



**Kansas State
UNIVERSITY**

Department of Agricultural Economics



www.agmanager.info

Overview of Beef-Cattle Industry Changes and Economic Implications



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Kansas Society of Farm Managers and Rural Appraisers 49th Annual Winter Meeting
Salina, KS – February 23, 2012

Changes and issues to be discussed here...

- **Overview status of industry**
- **Persistent downsizing of the U.S. beef herd**
- **U.S. beef demand changes underway**
- **Long-term industry projections/trends**
- **Other industry issues**

Current U.S. Cow-Calf Industry

(March '11 ERS Report: <http://www.ers.usda.gov/publications/eib73/>)

- **35% of 2.2. million farms have a beef cow**
 - 50% have fewer than 20 cows (accounting for ~10% of cows)
- **Cow-calf only, CC/Stocker, & CC/Feedlot comprise 36%, 53%, and 10% of cows**
- **Internet use, NAIS familiarity, and host of other issues vary notably across op. sizes**

U.S. Cow-Calf Industry: Size Differences

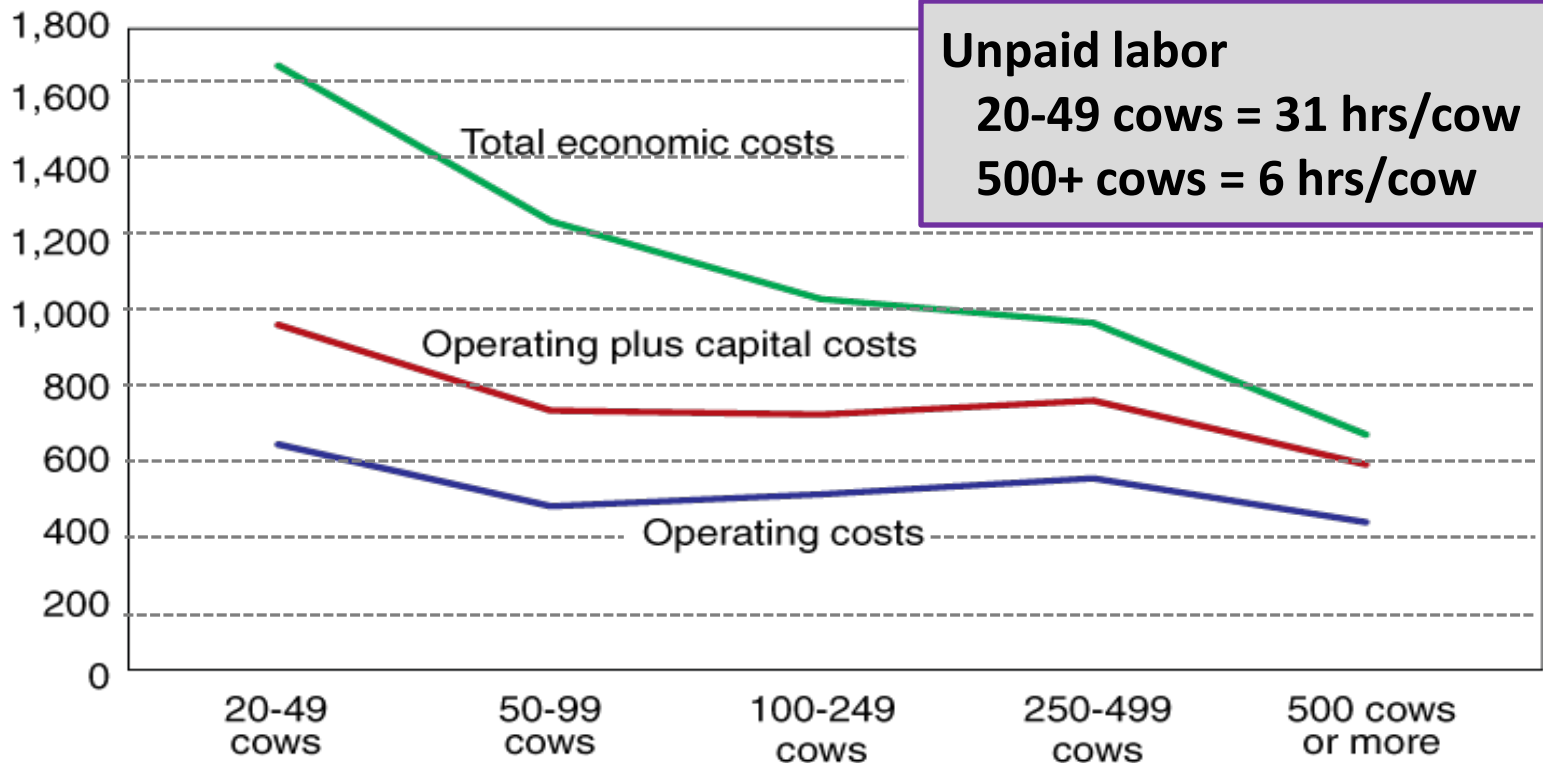
(March '11 ERS Report: <http://www.ers.usda.gov/publications/eib73/>)

	20-49 cows	50-99 cows	100-249 cows	250-499 cows	500+ cows
Percent of farms/beef cows	41/13	32/21	21/31	5/15	2/20
Beef cows—average per farm	29	54	116	260	640
Weaning weight (lbs)	494	493	523	538	522
Sold at weaning (%)	63	62	51	49	39
Backgrounded then sold (%)	31	35	43	45	55
Retained until slaughter (%)	6	3	6	6	6
Percent using public grazing land	1	3	8	24	29
Operator:					
Age (percent greater than age 65)	38	40	32	30	22
Completed college (percent)	23	26	27	37	42
Off-farm occupation (percent)	47	37	21	18	10
Exit within 5 years (percent)	26	26	17	10	7

Beef cow-calf cost of production per cow by size, 2008

Economies of size are apparent in beef cow-calf production, particularly for total economic costs.

Dollars per cow



Notes: Production cost estimates for operations with less than 20 beef cows are not available because the ARMS sample is limited to operations with 20 or more beef cows. The number of cows refers to the peak number on the operation at any time during 2008.

Source: USDA, Economic Research Service using USDA's 2008 Agricultural Resource Management Survey (ARMS).

Current U.S. Cow-Calf Industry

(March '11 ERS Report: <http://www.ers.usda.gov/publications/eib73/>)

- **Hog & Dairy operations (avg size) fell by 40% (doubled) between 1997 & 2007**
 - **Beef cow operations fell by only 15% and avg. size went from 38 to 43 head (13% increase)**
 - **Land constraint is different;**
 - **But is consolidation coming???**
 - **is it already under-way???**

Average herd size and distribution

Average beef cow herd size increased from 40.4 in 2000 to 42.3 in 2010, but averages can be somewhat deceiving...

Farm size	Percent of operations		Percent of inventory	
(cows/farm)	2000	2010	2000	2010
1-49	78.8	79.2	29.5	28.0
50-99	12.0	11.1	19.1	17.4
100-499	8.5	8.9	36.7	38.0
500+	0.7	0.8	14.7	16.6

Roughly 10% of the operations control over 55% of the cows (diverse cow-calf sector)

Concentration of U.S. animal agriculture in 2010...

Production from approximately 10% of operations

	Size of operation (hd)	Percent of operations	% of I, M, or P*
Beef cows	100+	9.7%	54.6% (I)
1000+ head Feedlots**	24,000+	8.9%	61.7% (M)
Dairy	200+	11.8%	73.7% (P)
Swine	2,000+	12.2%	86.0% (I)

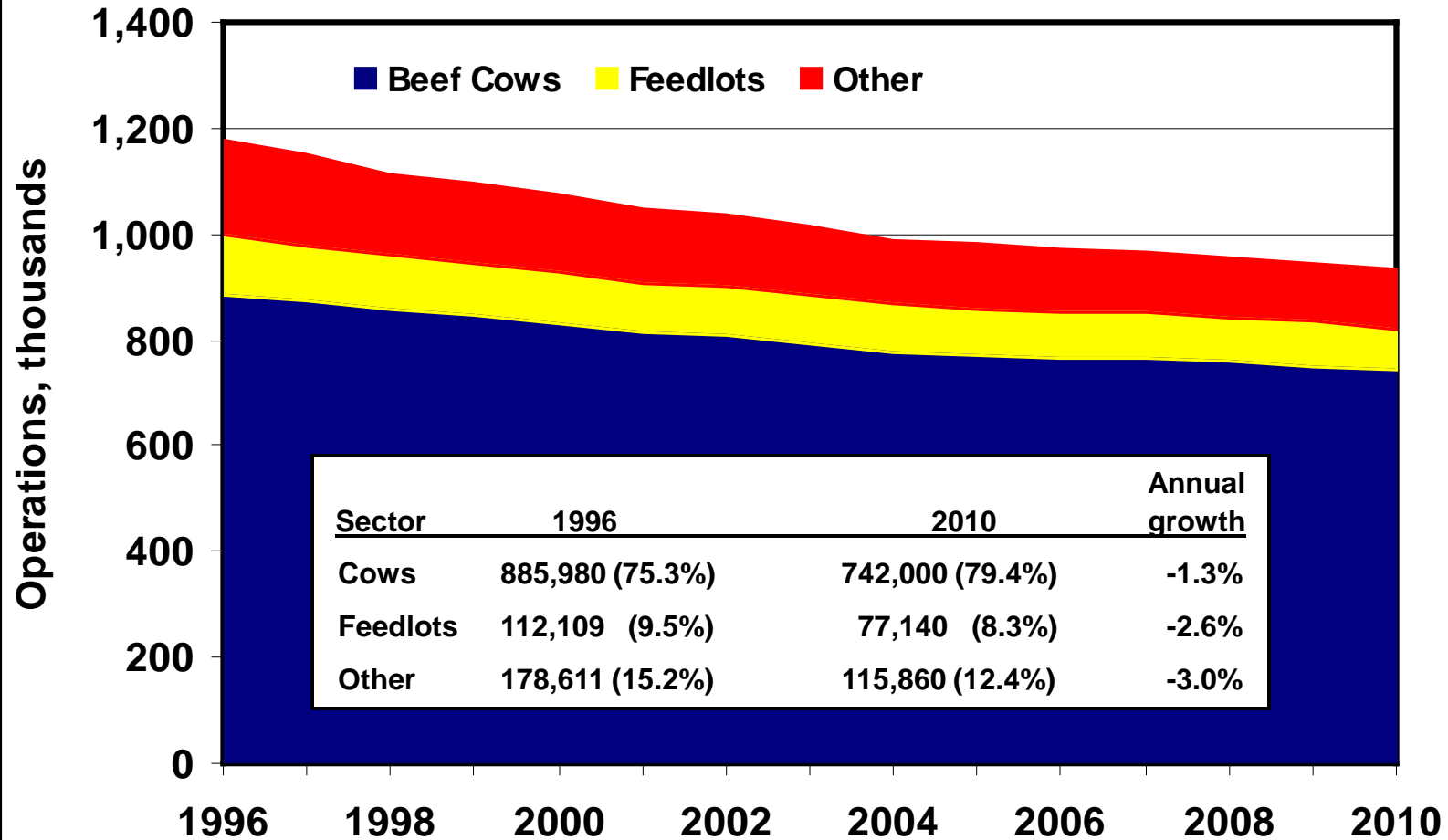
* I = Inventory, M = Marketings, P = Production

** Feedlots with 1000+ head represented 2.8% of all feedlots and accounted for 84.6% of marketings

Source: USDA NASS and K-State

Fewer operations in all sectors in beef industry...

