

Stocking Rate and Grazing Management

Charles R. Hart and Bruce B. Carpenter

Associate Professor and Extension Range Specialist, Assistant Professor and Extension Livestock Specialist;
The Texas A&M University System

When dealing with drought, some of a livestock producer's most important decisions concern stocking rates and grazing management. The effects of these decisions go far beyond survival of the current drought and can greatly influence recovery afterward.

Because no two ranches are identical, managers need to make stocking rate and grazing management decisions that are compatible with the goals of the operation. For example, stock reduction may be a viable option for a commercial cow-calf producer but not for a purebred breeder. These decisions need to be made not only during, but also before and after a drought.

Monitor forage supply and demand

Simply stated, forage supply must meet or exceed livestock demand. If it does not, the lack of forage base may eventually contribute to the demise of the operation. During a drought, you must constantly evaluate range forage to match supply with demand.

When supply can no longer meet demand, reducing stocking rates pays big dividends: Desirable forage plants incur less damage; supplemental feeding costs are reduced; losses to toxic plants are lowered; and the range recovers more rapidly after the drought.

If stock remain in a pasture too long without adequate forage, long-term carrying capacity for both livestock and wildlife may be severely reduced. Several kinds of ecological damage can result:

- More rainfall runs off when there is too little plant and litter cover on the soil surface, leaving less moisture in the ground for plant production.
- Erosion increases, removing soil needed for plant production.



- Organic matter in the soil decreases.
- The plant root mass eventually becomes depleted, reducing the plant's ability to recover after grazing or extreme environmental conditions.
- Undesirable plant species invade.

Equally important is to determine the supply of forage available for livestock consumption. Removing too much forage compromises a plant's ability to recover after drought. Future forage production depends on having healthy plants that can survive drought and recover quickly when favorable conditions return.

To help determine how much forage you have, see Extension publication B-1646, *How Much Forage Do You Have?* Another Extension publication, E-62, *Rangeland Drought Management for Texans: Livestock Management*, in this series also provides information on taking a forage inventory.

To help protect forage resources, you need to maintain a proper stubble height, which is the amount of residual forage left after grazing. Different classes of rangelands have different optimal levels of plant residue (Table 1). Grazing exclosures and permanent photo monitoring sites are effective tools for monitoring residual forage levels. For more information on these tools, see Extension publication L-5216, *Range Monitoring With Photo Points*.

Table 1. Optimal amounts* (pounds/acre) of ungrazed forage for different types of rangeland.

Desert	Shortgrass	Midgrass	Tallgrass
250	300-500	750-1,000	1,200-1,500

*Leave the higher amounts ungrazed if improvement is desired or if droughts are frequent.

Table adapted from Extension publication L-5141, *Do You Have Enough Forage*.

Use Conservative Stocking Rates

Stocking rate and grazing management decisions made before, during and after a drought can determine whether plants survive. Plants that have been consistently grazed too close before drought are much less likely to survive a drought because of their weakened state. Likewise, excessive grazing after a drought does not give plants the rest needed to recover from dry conditions.

If droughts are common in your area (such as in West and South Texas), conservative stocking rates will provide adequate “unused” carryover forage that can be used when drought occurs. However, in severe droughts, you eventually will have to de-stock or buy feed.

Keep the stocking rate flexible

When developing a plan for reducing stocking rates, the most important factor may be herd mix. Flexibility must be built into the herd if droughts occur often.

In areas where droughts are common, breeding herds should constitute no more than 50 to 70 percent of the total carrying capacity of the ranch during normal years. The rest of the herd should be yearlings or stocker animals.

When drought occurs and forage is scarce, reduce livestock numbers by selling stocker animals or year-

lings first, thereby protecting the integrity of the breeding herd. Although your short-term profits will be reduced, the ranch is still yours, it has a higher potential for rapid recovery after the drought, and you can restock more quickly.

Keep accurate records on herd performance so that when the drought becomes even more severe and the breeding herd must be reduced, you can identify the least productive animals and cull them first.

Another option for severe drought is to find alternative feed sources, such as wheat pasture, crop stubble or leased rangeland. It is generally not financially sound for commercial livestock operators to buy feed to keep animals for a long period.

Manage grazing before, during and after drought

The best time to plan for drought is during non-drought years. A rotational grazing system can improve overall range health by giving plants rest from grazing. Plants will be more vigorous and their root systems better developed if you use a rotational grazing system. When a drought occurs, damages are minimized because the plants are in better condition and have more root reserves.

Provide longer rest periods during drought by increasing either the number of pastures within the system or the length of stay in a single pasture.

During a severe drought, you still may need to reduce the number of grazing animals to prevent overgrazing. Even the most sophisticated grazing system cannot overcome an improper stocking rate.

In any grazing system, pay attention to the distribution of livestock in a pasture. Use the entire pasture uniformly during drought to help lengthen the rest for desired forage plants. You can move animals into areas that are usually not grazed by strategically placing fencing or salt, supplement, mineral and temporary watering facilities. This allows rest for areas used more heavily.

Remember: During drought, plants may go dormant before the end of the growing season. Therefore, they will be dormant for a longer period than normal and will depend on the food stored in the roots earlier in the year. During a drought year, the plants may rely on stored carbohydrates for as long as 9 to 10 months or more, leaving only 2 or 3 months to recharge their root reserves for the coming year.

This makes it even more important for green leaf material to remain long enough to produce and store adequate food reserves.

Summary

Stocking rate and grazing management decisions made during drought affect not only current conditions, but also the recovery rate of rangeland plants after drought and, perhaps, whether or not you will remain in business in years to come.

Keep in mind that the decisions you make before and after a drought are just as important as those made during drought. Consider these strategies when dealing with drought:

- Maintain as much carryover forage on the ground as possible.
- Keep the herd composition flexible.
- Implement a grazing system that allows periodic rest of native pastures.
- De-stock as early as possible. Make adjustments before either the range or the livestock suffer.

- Balance forage supply and demand before, during and after drought.
- Protect the soil by maintaining minimum forage levels.
- Refrain from fully restocking after the drought until the forage has recovered completely.

Other drought-management publications include:

E-61: *Rangeland Drought Management for Texans: Planning: The Key to Surviving Drought*

E-62, *Rangeland Drought Management for Texans: Livestock Management*

E-63, *Rangeland Drought Management for Texans: Supplemental Feeding*

E-65, *Rangeland Drought Management for Texans: Toxic Range Plants*

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