Climatic Impacts and Range Condition

David J. Kraft
Rangeland Management Specialist
NRCS, Emporia, Kansas

Climatic Impacts and Range Condition

- Identifying the problems or understanding drought symptoms.
  - Goals for today!
    - Identifying resource concerns
    - Understanding the impacts
    - Formulating an approach
    - Measuring the success or accomplishment

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- So what are some of the reasons for changes in plant communities?
  - Climatic conditions
  - Management
  - Combination of the two!

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- Drought is a major factor in range management!
  - In any given year, rangeland vegetation is either in the recovery phase, under the direct influence of drought, or by the producer's management, preparing for drought
  - Management strategies must provide plants with opportunities to maintain or improve vigor

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- Drought is generally defined as a prolonged period of time during which precipitation is less than 75 percent of average for a given year, or poor distribution of precipitation in a single year or less than average precipitation in successive years

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- History and Impacts of past droughts:
  - Dramatic shifts in species composition and productivity of native grasslands were documented in the Great Plains during and following the major drought of the 1930's

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- History and Impacts of past droughts:
  - Finding: The combination of drought and heavy grazing can cause severe reductions in forage production and plant vigor.

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- As plant communities change, the surface or plant cover also changes.
- Good grazing management is vital to maximize the effectiveness of precipitation.

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- Practices which increase plant cover or plant vigor lead to an increase in the amount of precipitation that enters the soil

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- When plant vigor improves, root systems become more extensive and provide surface openings for water movement into the soil profile

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- Plant litter and standing plants reduce evaporation losses by moderating extremes in soil surface temperatures and the impact of drying winds

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- Negative impacts of Drought and Management:
  - Lower range conditions intensify drought effects.
  - Decreased diversity in the native plant community reflects more severe drought impacts. (Lower range condition-more severe impacts)

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- Negative Impacts cont:
  - Recovery time is increased in rangeland where range condition or vigor is lower going into drought periods

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- Negative Impacts cont:
  - Improvement of rangeland condition and vigor should be practiced or targeted in years not identified as drought years, leading to quicker recovery of plant communities coming out of drought periods

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- Drought Plan? Do we need one? What does it contain?
  - A drought plan should:
    - protect vegetation and plant communities during a drought
    - hasten vegetation recovery after drought
    - be specific to your operation
    - minimize financial hardship

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- Drought Plan cont:
  - Drought plans identify action to be taken at the first sign of drought as well as with continued indications of moisture and forage shortages
  - Stocking rate adjustments need to be specific in terms of how many and how long

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- Drought Plan cont:
  - Actions should be based upon seasonal check points and indicators
    - Ex. (monthly monitoring, moisture to begin the growing season, quickness of green-up of desirable species, production available based upon expected yields throughout the growing season, and carryover or accumulated forage)

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- Contingency Plan Trigger Dates

East	Central	West
April 1	Sept 15 – Nov	24 Month
June 15	April 1	June 1
July 15	June 15	July 1
Aug 15	July 15	Aug 1
Sept – Nov	Aug 15	

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- Stocking rate rules of thumb:
  - Cattle require approximately 3% of their body weight in pounds of forage each day
  - 1000 pound cow = 30 pounds of air dry forage
  - At a minimum 900 pounds per month

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- Stocking Rate Breakdown:
  - If your rangeland produces 4000 pounds/acre
  - Approximately 1000 pounds is available to be grazed
  - Meaning it takes approximately one acre/month to support an 1100 pound cow if your rangeland averages 4000 pounds of production

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- Stocking Rate Breakdown:
  - Depending upon the production potential of your rangeland, you will need more or less acres to support your livestock

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- Stocking Rate Breakdown:
  - What do I need to know?
    - What does my rangeland/grazingland produce in pounds of air dry forage?
    - What do my livestock actually weigh?
    - What is their true demand?
    - How do I compensate for cows with calves?

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- Stocking Rate Breakdown:
  - Are there years when production is greater than normal as well as less than normal?
  - What are the impacts to the livestock as well as the forage or plant community during drought?
    - IT DEPENDS! – ON YOU!