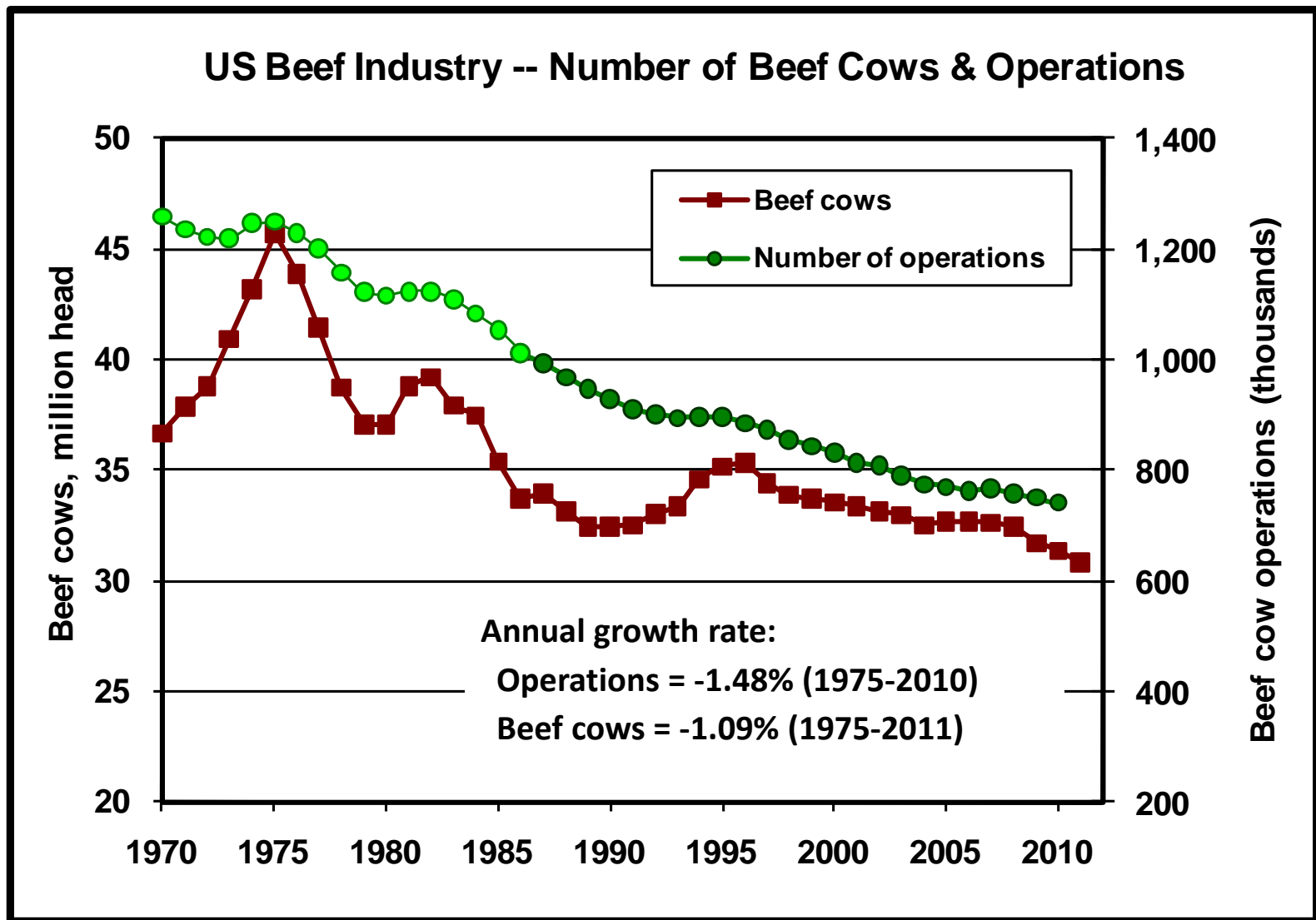
US Beef Industry -- Number of Operations



Beef industry changes underway

- **Growth of stocker segment**
 - Larger operations least likely to exit already are retaining ownership more...
 - Association with public grazing, value of gain, etc. makes this trend likely to continue...
- **Reduced farmer-feeders (2010 vs 2009)**
 - <1,000 hd yards; reduced total capacity by 150,000 hd (5,000 operations exited)
 - >50,000 hd yards; increased total capacity by 370,000 hd (4 more operations)
 - w/ +/- 20% feedlot over-capacity, will '11 be different ???

Industry has been downsizing for a long time...



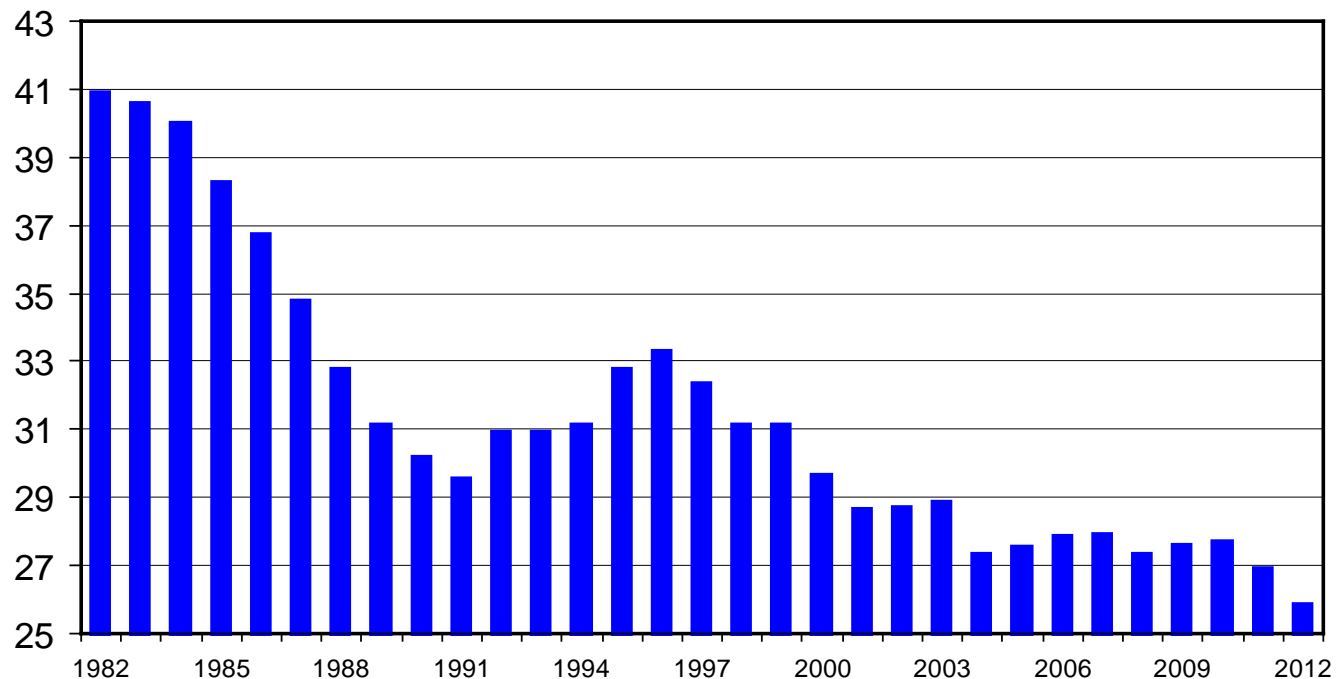
Source: USDA-NASS, LMIC and K-State

Downsizing has reduced feeder cattle supplies...

JANUARY 1 FEEDER CATTLE SUPPLIES

Residual, Outside Feedlots, U.S.

