



Range Management--Dealing with Drought

Regardless of how drought is defined, dealing with it is an extremely serious proposition. Drought can occur as growing season dryness, winter drought, or both. In the Intermountain West, drought occurs one out of every four or five years. If drought is not planned for, the beef operation may not survive. Even when it is planned for, serious adjustments must be made.

To manage successfully in the face of drought the producer needs to know how drought affects plants, cattle, and their management, and what options exist to avoid the extreme consequences of both ruining the range and selling the cattle.

Effects on Plants

Forage production is decreased dramatically. Plants with shallow roots are affected much more than deeper-rooted ones. Annual plant production may be practically non-existent. High ecological condition ranges will be less seriously affected.

Perennials will have to be dormant for longer periods than normal. Very little is known about the plant's ability to store carbohydrates under abnormally dry growing conditions. It is possible that no carbohydrates are stored at all, but that really is not known for a fact. To insure the greatest potential for health, plants probably should receive as light a grazing pressure as possible and practical during their growing season.

Roots make up 50 to 80 percent of most range plants. If any deep soil moisture exists at all a healthy, deep-rooted plant may be able to get it. Roots cannot penetrate dry soil to get at deeper moisture.

The length of drought has a large bearing on plant health. Perennials continue to respire while dormant, so the size of their energy reserves is even more important than normally. When drought continues for more than 1 year, plants may begin to break up. As the plant community opens, it becomes more susceptible to invasion by

annuals and lower-value plants. When droughts are severe over a period of years this could happen even with light or no grazing.

Ability of perennials to recover following drought seems to be closely related to the degree of grazing pressure existing before and during drought. Utilization that exceeds 60 percent of current growth can decrease some plant species' ability to recover, according to a recent study in Oregon. However, light use (not above 25 percent) seemed to have a beneficial effect. Moderate use (25 to 60 percent) seemed not to affect production of several major species. The degree of use seems to affect the plant's ability to initiate growth after drought, as early growth was slower on moderately and heavily grazed plants as compared to lightly grazed to ungrazed ones.

Nutritive values of individual plants during and shortly following a shortened and dry growing season actually may be higher than normal, since there is no dilution effect of nutrients by much top growth. But, the subsequent dry season often is longer than normal, and deterioration of forage value probably will occur at the same rate as a normal year. This results in less overall forage value, although more as a result of lowered quantity than lowered quality.

Effects on Cattle and Management

Unless stocking pressures are reduced in accordance with forage availability, weaning weights may be reduced seriously. Research shows near normal weights when stocked in relation to reduced forage supply. Having enough stock water will aid a cow in lactation. Since lack of water often is as serious as lack of feed, some weaning weight reduction may have to be tolerated.

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Upsetting the cows' ability to breed on time seriously affects future production. When cows do not get adequate nutrition during lactation, they respond by missing heat periods or, at best, will breed but not conceive. Drought in the period following calving and remaining through several months can delay a cows' breeding for 3 months or longer. Special provisions can be made to provide cows with good feed to keep them on schedule. If not, a producer is looking to several years of reduced production from cows who breed late and thus calve late the following year. Late calves are always lighter. A cow that calves 3 months late, even if she could be managed to breed back one cycle early per year (not probable) would take at least 4 years to get back on schedule. If cows had 4 or more years of productive life remaining, producers should consider skipping a year to get back on schedule.

During drought, normal water supplies such as reservoirs and ponds may not be available. Coupled with less stream and spring flow this will result in inadequate animal distribution and lowered performance and condition. Although unused forage may be present in the farthest reaches of pastures, the probability of harvesting it is questionable.

Management Options

Before you can look at options, you must have a clear picture of all available resources. Inventory your own available feed supply and where it occurs. Assess alternative feed supplies, their availability, and cost. Evaluate your livestock inventory.

Droughts mean reduced stock number. If you have to sell, keep only healthy, early to mid-aged, productive cows. Cull out the late calvers, regardless of age. Keep fewer replacements.

Determine if you have any viable possibilities of developing more water or if additional fencing will be required, even temporarily, to make better use of your range feed. Taking action at the beginning of a drought can be critically important later. Options will depend on levels of past grazing use. Animal adjustments will be necessary regardless of the option, unless there is a real abundance of unused available forage.

Light-moderate history

Reduce grazing load to match forage supply. Continue light to moderate use which will allow plants to maintain their present level of vigor.

Heavy grazing use history

Defer use if at all possible. Range plants probably have reduced root systems and they need to make as much growth as possible. Light grazing following dormancy then could occur. You can't defer use if you do not have alternate feed.

If you do not have any feed alternatives your options are fewer:

- Reduce numbers as much as you possibly can, at least for early season grazing.
- Spread grazing load uniformly. A plant should only be grazed one time. There will be little opportunity for regrowth if grazed repeatedly.

- Stock water will be a real problem. Graze the areas first where the water source may fail in later season. Haul water, if necessary, but prepare for high costs. Drinking on alternate days will not lower production of dry cows and yearlings but a lactating cow needs water daily or calf gains will be reduced by one-half or more. Lactating cows drink 15 gallons per day in summer.

- Supplement low-quality feed. Do not substitute feed. If supplemented, cattle should rustle for themselves better; if substituted they will not. Do not let the cattle condition serve as an index of range utilization. Animal performance can remain stable, even improve while the range is being hurt.

- Wean early and feed at home, at another feedlot, or sell. Calf performance will stay up. Cows won't get as poor, or if poor won't stay as poor. If in extreme drought, calves can be weaned early and treated as dairy calves are. This will be better than suffering both poor calf and cow performance.

If you have alternate feed, consider:

- Grazing annuals heavily. Production from annuals may not be much but they can be grazed heavily and still reproduce.

- Graze crested wheatgrass, if available. It can tolerate it better than native plants.

- Stay on hay meadows longer if you can stand the impact of a potentially lowered hay supply. If irrigation water will be less than normal (it probably will be), concentrate it on your best-producing areas and graze the remainder. If you have a firm water supply, you might graze the entire area and delay growing the hay crop further into summer when good weather should mean more rapid growth.

- Feed crop by products, if available.

- Feed hay longer. Strongly consider this. Delayed breeding may be avoided and calf performance should stay up.

After The Drought

Resist the temptation to restock until you are certain your forage supply will permit it. Plants with a light to moderate grazing history will recover their productive ability fairly soon, perhaps the first year under above-average weather conditions. Plants which were heavily grazed will take longer to recover and some species will not if heavy grazing continues. Plants have to be given the opportunity to get enough energy to improve their vigor.

Make Drought Management Plans

- What parts of your normal year plans can be used during drought?
- Maintain all watering facilities and develop more if possible.
- Keep some reserve feed.
- Keep good production records on your cows. If you have to reduce, records will really help in determining sale animals.