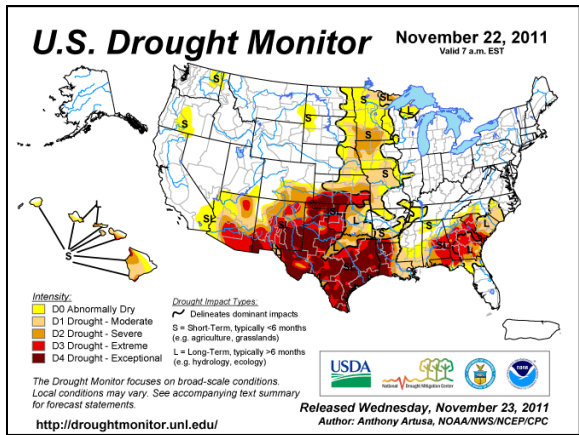



University of Nebraska-Lincoln EXTENSION Know how. Know **now.**

Drought: Planning Ahead to Save or Produce AUMs

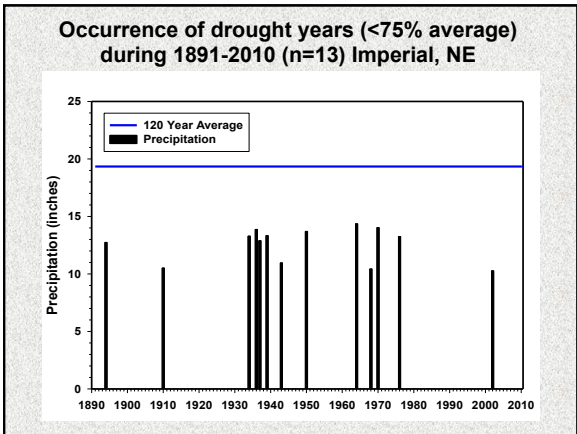
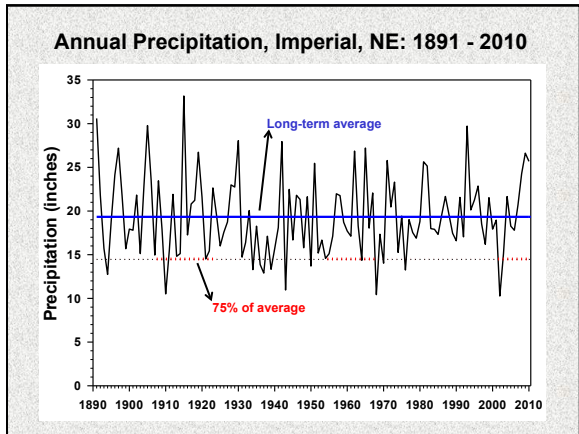


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Significant implications to agriculture

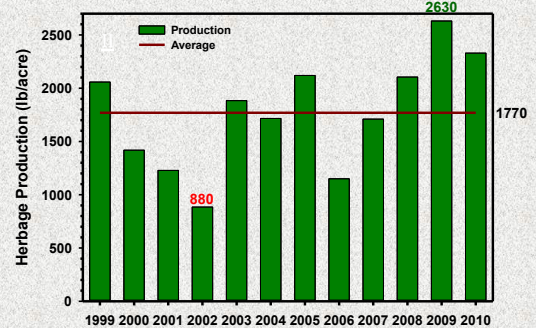
- Increasing CO₂ and other gases.
- Increasing average temperatures
- Central- Northern Plains: warmer low temperatures, longer growing season. Long-term average precipitation may be similar.
- Greater frequency of extreme weather events: excessive rainfall – drought.



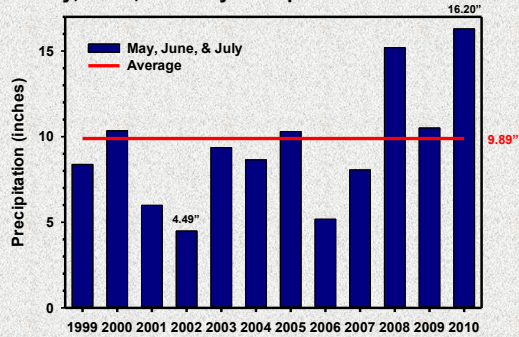
What is the forage production from our pastures?