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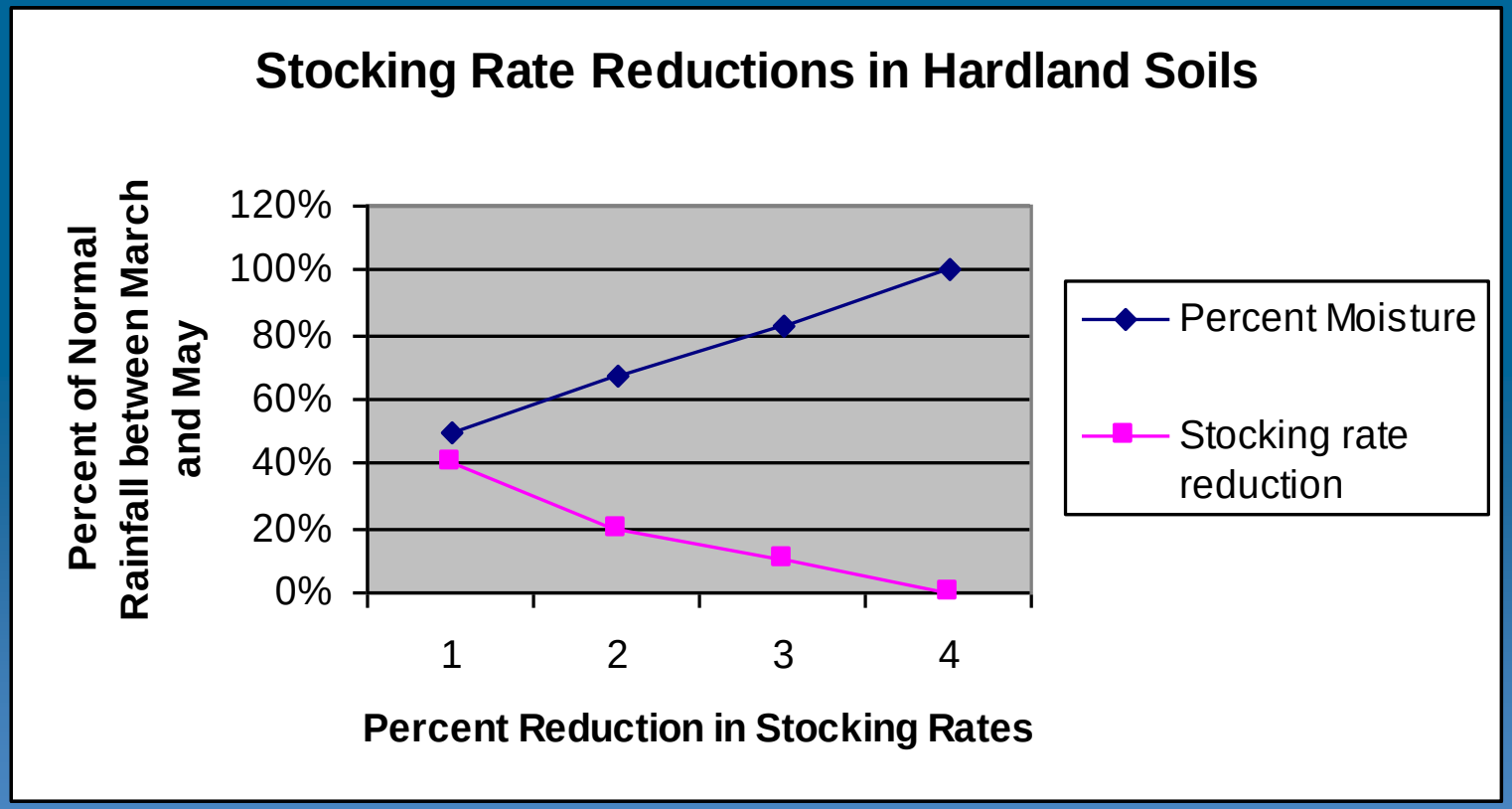