Mil. Head



Livestock Marketing Information Center

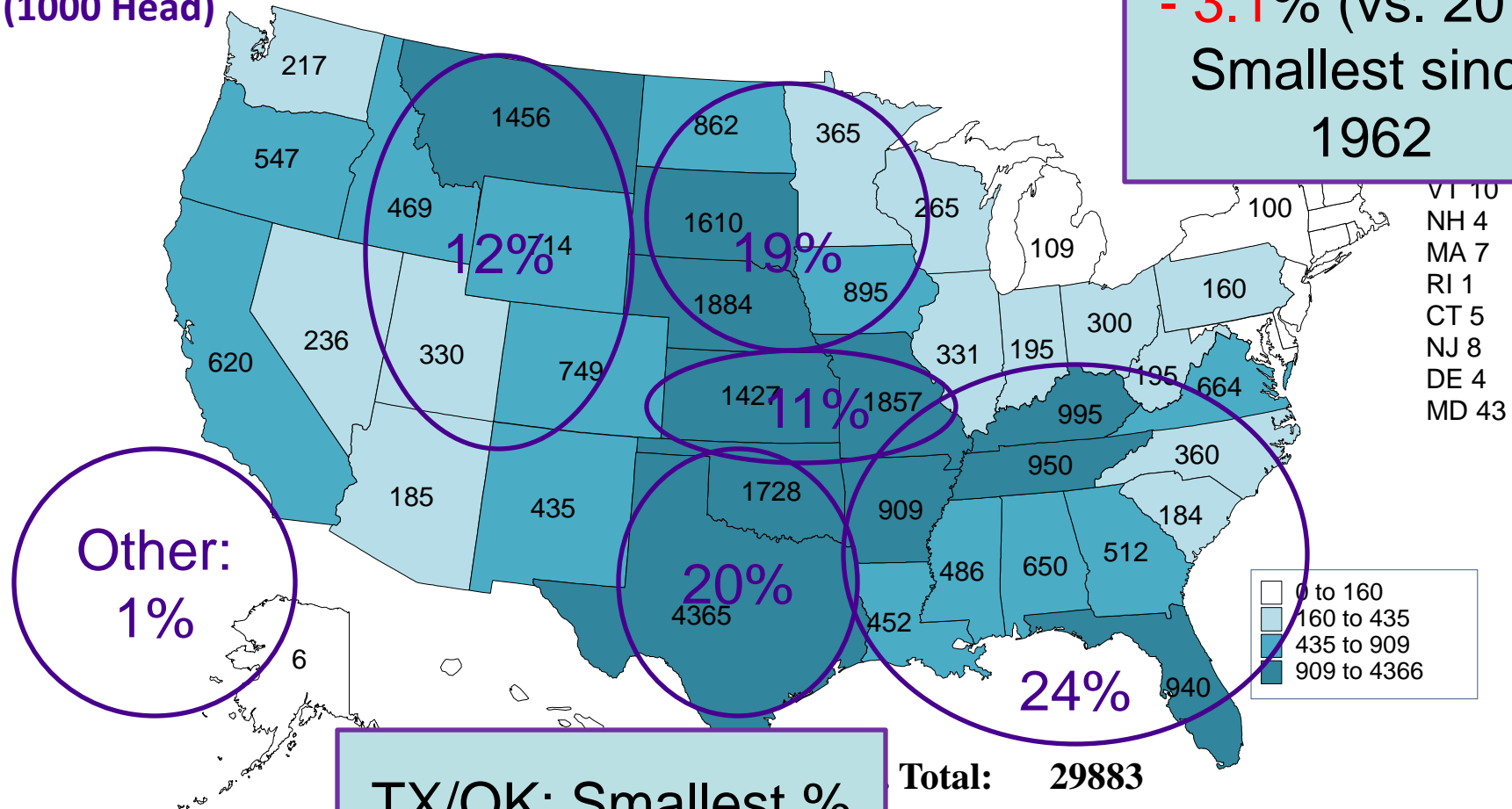
Data Source: USDA-NASS

C-N-30
01/29/12

Status of beef cow inventory spatial distribution...

BEEF COWS THAT CALVED JANUARY 1, 2012 (1000 Head)

National Herd:
- 3.1% (vs. 2011)
Smallest since
1962



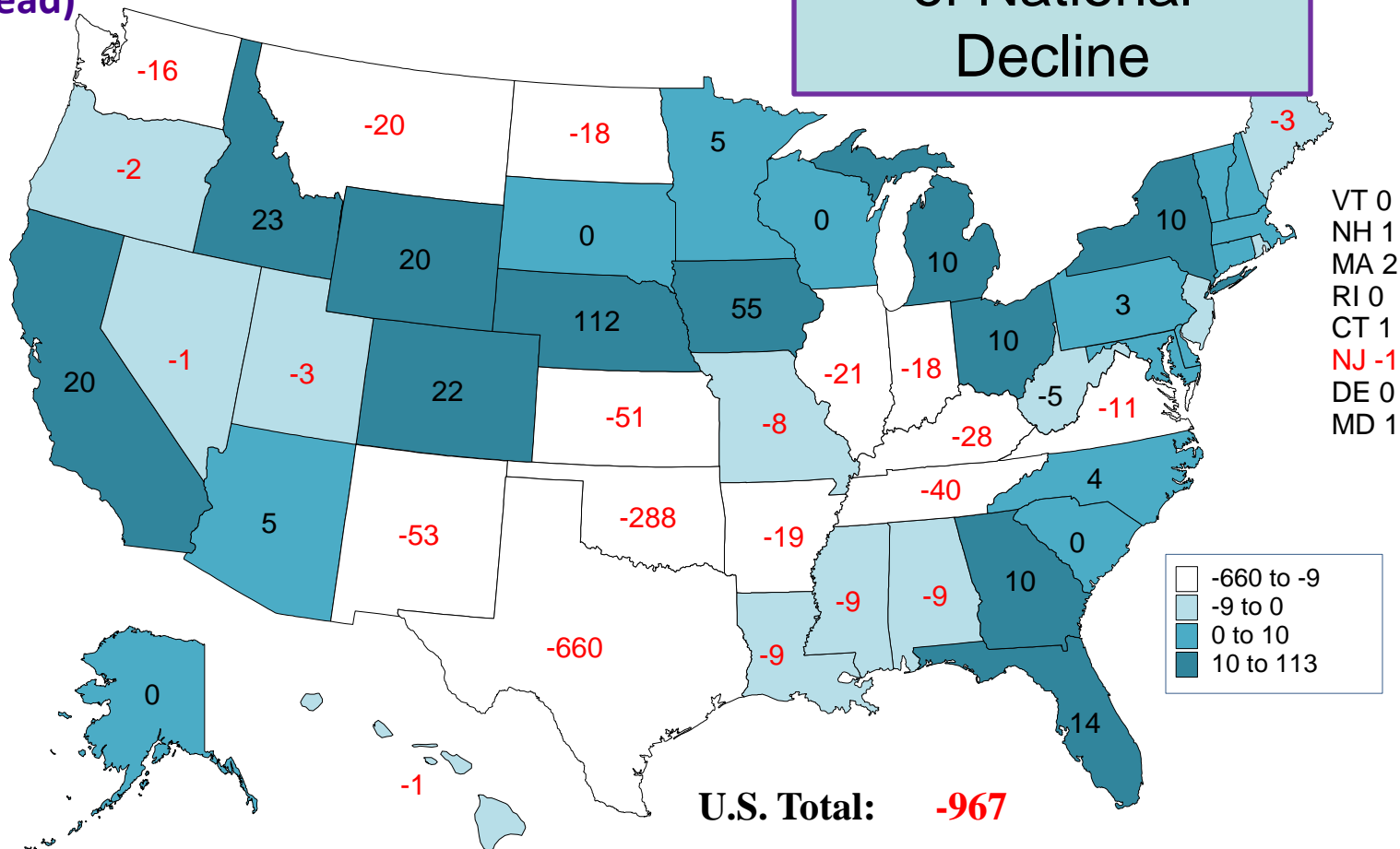
TX/OK: Smallest %
Since 1972

Total: 29883

Changes in beef cow inventory spatial distribution...

**CHANGE IN BEEF COWS NUMBERS
JANUARY 1, 2011 TO JANUARY 2012
(1000 Head)**

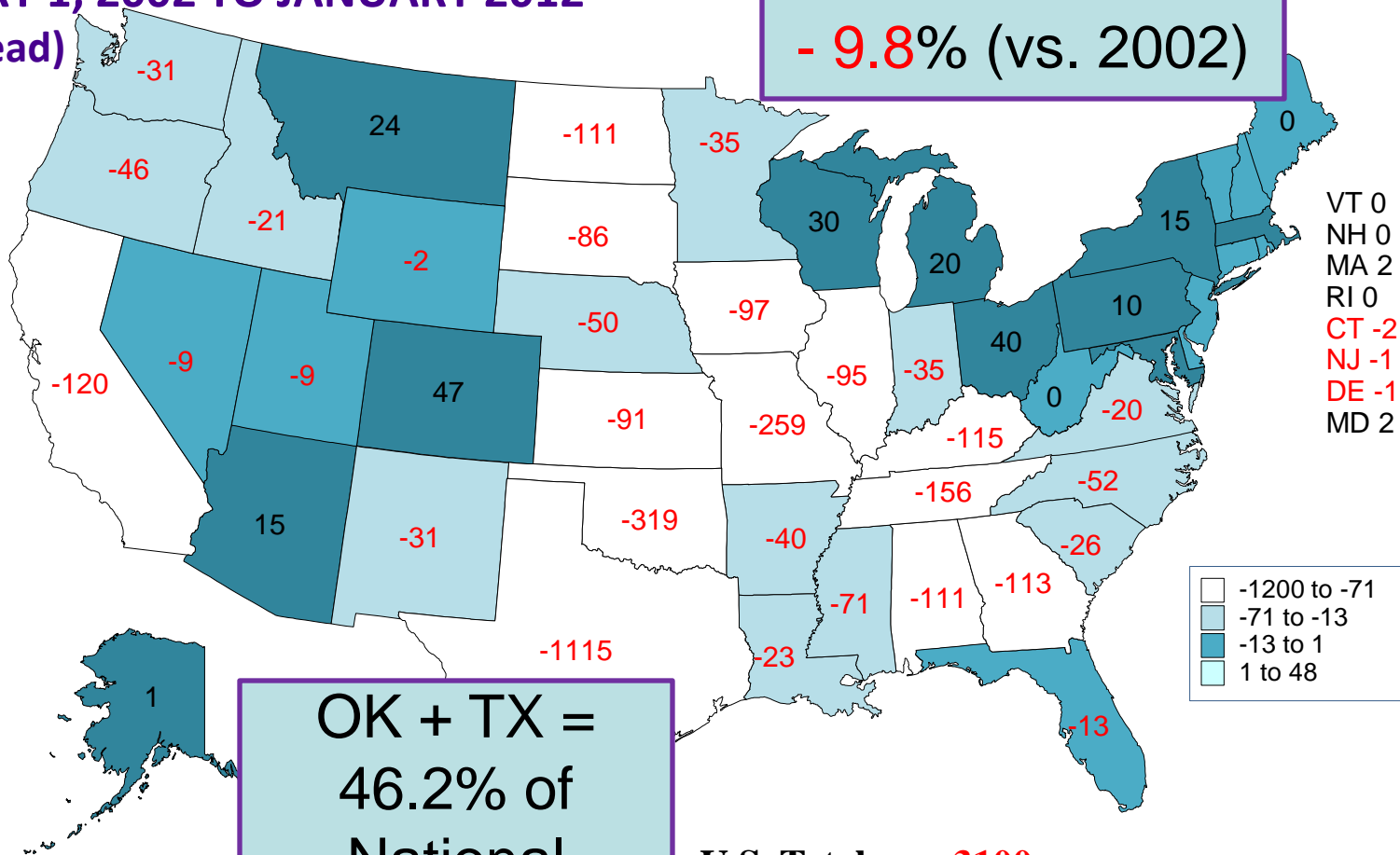
**OK + TX = 98.1%
of National
Decline**



Changes in beef cow inventory spatial distribution...