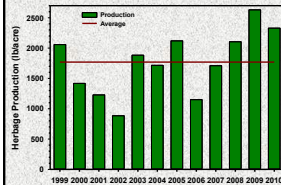
UNL-Barta Brothers Ranch: Herbage Production 1999 - 2010



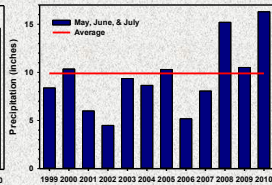
UNL-Barta Brothers Ranch: May, June, and July Precipitation 1999 - 2010



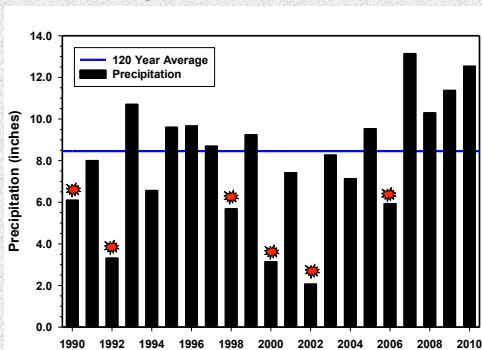
UNL-Barta Brothers Ranch: Herbage Production 1999 - 2010



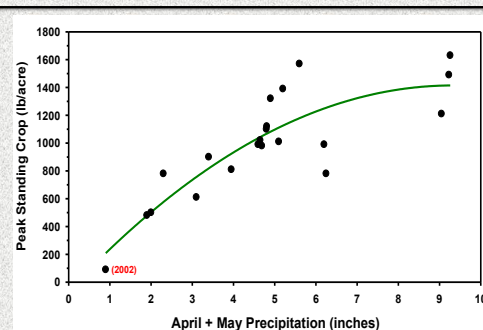
UNL-Barta Brothers Ranch: May, June, and July Precipitation 1999 - 2010

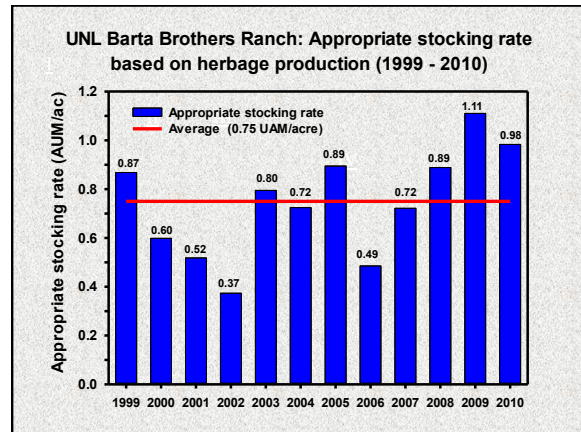
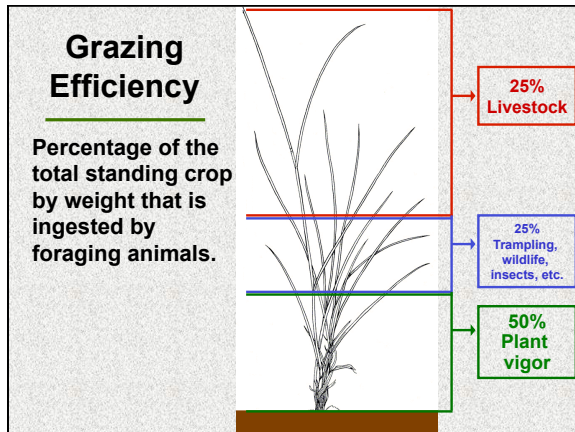


Total April, May, and June Precipitation, Imperial, NE: 1990 - 2010



Influence of April + May precipitation on peak standing crop, Cheyenne, WY, 1982 - 2002. (from : Derner et al. 2002)