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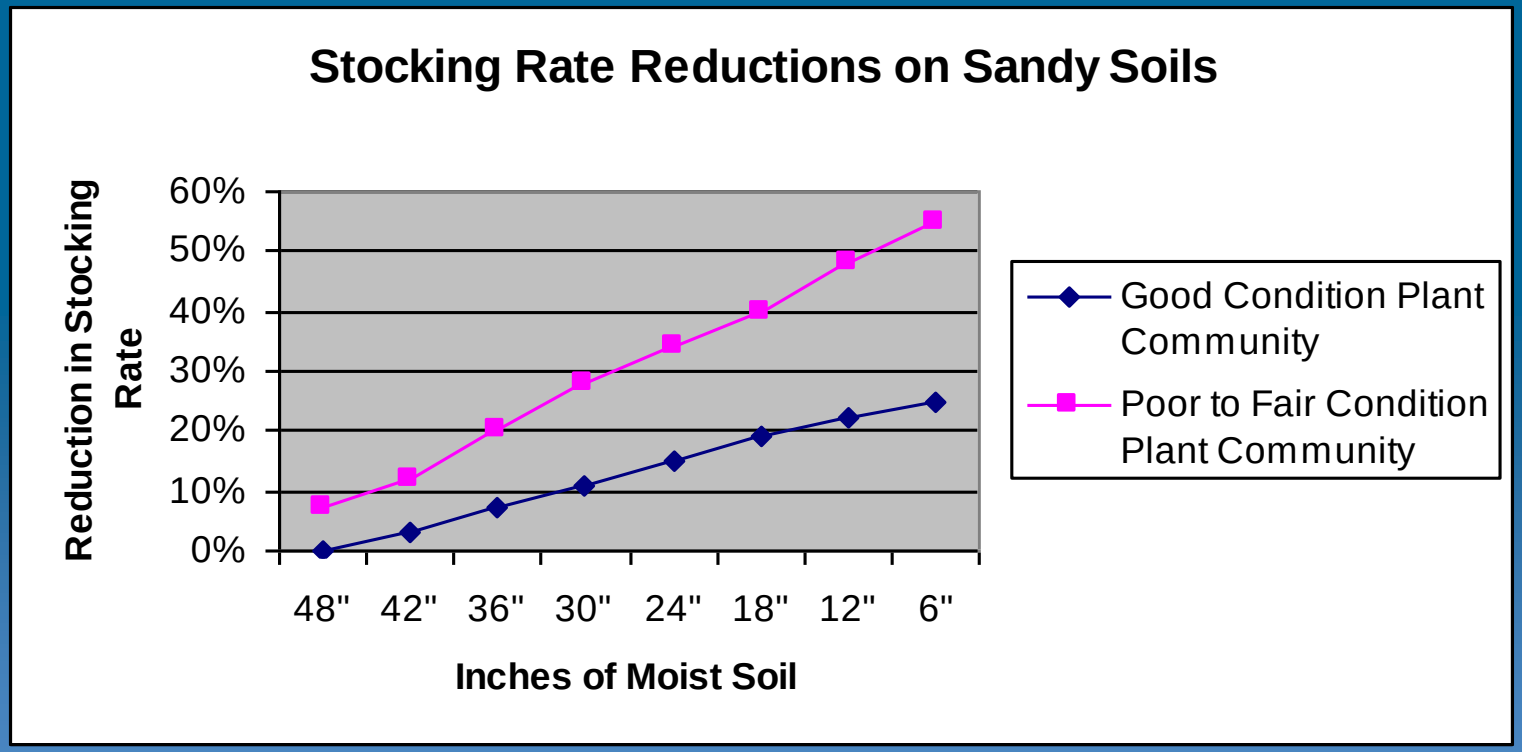

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Region	Precipitation - 2011 through November		
	Total	Dep.	% Normal
Northwest	16.36	-3.43	83
West Central	13.38	-5.87	70
Southwest	8.51	-10.36	45
North Central	21.81	-4.37	83
Central	16.71	-11.06	60
South Central	12.18	-15.15	45
Northeast	24.36	-9.56	72
East Central	19.77	-15.58	56
Southeast	24.1	-12.7	65
STATE	16.95	-9.79	63

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- Stocking Rate Breakdown:
  - Typically animal performance does not suffer in drought conditions until animal intake is reduced significantly (forage quality remains high)

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- Stocking Rate Breakdown:
  - Remember, heavy continuous grazing which alters the plant community and changes the surface of the soil, makes possible:
    - harsher conditions and drought impacts
    - more difficult and lengthy recovery periods
    - potential financial hardship due to extended forage reduction

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- Things to remember:
  - The healthier a plant community enters a drought and the more carefully a plant community is managed during a drought, the quicker and healthier a plant community will respond coming out of a drought

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- Examples of Management Style Changes
  - Grazing systems which focus on rest
  - Flexibility in herd management
    - Early weaning
    - Later calving season
    - Minimizing feed costs or inputs
    - Limit feeding hay

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- Questions

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