CHANGE IN BEEF COWS NUMBERS
JANUARY 1, 2002 TO JANUARY 2012
(1000 Head)

National Herd:
- 9.8% (vs. 2002)

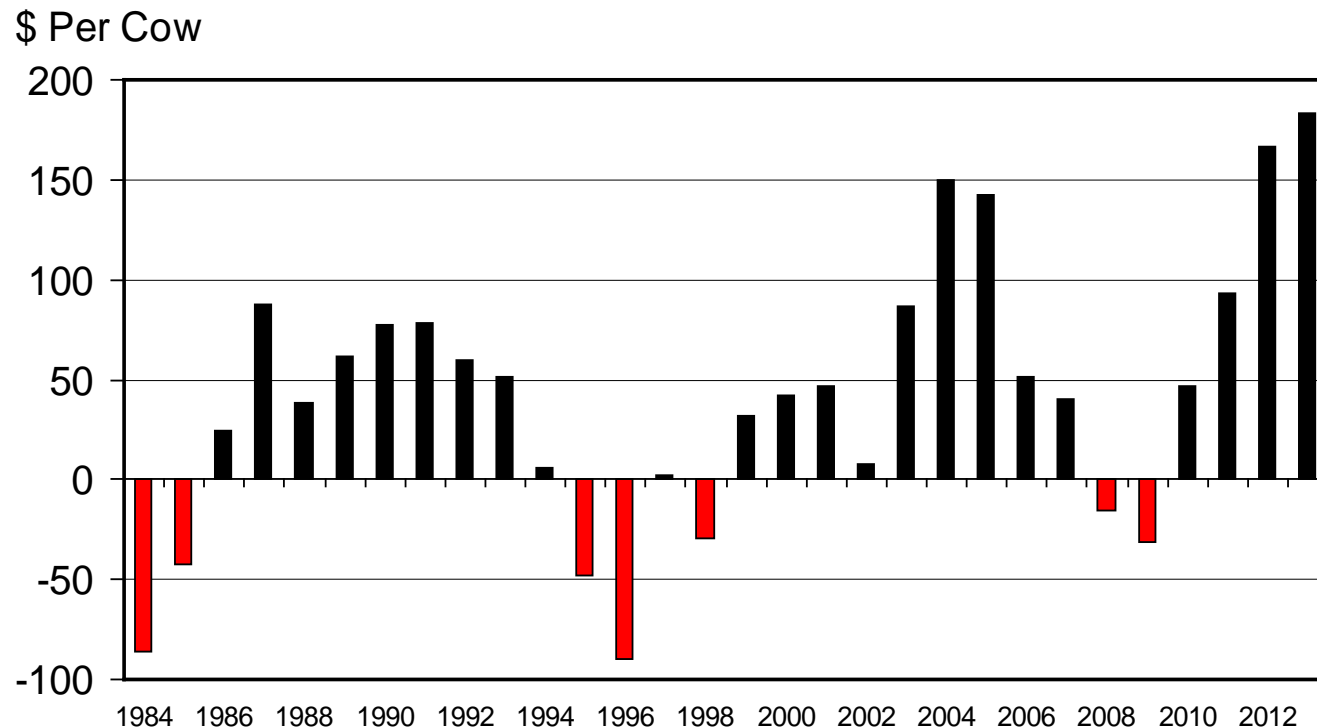


OK + TX =
46.2% of
National
Decline

01/27/12

2012-2013 Record returns??? == Expansion ???

ESTIMATED AVERAGE COW CALF RETURNS Returns Over Cash Cost (Includes Pasture Rent), Annual



Livestock Marketing Information Center

Data Source: USDA-AMS & USDA-NASS, Compiled & Analysis by LMIC

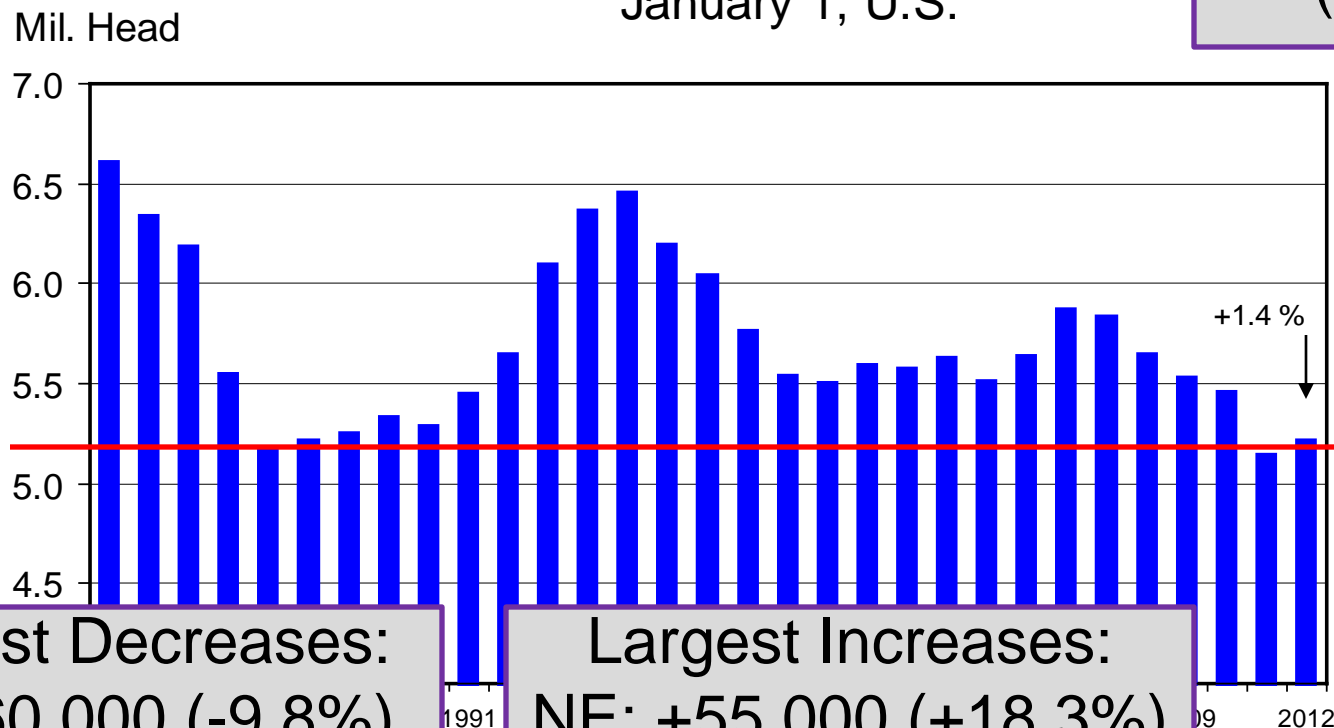
C-P-66
12/28/11

Expansion will not be uniform regionally...

HEIFERS HELD AS BEEF COW REPLACEMENTS

January 1, U.S.

KS: +5,000
(+2.0%)



Largest Decreases:

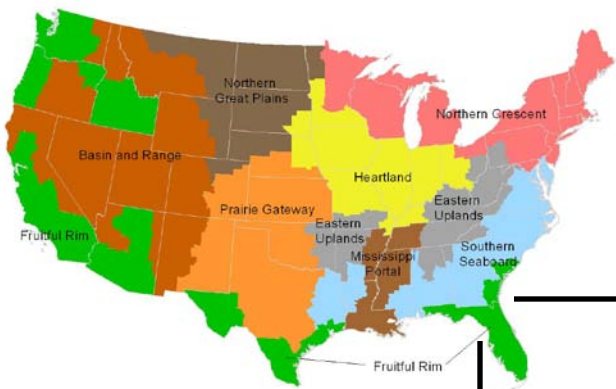
TX: -60,000 (-9.8%)
OK: -55,000 (-15.5%)
MO: -30,000 (-10.0%)
AR: -21,000 (-15.4%)
NM: -20,000 (-21.1%)

Largest Increases:

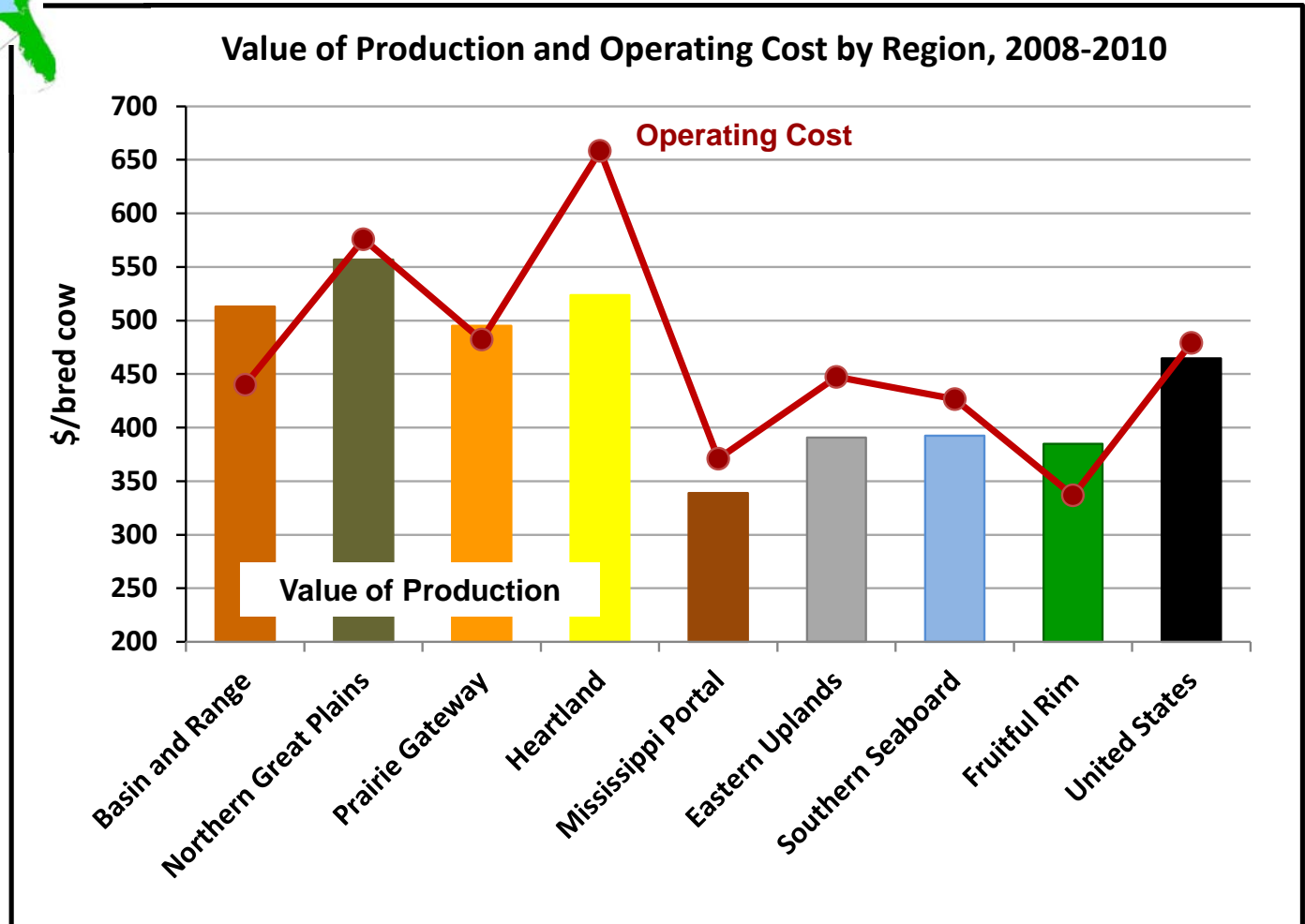
NE: +55,000 (+18.3%)
SD: +40,000 (+14.3%)
CO: +35,000 (+29.2%)
WY: +25,000 (+17.9%)
IA: +20,000 (+16.7%)

C-N-38
01/29/12

Livestock Marketing Information
Center Data Source: USDA-NASS



Some regions have advantages for expansion...

