Rangeland Management: Drought

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While a majority of NM ranchers have experienced and adapted to drought (figure 1) over the last two years, they remain hopeful the rain will return in 2013. Many ranchers are already considering the best plan to pursue when the rains return. The National Oceanic and Atmospheric Administration Climate Prediction Center (NOAA) predict that “Under neutral Pacific Ocean conditions, the general winter outlook for much of the country is for equal chances of above-average, average, or below average precipitation” (http://www.cpc.ncep.noaa.gov/products/predictions/long_range/fxus05.html). NOAA also predicts persistent drought through March (Figure 2). What is clear is that the future climatic conditions are unknown and planning for the next year, one way or the other will be difficult.

Figure 1: Drought 2011, 2012 (http://droughtmonitor.unl.edu/archive.html)
NMSU Extension Animal Sciences and Natural Resources specialists have conducted drought management programs, in response to county requests, every year since 1996. We have discussed drought management throughout New Mexico and ranchers have responded well based on their individual needs. Drought management recommendations include:

1. Monitor forage supply and demand- know what you have and plan. Don’t wait until it is too late.
2. Don’t try to feed through a drought
   a. if you are supplementing use energy dense supplements (you’re short of grass (energy))
   b. If you providing all requirements, do so in a pen. On the range they will continue to graze, which won’t benefit the range or the animal.
3. Early weaning, early selling. Lactating animals consume about 1/3 more forage and prices are usually higher earlier in the year.
4. Cull cows deeper than normal. Open cows, older animals, poor condition animals.
5. Monitor ponds and dirt tanks. Water quality and quantity (may not be necessary after 2 years drought).
6. Drought reserve pasture- likely already used.
7. De-stocking plan in writing- probably already implemented, but may need revise de-stocking plan if drought continues into a third year.
Prolonged drought has likely caused:

1. Plant mortality - previous drought estimates of up to 50% mortality even on ungrazed pastures.
2. Decreased production - surviving plants have been stressed and unable to replenish roots.
3. Tanks and ponds will take time to refill.
4. May see an increase in forbs
5. Possible increased risk from poisonous plants

By now ranches have already reacted to the range conditions that accompany the drought, if not it is probably too late. So what should be done if the drought breaks and we can start rebuilding? Research indicates that if you maintained proper stocking rate relative to forage conditions from the beginning to the end of the drought that range plants will recover faster than if you didn’t stock properly. Whether in drought or not, the key is to balance forage demand and supply.

When we do receive moisture it is going to take time for the rangelands to recover, soil moisture has been depleted and forage plants have been stressed. Assessing and planning are important regardless of drought conditions. Know what forage and water you have and how long it will last. This is also a good opportunity to evaluate grazing management, is what you have been doing working or is there areas for improvement. If you have been keeping track of precipitation and production an assessment not only provides information on the current conditions, but also provides an indication of how the resources have responded to management. An assessment is the first step in determining appropriate actions for recovery of the rangelands and any financial considerations. Assessment factors include:

1. Vegetation composition - forage and non-forage plants, desirable and undesirable.
2. Ground cover - important in maintaining soil and soil moisture
3. Production - important in determining stocking rate
4. Utilization - how much was used and where, identifying overused and underused resources
5. Precipitation records

A few Range Improvement Task Force publications that you may find useful can be found at the following website: [http://aces.nmsu.edu/pubs/taskforce/](http://aces.nmsu.edu/pubs/taskforce/).

- Report 7: Guide to NM Range Analysis
- Report 53: Monitoring Rangelands in NM
- Report 58: Using the Rapid Assessment Methodology (RAM) to make Adaptive Management Decisions

Soil properties and conditions are important contributing factors in the response of vegetation during and following drought. There is a tool available on the NRCS website [http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm](http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm) that may be helpful in your planning and assessment. This tool allows you to select your area of interest (using the AOI button) and provides “suitability and limitations for use”, “soil properties and qualities”, and “ecological site assessments”. It also allows you to add information to a soils report that can be printed or saved.
The primary objective is to balance forage supply and demand yearlong, with or without drought. With precipitation, forage will respond, but don’t assume normal production (stocking rates) has returned. Know how much forage is available and stock accordingly, I recommend an initial light stocking rate as these plants have been in survival mode and need an opportunity to recover.

There has been some interest in possible reseeding of rangelands following drought. Below are some thoughts to consider in determining if reseeding is a realistic possibility for you.

1. Reasons to reseed
   a. Ranch objectives
   b. Higher quality forage
   c. Increase seasonal supply of forage
   d. Stabilize soil

2. When to reseed
   a. Less than 10-15% desirable forage
   b. Greater than 60% chance of effective precipitation (0.6-1.0 inches of rain) within 3 weeks

3. Site selection-
   a. Productive soils- soil depth allows root development and water storage
   b. Avoid rocky (>50) barren sites- temperature extremes
   c. Plant residue- cover to hold moisture, protect seed.
   d. Avoid slopes
   e. Receives runoff
   f. Fits ranch management objectives

4. Seed selection-
   a. Native- grown within 300 miles South and 200 miles East, West, and North
   b. Available and affordable
   c. Certified
   d. Easy establishment
   e. Palatable
   f. Productivity of grasses and prevents erosion under moderate grazing
   g. Mixes- shallow and deep rooted, cool and warm season

5. Costs and Opportunity Costs
   a. Seed
   b. Seedbed preparation- remove competition
   c. Brush control, herbicide use
   d. Seeding method
   e. Protection from grazing-
      i. 1 growing season with good conditions
      ii. 2-3 growing seasons with less than optimal conditions
   f. Irrigation

For more information- http://aces.nmsu.edu/ces/animal/documents/seeding-nm-rangelands-optimized.pdf
Some consideration regarding reseeding rangelands under drought conditions are a lack of current soil moisture and a low probability of effective precipitation post-seeding. Additionally, preparation of the seedbed may destroy drought resistant forage that would be needed if risky seeding is unsuccessful.

### 2013 Upcoming Events

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