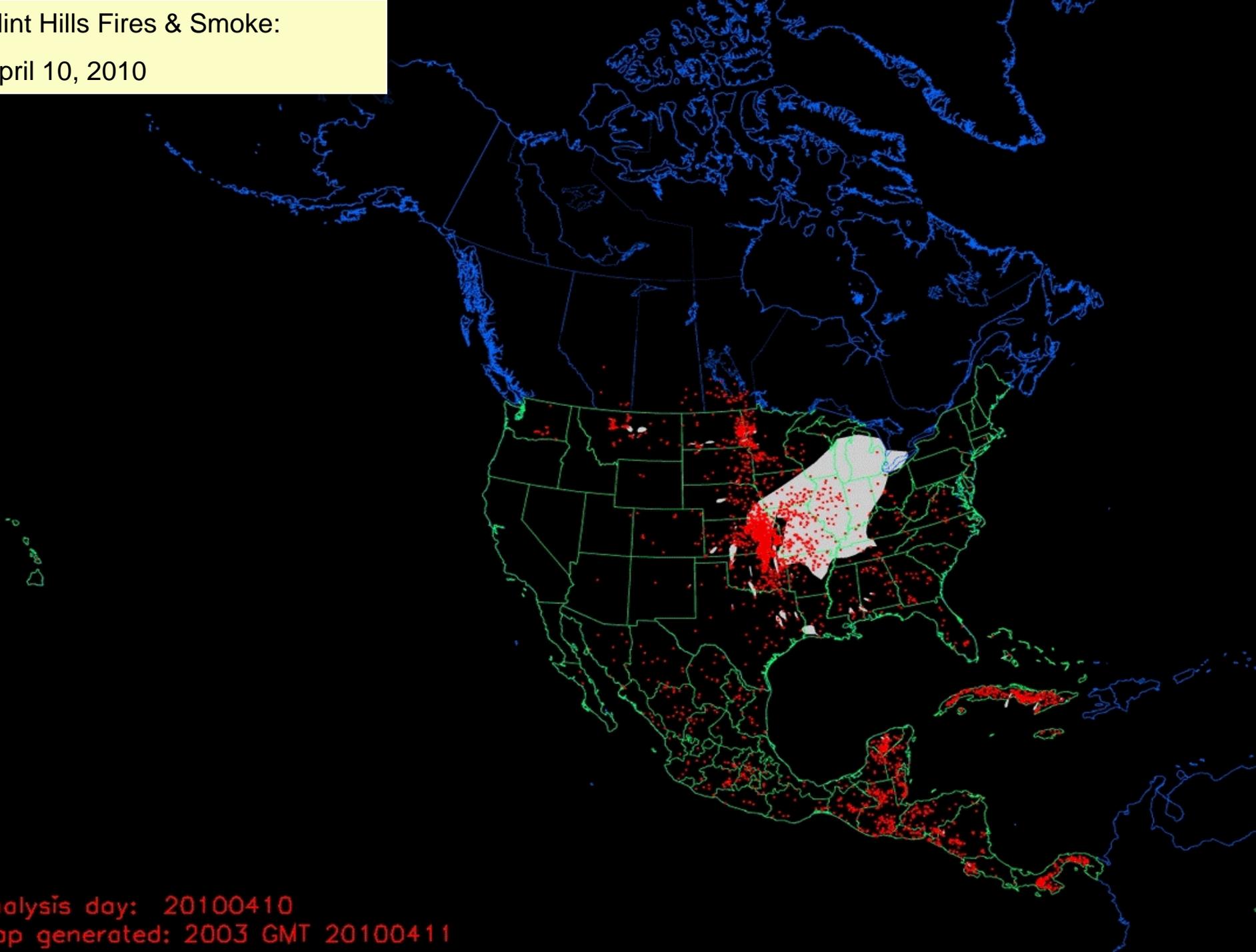


April 13, 2003 – Rangeland Fires and Smoke Plume





Flint Hills Fires & Smoke:
April 10, 2010



Analysis day: 20100410
Map generated: 2003 GMT 20100411

Latest research shows that rotational or “*patch*” *burning* is feasible and achieves comparable cattle weight gains

Intensive, Industrial-Scale Production of Meat is Not Sustainable

- Eating large slabs or thick patties of meat at every meal is neither healthy nor sustainable;
- *Local, free range, mainly grass-fed* animal husbandry is sustainable but will require a change of eating habits;
- Meat must become viewed as an ingredient or flavoring in *plant based* meals much like in traditional Asian dishes;
- Eating a steak should be a special occasion, like it used to be.







What About Dairy Food & Eggs?

- Eating fresh milk, cheese and eggs in moderation is generally healthy;
- But industrial dairies have a heavy carbon footprint (64mmtonsC_e);
- Shipping highly processed fresh milk long distances is an industrial era development;
- Need program to ensure safety of local, small-scale milk production
- Local, small scale production of eggs is already increasing, requires little processing.