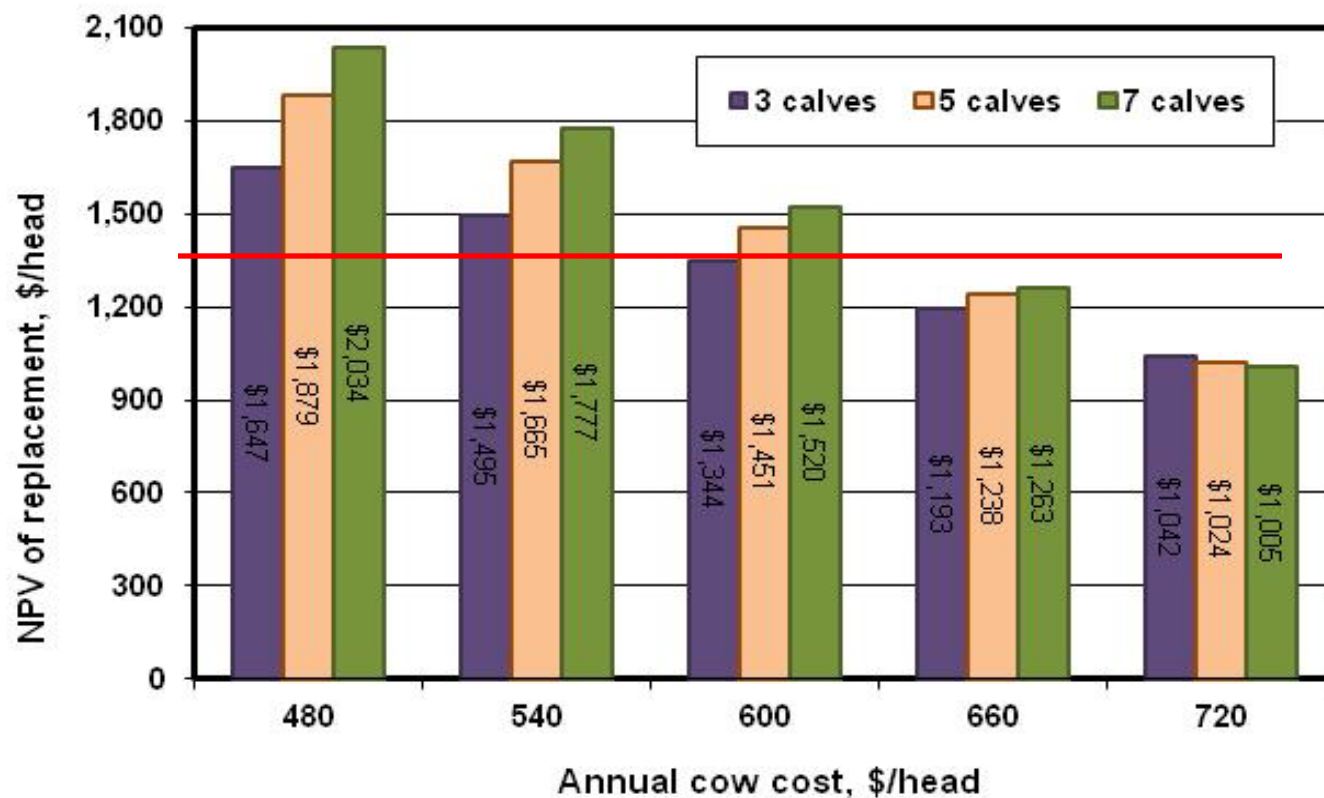


Data source: USDA-ERS

KSU – Beef Replacement; Excel Spreadsheet Decision Tool

(<http://www.agmanager.info/livestock/budgets/production/default.asp>)

NPV versus annual cow cost and number of calves



1/18/12'

Salina, KS

Auction:

Young, Bred
Cows (Med-Lg
1-2, 3rd stage)

\$1,400 to
\$1,600

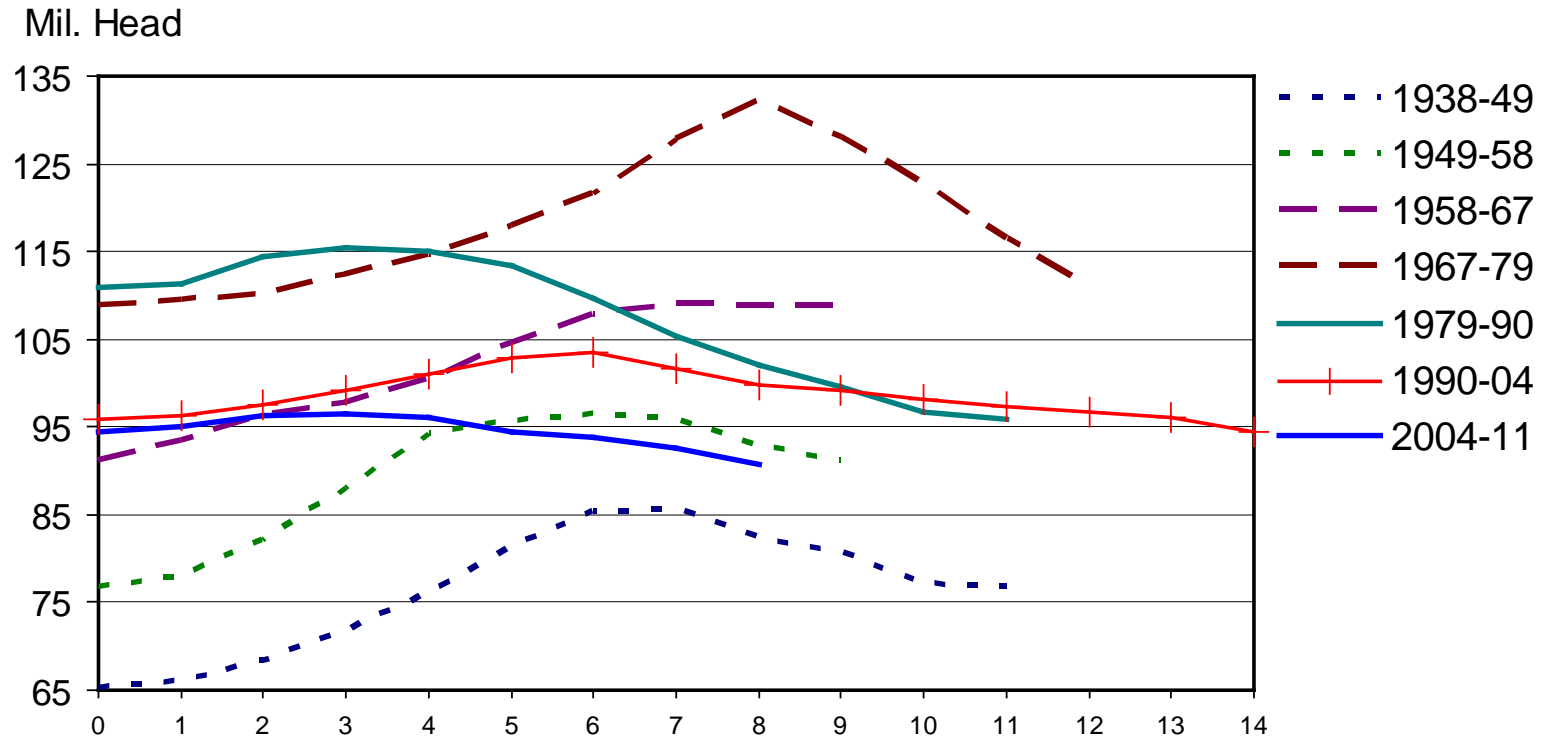
Notable regional
variation...

Scenario1: FARPI Adjusted \$/cwt (550 lbs calves @ \$148 in 2012 to \$151 in 2021) 6.5% interest/discount rate; 3% calf death loss

Where are we at in the “cattle cycle?”