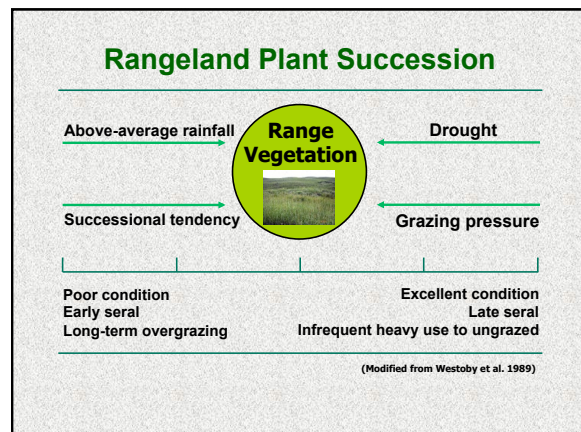
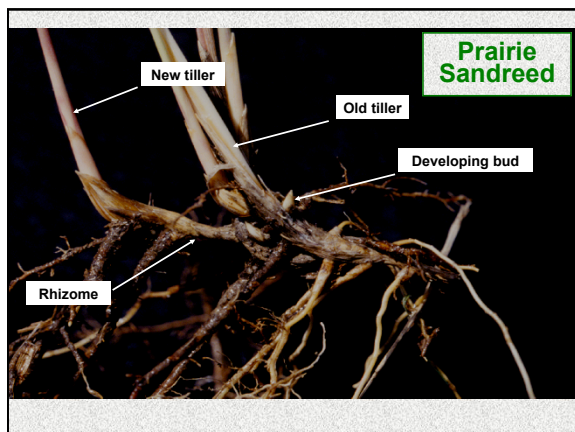


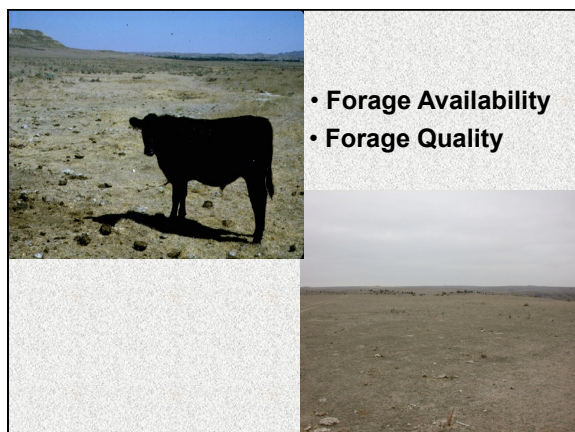
Plant and Grassland Response to Drought

- Reduced above-ground production and root growth.
- Fewer reproductive tillers (seed heads); plants remain mostly vegetative.
- Earlier maturity of plants.
- Summer dormancy.

Plant and Grassland Response to Drought

- Reduced formation of new buds that will produce next and future year's tillers.
- Good / excellent condition range will recover quicker after drought than poor / fair condition range.
- Increases in weedy species (sunflowers, six-weeks fescue, little barley, western ragweed, pepperweed, kochia, russian thistle).





Crude Protein Content of Cattle Diets on Sandhills Range

Date	Average	2002 (drought)
June 7	12.3	12.7
July 16	11.0	8.2
July 30	10.3	5.9
August 20	9.3	5.6
September 5	8.6	7.5
October 14	6.7	5.9

TDN Content of Cattle Diets on Sandhills Range

Date	Average	2002 (drought)
June 7	69	53
July 16	63	49
July 30	60	50
August 20	57	49
September 5	56	48
October 14	54	48

Strategies to Save Pasture AUMs

Animal Unit

- 1 AU = 1000 lb of animal
- 1 AUD (animal unit day) = 26 lb of forage (daily intake)
- 1 AUM (animal unit month) = 780 lb of forage

Planning

- Expected days of grazing
- Adjustments
 - Weaning
 - Culling animals
 - Marketing
 - Supplements
 - Purchased Feed and/or alternative grazing resources

Herd management actions used at the UNL Gudmundsen Sandhills Laboratory during the 2002 drought and resulting AUM savings (D. Adams).

Action	AUMs saved
Kept inventory current – culls sold as identified (n = 18)	18
Identified 15 cows as culls in May. These were sold in June as pairs instead of at weaning. (n = 15 pairs less for 5 months)	113
Weaned March born calves in September (1 month early). (n = 300 calves less for 1 month)	120
Steer calves shipped within 10 days of weaning (included in above action)	

Herd management actions used at the UNL Gudmundsen Sandhills Laboratory during the 2002 drought and resulting AUM savings (cont.).