TOTAL CATTLE INVENTORY BY CYCLE

U.S., January 1



Livestock Marketing Information Center

Data Source: USDA-NASS, Compiled & Analysis by LMIC

C-N-40
01/29/12

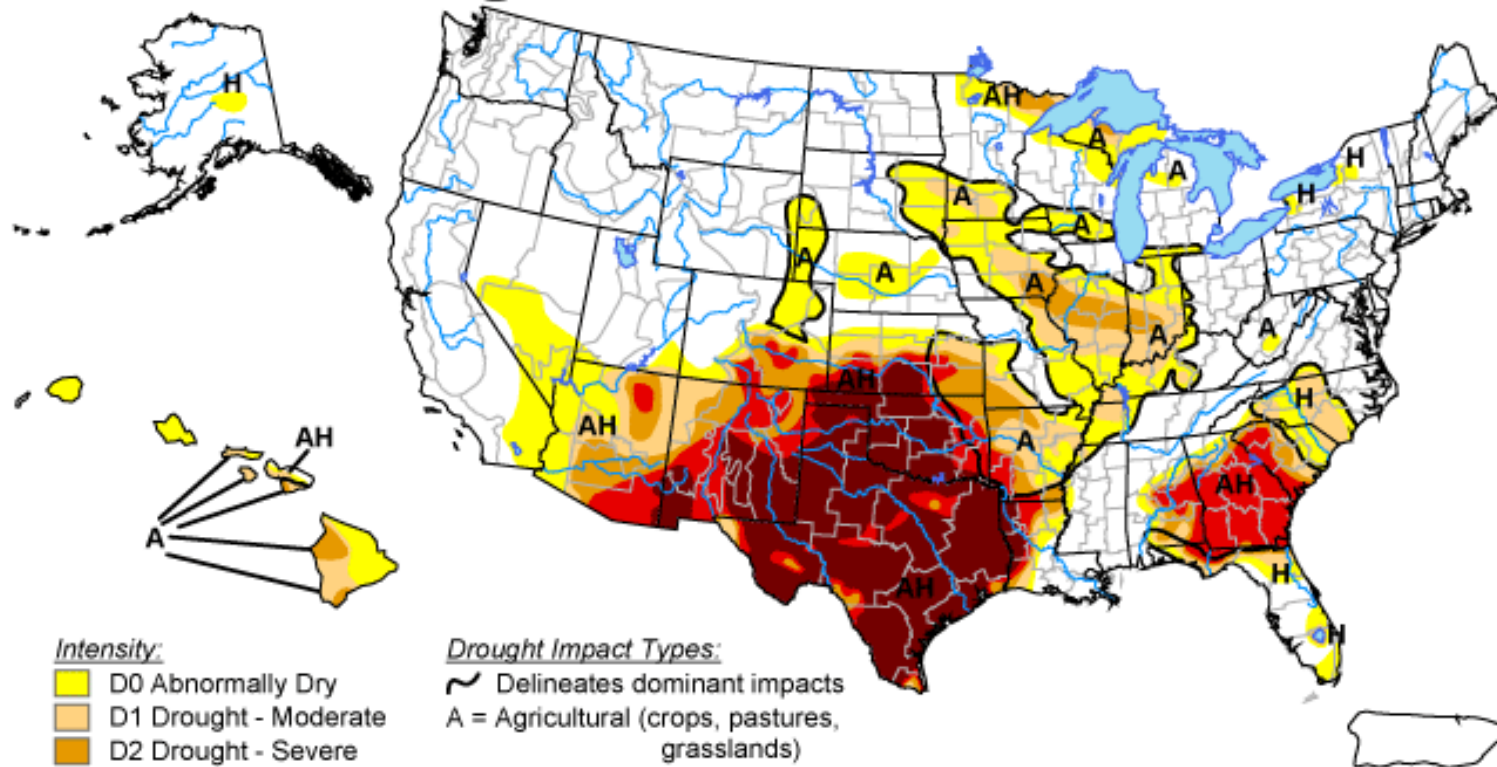
“Cycles” are flattening...

July '11: 40% of Beef Cows in States with > 40%
Poor to Very Poor Pasture Conditions (was 4% in 2010)...

U.S. Drought Monitor

September 13, 2011

Valid 8 a.m. EDT



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

- ~ Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions.
Local conditions may vary. See accompanying text summary
for forecast statements.



Released Thursday, September 15, 2011

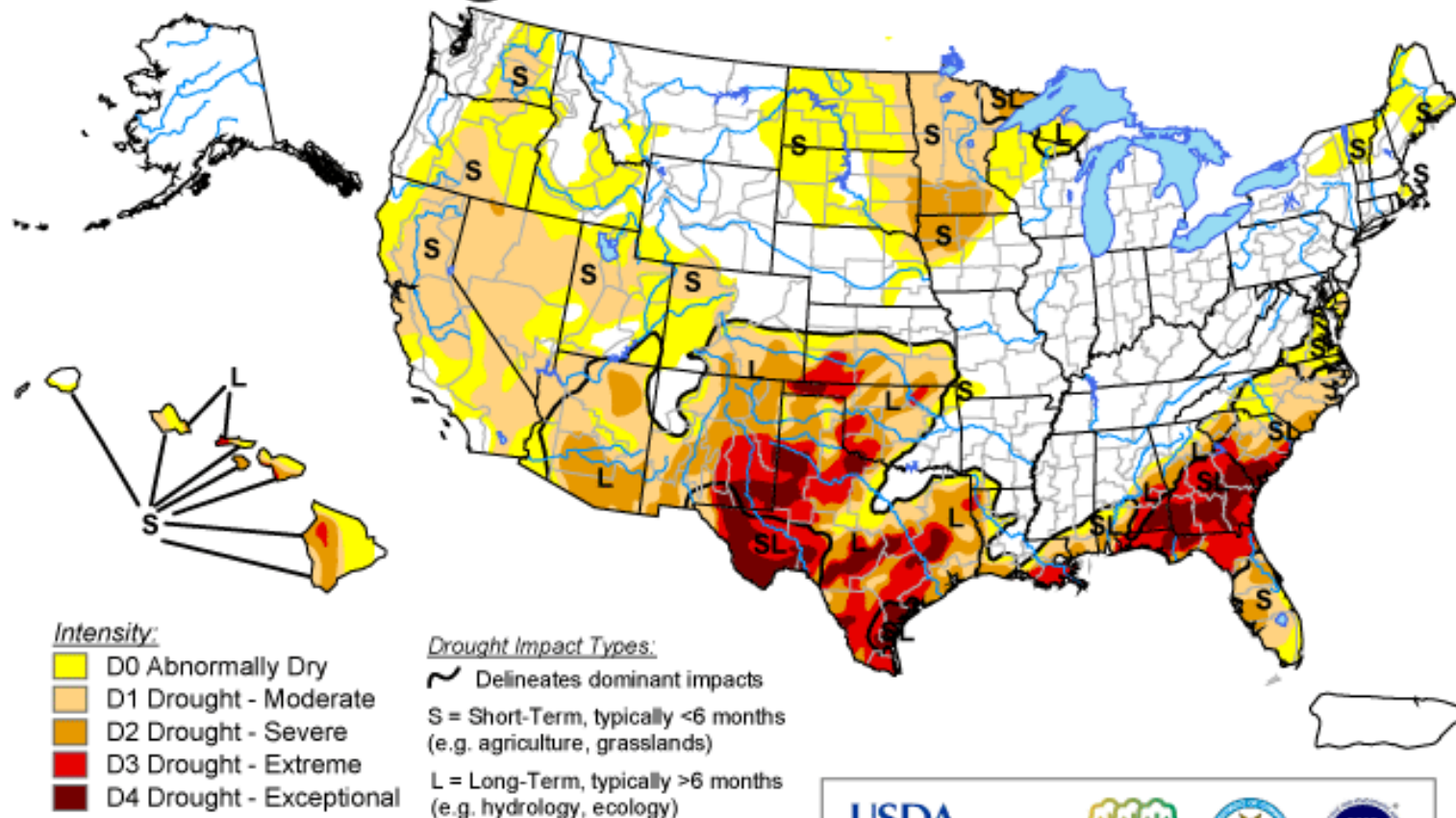
Author: Mark Svoboda, National Drought Mitigation Center

<http://drought.unl.edu/dm>

Conditions are improving, but are they good enough to allow expansion, or will there be lingering effects?

U.S. Drought Monitor

February 14, 2012
Valid 7 a.m. EST



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

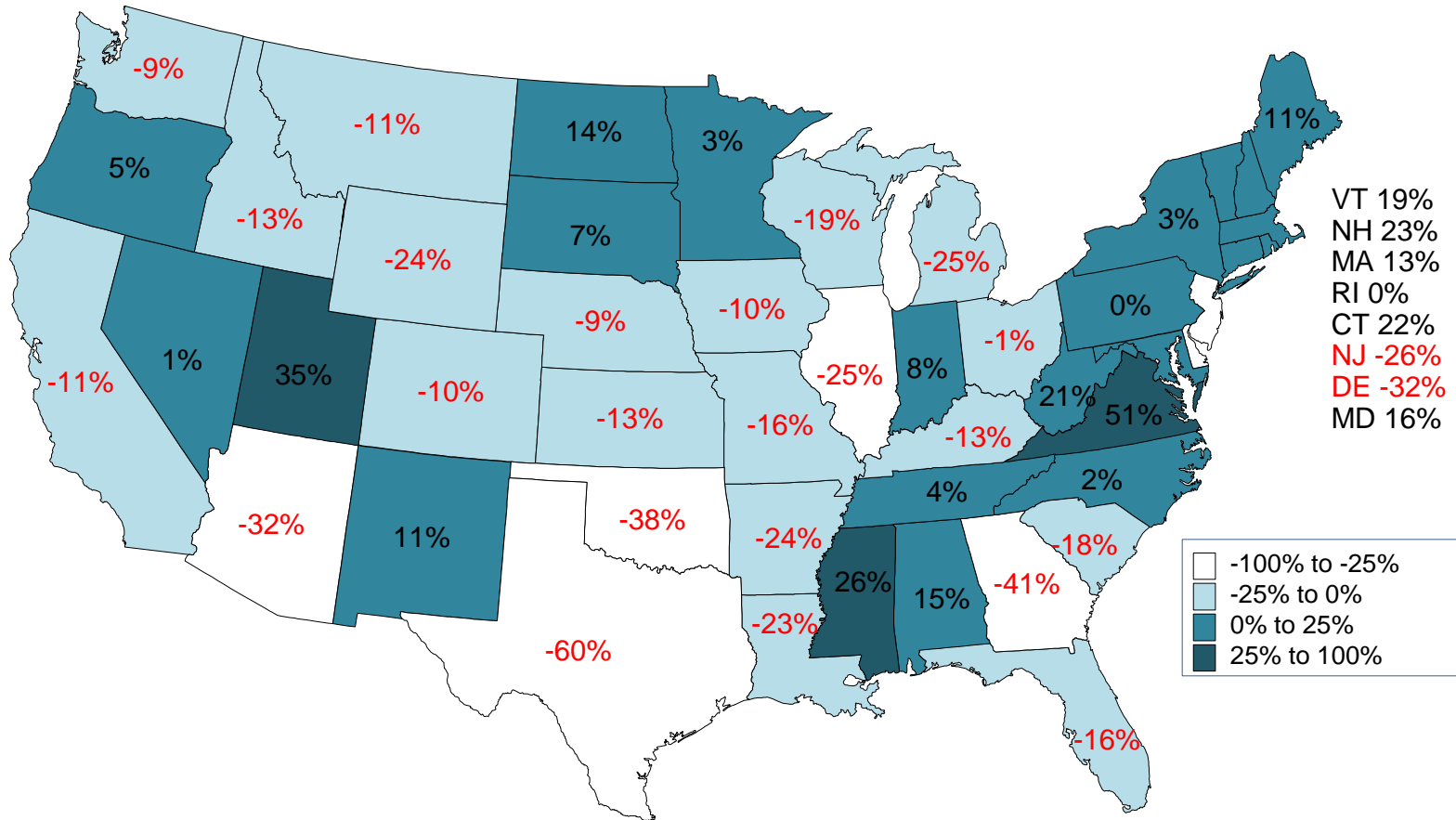
<http://droughtmonitor.unl.edu/>



Released Thursday, February 16, 2012

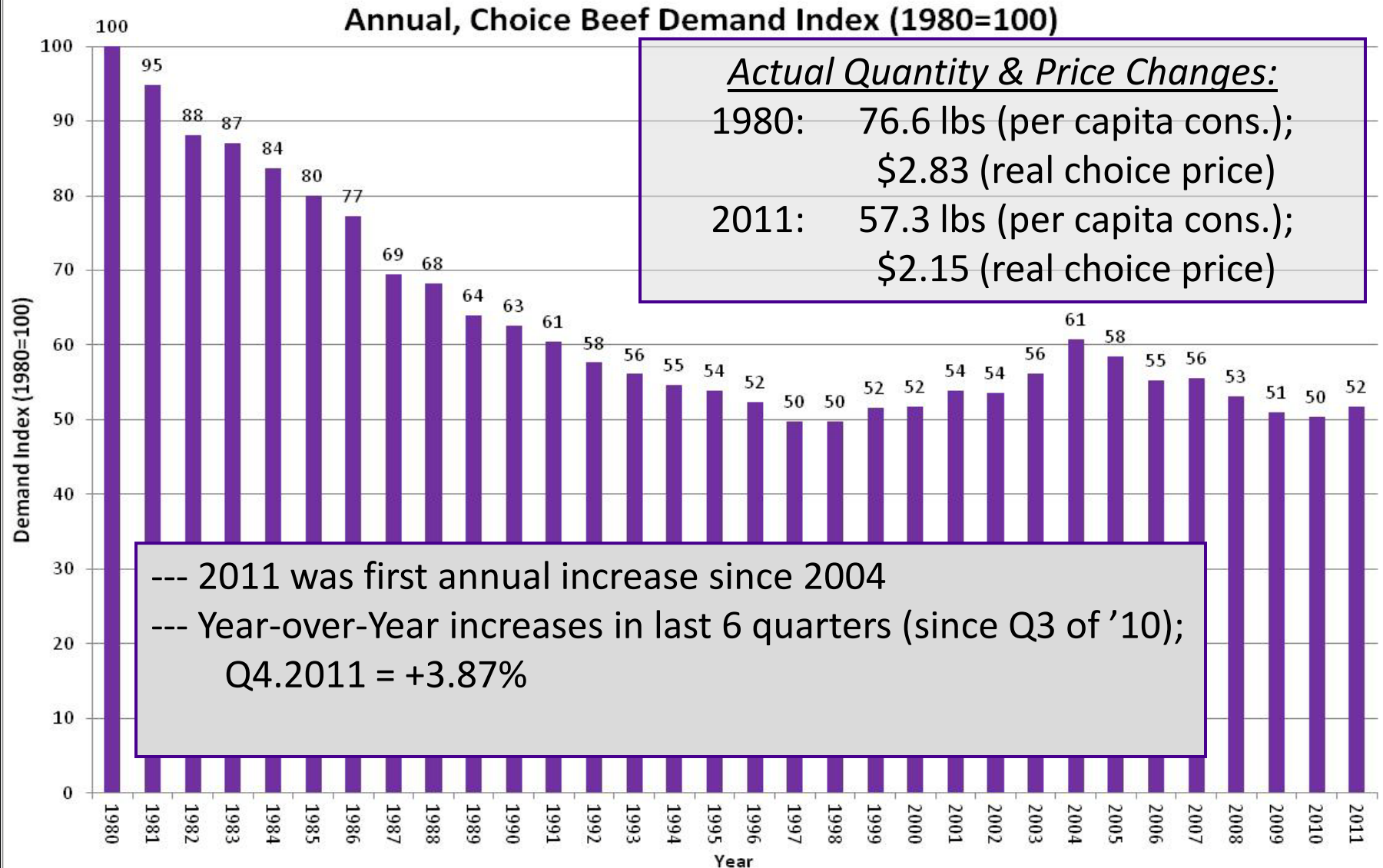
Author: Rich Tinker, NOAA/NWS/NCEP/CPC

PERCENT CHANGE DECEMBER 1 HAY STOCKS (2011-2010)



What has driven persistent downsizing of the herd?

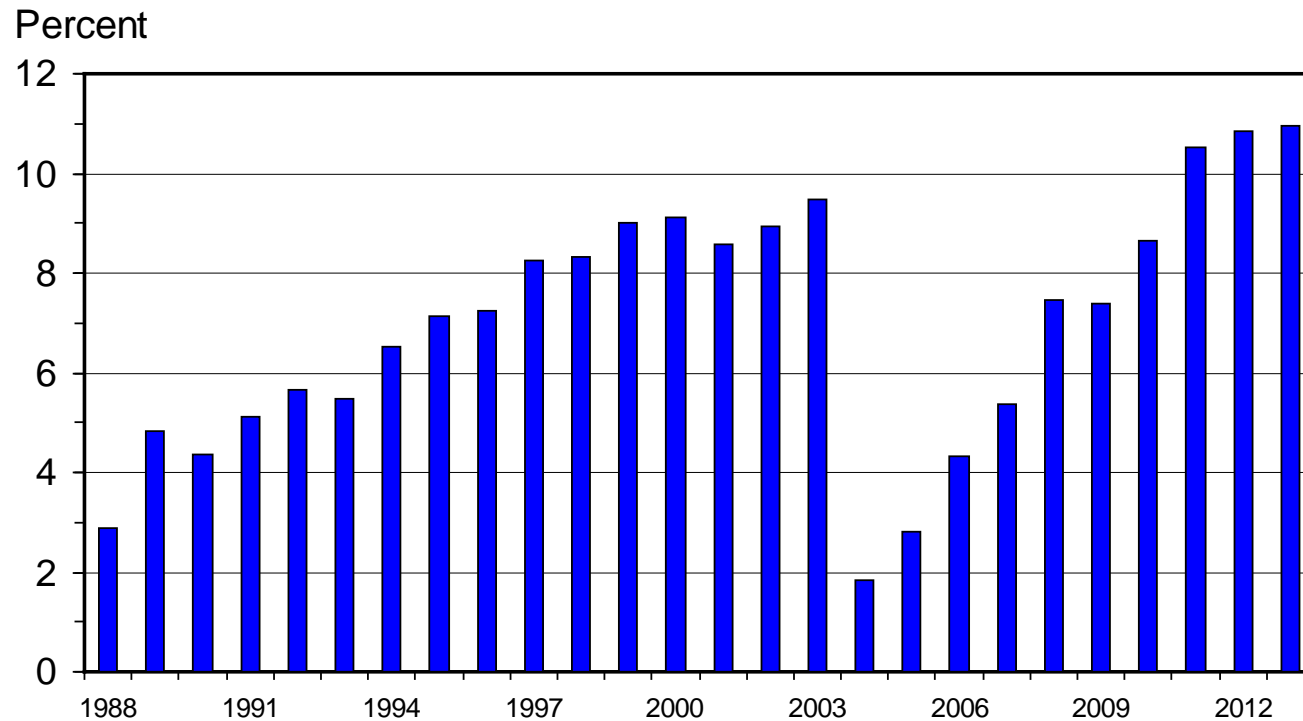
--Demand Declines and Efficiency Gains = Need Fewer Cows



Source: Glynn T. Tonsor, Kansas State University, Jan. 2012

U S BEEF AND VEAL EXPORTS

As a Percentage of Production, Carcass Weight, Annual



Livestock Marketing Information Center

Data Source: USDA-ERS & USDA-FAS, Compiled & Analysis by LMIC

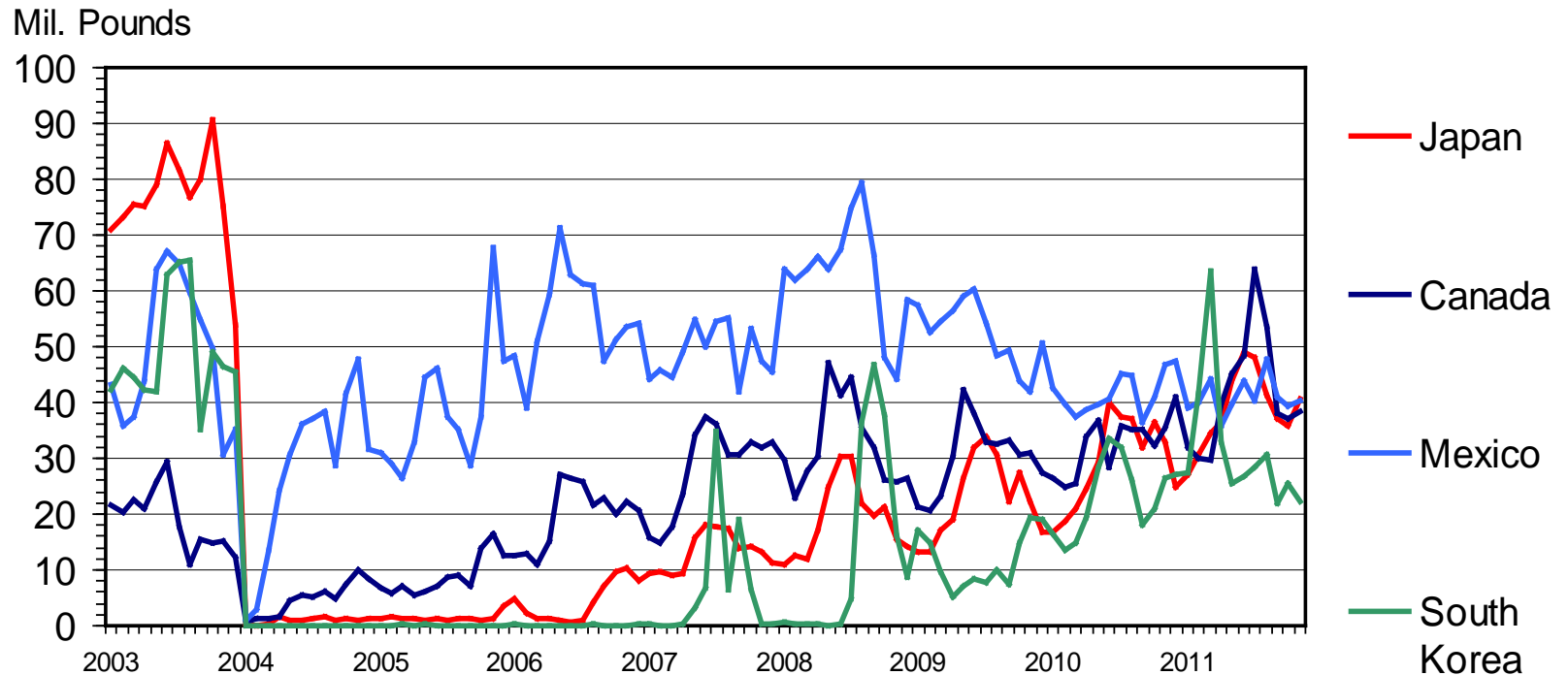
I-N-07
01/25/12

Exports: +/- 65% to 4 main countries....