Action	AUMs saved
Surplus heifer calves sold 3 weeks after weaning (2 months early)	24
Reduced March calving herd by 5% (15 cows) and sold remaining open and culls in September. (30 fewer cows due to June sales and the 15 reduction for 9 months (Sept. thru May)	324
20 open cows sold in Sept. (2 months early)	48
110 cows to corn stalks in early November to late February	475

Herd management actions used at the UNL Gudmundsen Sandhills Laboratory during the 2002 drought and resulting AUM savings (cont.).

Action	AUMs saved
25 pregnant June calving cows sold in January rather than in April	75
Total AUMs Saved for Cows (58 days for 520 cows)	1197
Estimated savings in hay = 140 tons or about 18 days for the entire herd.	
TOTAL COW DAYS OF FEED SAVED FOR 520 COW HERD = 58 (grazing) + 18 (hay) = 76 Days	

Forage organic matter intake (lbs/day) by cows and calves grazing Sandhills range

Date	Cow ¹	Calf	Total Cow + Calf
July 1991	26.1	5.9	32.0
September 1991	24.3	6.4	30.7
July 1992	27.0	4.0	31.0

¹ Average cow body weight: 1991 = 1097 lb., 1992 = 1139 lb.

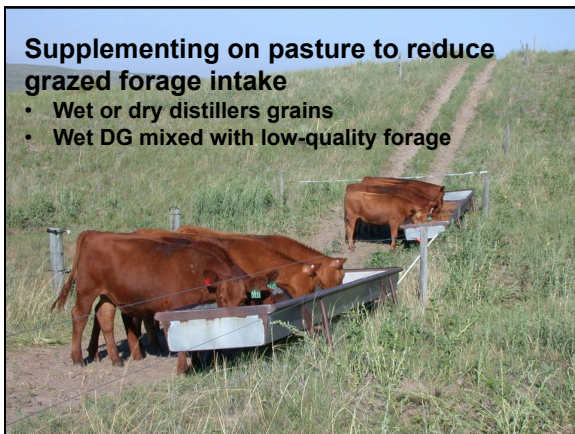
About 10 lb. of forage is conserved for each day a calf is weaned



- 10 lb. forage = 0.4 day grazing for a dry cow
- Positive effect on cow body condition score

Supplementing on pasture to reduce grazed forage intake

- Wet or dry distillers grains
- Wet DG mixed with low-quality forage



Emergency and Alternative Forages



Opportunity:
Hay production in 2012 ?

Annual Forages for Pasture

Cool Season Annuals

Spring seeded:

Oats
Spring triticale
Italian ryegrass



Barley
Field Peas

Annual Forages for Pasture

Warm Season Annuals

Late-spring or summer seeded:

Millet (grazing & hay types)
S X S hybrids
Sorghum
Sudangrass
Crabgrass
Teff
Corn



Annual Forages for Pasture

Summer or late-summer seeded (for fall forage):

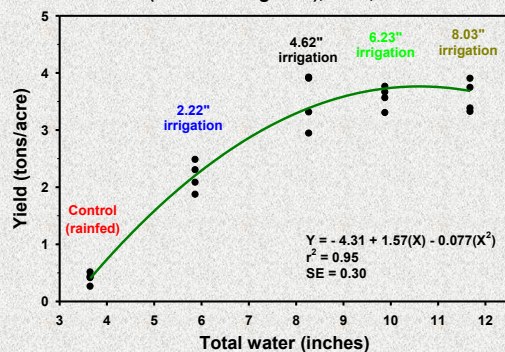
Oats and/or Turnips

- **Planting date:** late July through August
- **Seeding rate:** Oats: 2 bu/acre; Turnips 2-3 lb/ac

Rye, triticale, winter wheat

- **Planting date:** late August – September
- Minimal fall forage, but primarily the following spring

Foxtail Millet: Relationship between dry matter yield and total water (rainfall + irrigation), 2006, North Platte.



Irrigated Pasture



CRP: grazing or hay



Forage Testing





Drought and Drought Planning Resources

"Managing Drought Risk on the Ranch" www.drought.unl.edu/ranchplan

- Developed with input from rancher's and advisors:
 - Steps to develop a drought plan
 - Development of resource inventories
 - Decision-support tools for grazing and livestock management
 - Evaluating drought response options
 - Financial decision-support tools



Thank You