Industry's portfolio is expanding and becoming more diversified...

U S BEEF EXPORTS TO MAJOR MARKETS

Carcass Weight, Monthly



Livestock Marketing Information Center

Data Source: USDA-ERS & USDA-FAS

I-N-35
01/17/12

USDA's longer-term projections (as of Feb. 2012) ...

<http://www.ers.usda.gov/Publications/OCE121/>



United States
Department of
Agriculture

Office of the
Chief Economist

World Agricultural
Outlook Board

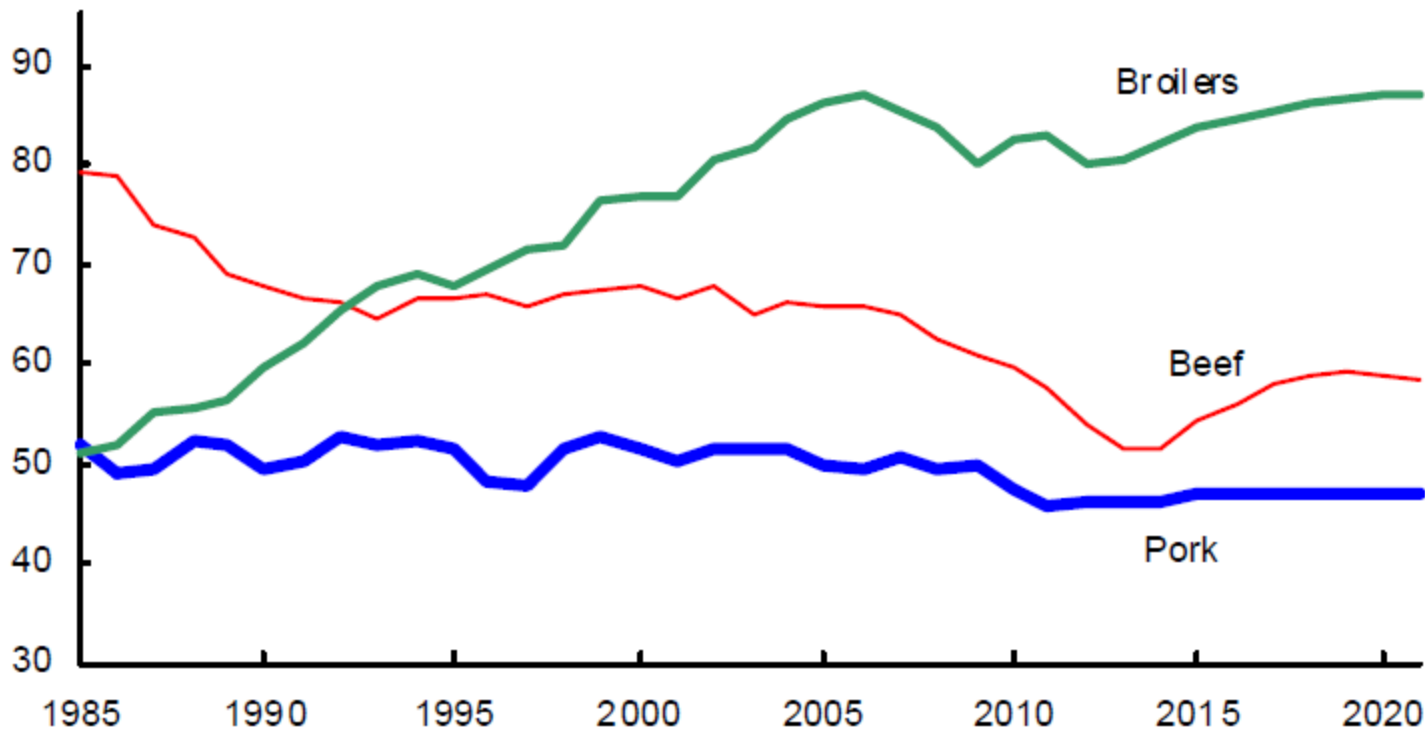
Long-term
Projections Report
OCE-2012-1

February 2012

USDA Agricultural Projections to 2021

U.S. per capita meat consumption

Pounds per capita, retail weight



USDA's longer-term projections (as of Feb. 2012) ...

<http://www.ers.usda.gov/Publications/OCE121/>

- **Beef cow inventory:**
 - 29.8 million in 2012
 - 34.5 million in 2021 (+/- 1997 levels)
- **Domestic per capita red meat and poultry consumption:**
 - 221 lbs in 2004-2007 (Beef=65.7 lbs; Pork=50.4 lbs; Poultry=103.8 lbs)
 - 198 lbs in 2013 (Beef=51.3 lbs; Pork=46.3 lbs; Poultry=98.5 lbs)
 - 213 lbs in 2021 (Beef=58.7 lbs; Pork=47.2 lbs; Poultry=105.8 lbs)
- **Beef exports:**
 - 2.30 billion lbs in 2010
 - 2.77 billion lbs in 2011
 - 3.16 billion lbs in 2021

Cross-cutting issues: “Developing” trade discussions/events are new normal ...

- Japan may start accepting older cattle...
- FTA = reduction of South Korea tariffs
- USMEF – ID/Traceability study == U.S. falling behind
- WTO MCOOL ruling
 - U.S. response (Mar. 23, 2012) unknown...

Cross-cutting issues: Animal Welfare

- State-by-state changes; production practice restrictions
- Mandatory labeling and “level the field” national calls...
 - AW discussion is here to stay
- No species nor state/region is immune
- Industry will increasingly face social pressures regarding food production practices
- Much more work is needed
 - Industry changes and policy consideration discussions are WAY ahead of current research based knowledge...
 - *Be aware, think carefully, and be proactive: “this isn’t your father’s world”...*

Is overall uncertainty holding back investment???

- WTO MCOOL ruling
- Animal welfare
- GIPSA “fair market” proposed rules / “anti-competition” listening sessions ...
 - Ultimately little action w/r/t beef cattle industry
 - BUT lots of wasted time & energy...
- Environmental regulation concerns persist
- Farm bill and tax code/policy uncertainties...
 - *If cow-calf herd used to expand when Exp. Profit=\$100/cow, what trigger is needed today???*

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Notable AgManager Resources

www.agmanager.info/livestock/marketing/

- **Weekly commentary & newsletters**
- **Current & historical price information**
- **Risk management/forecasting tools**

Other References of Notable Interest:

- www.agmanager.info/livestock/budgets/production/
 - Value of Gain (Situation and Decision Tool Overview)
 - Cattle Cycles (Historical Overview and Implications)
 - KSU-Beef Replacement (Calculate Economic Value of Purchasing Replacements)

Regular Newsletters & Commentary

- **KSU Radio Interview**

- www.agmanager.info/livestock/marketing/outlook/newsletters/default.asp
OR
- www.ksre.k-state.edu/news/DesktopDefault.aspx?tabid=66
- Weekly, released on Mondays (Tonsor, Peel, LMIC)

- **“In the Cattle Markets”**

- www.lmic.info/memberspublic/InTheCattleMarket/CattleMktsframe.html
- Weekly (Mark, Feuz, Petry, Riley/Anderson)

- **Recent Cattle Finishing Returns**

- www.agmanager.info/livestock/marketing/outlook/newsletters/FinishingReturns/default.asp;
- monthly updates based on *Focus on Feedlots* newsletter

Regular “Situation Update” Commentary: LMIC

- “Chart of the Week”
 - www.lmic.info/index.shtml
- “Weekly Price & Production Summary”
 - www.lmic.info/priprod/pandp.html
- “Quick Market Reports”
 - www.lmic.info/quick/quickdr.html

Current Price & Basis Information

- **Futures Markets**

- www.cmegroup.com/trading/commodities/ OR
www.agmanager.info/livestock/marketing/futures/default.asp
- LC, FC, LH & C, SB, S, W

- **Cash Markets**

- www.agmanager.info/livestock/marketing/graphs/default.asp#Price Charts
- www.agmanager.info/livestock/marketing/database/default.asp#Cattle and Beef Databases
 - Dodge City, Pratt, & Salina 700-800 lb steer; KS Direct Slaughter steer prices

- **Basis (Cash - Futures) Information**

- www.agmanager.info/livestock/marketing/graphs/default.asp#Basis Charts
- BeefBasis.com (www.beefbasis.com/)

Risk management and return forecasting tools available:

- **Feeder Cattle Sales Risk Management Tool**
 - Compare expected sales prices of alternative FC marketing strategies
 - www.agmanager.info/livestock/marketing/LRP/default.asp
- **Feedlot Profitability Tool: NAIBER's Feeding Risk Analyzer**
 - Forecasts feedlot returns and variability in returns for future placements
 - www.naiber.org/cattleriskalyzer/
- **BeefBasis.com**
 - Decision support for hedging feeder cattle (output for cow-calf; input for feedlots)
 - www.beefbasis.com/Home/tabid/53/Default.aspx

Other references noted in presentation

- **March '11 ERS Report on Cow-Calf Industry**
 - www.ers.usda.gov/publications/eib73/
- **Beef Demand Information**
 - Journal articles, fact sheet, annual & quarterly demand indices
 - www.agmanager.info/livestock/marketing/Beef%20Demand/default.asp
- **Animal Well-Being Information**
 - Journal articles, fact sheets, and short video summaries
 - www.agmanager.info/livestock/marketing/AnimalWelfare/default.asp
- **Animal Identification & Traceability Information**
 - Journal articles, fact sheets, and short video summaries
 - www.agmanager.info/livestock/marketing/AnimalID/default.asp

Weekly email distribution of AgManager updates

- <http://listserv.ksu.edu/web?SUBED1=AGMANAGERUPDATE&A=1>

OR email your request to:

- Rich Llewelyn [rvl@ksu.edu]