



Tips for Drought Recovery

Optimizing moisture to rebuild vegetation levels.

by T.S. Gatz

Recent U.S. droughts have been the most expansive in decades, and you don't have to look at a U.S. Drought Monitor map to know the extent of the drought across the country or, of high importance to you, if your farm or ranch has been in a drought area.

Let's look at the bright side, because every drought has to break. The question, however, is how do you know if a drought has ended? Is it when the key topic at the coffee shop shifts from the weather to politics? Or is it when ponds and other water reservoirs are filling up?

"While low surface and groundwater levels are indicators of extended drought, the drought is not ended until we have rainfall sufficient to replenish deep soil moisture in our pastures," states Wayne Hamilton, director of the Center for Grazinglands and Ranch Management and a senior lecturer in the Department of Ecosystem Science and Management at Texas A&M University. "Heavy rainfall that provides runoff for reservoirs may not recharge subsoil moisture levels. It is the deep moisture in soil profiles that extends the time between rains to get forage growth and production through dry periods.

"If rainfall is sufficient in amount and over a long enough time period to replenish deep soil moisture, many other drought symptoms, such as low reservoirs, will likely be cured, as well."

Steps to recovery

Hamilton points out that, if a drought is long enough, weather and time will cause vegetation to deteriorate.

"The critical task for range managers

is to rebuild vegetation levels as quickly as possible to capture and retain precipitation," he states. "Remember, droughts tend to end with periods of above-average precipitation."

The grazingland specialist stresses that the kind and density of plants covering the soil to intercept rainfall and retard surface flow is critical.

"Chances are that, when the first significant rains come during drought, the soil surface will have little standing crop or mulch to absorb the energy of hard-falling rain, reduce the sealing of the soil surface, promote infiltration and reduce runoff and erosion," he explains. "This may be true even if pastures have been deferred from grazing to protect soil cover."

Daren Redfearn, associate professor of forage and pasture management at Oklahoma State University, notes that even on well-managed pastures, stand damage is readily apparent following drought. He says slightly damaged stands — less than 30% stand loss — should recover quickly with weed control, proper fertility, and deferred grazing or harvest once satisfactory growing conditions return. Stands that are moderately damaged — between 30% and

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60% stand loss — should fully recover with weed control, proper fertility, and deferred grazing or harvest.

Texas A&M's Hamilton notes that the best way to restore vegetation after drought is to "help nature to the greatest extent possible."

"It doesn't rain grass. It rains water, and we must then optimize that moisture to grow vegetation," he interjects. "Once the drought breaks, it is important not to restock too quickly.

"The range should be allowed to recuperate and gain in strength and vigor. Nature helps us with a little-known phenomenon, as large pools of total nonstructural carbohydrates in drought-stressed plants appear to enhance production when the drought breaks."

Redfearn underscores the importance of patience when it comes to successful pasture recovery following a drought. He advises producers to manage pastures that were overgrazed due to the drought to manage them as new plantings. This includes aggressive weed control, fertility based on a proper soil test and grazing deferment. If you can manage only one practice, he said he would choose weed control.

"Control weeds as soon as you see



them following a drought,” states Darrell Deneke, extension integrated pest management coordinator at South Dakota State University. His post-drought weed management advice includes:

1. Control weeds at the recommended stages for annuals, biennials or perennials;
2. Do not let the weeds reach seed maturity;
3. Prevent spreading seed to new areas or adding to the seed bank;
4. If you allow livestock to graze weeds, do so before the plant produces viable seed; and
5. Monitor areas of the pasture for weeds that may have high livestock pressure, such as corners, feeding sites, and around stock tanks and ponds.

Deneke also urges producers to not assume it is safe for livestock to graze weeds, particularly if there is an abundance of weeds in an area of the pasture.

“Poisonous or toxic plants may be quick to respond from a drought period, and with limited forage available, livestock may be tempted to eat it in the early spring,” he explains. “If there are areas with highly toxic plants, it may be wise to keep livestock off that area until later in the season and control the plants if they are at the correct stage of growth.”

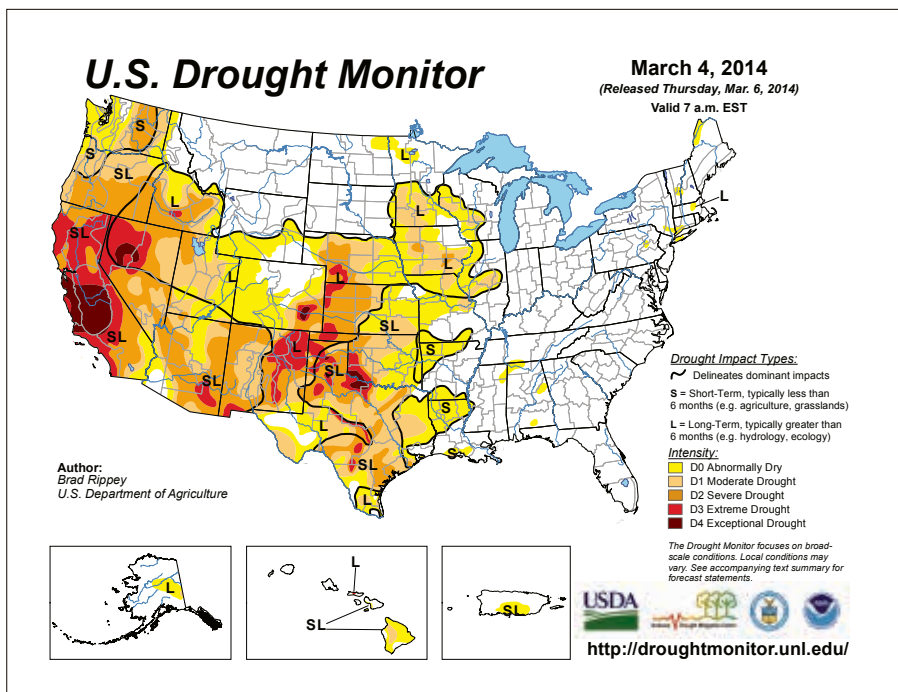
“If the plants or weeds are nontoxic and a potential source of livestock grazing, make efficient use of them during the growing season. This can provide desirable vegetation and advantage while still stressed from the drought,” Deneke offers. “That said, be sure to keep your stocking rates adjusted to a level that allows the desired vegetation a chance to rebuild their roots and increase overall plant vigor.”

A handy tool that can help you evaluate a drought-stressed pasture is the USDA Natural Resources Conservation Service (NRCS) Grazing Lands Technology Institute *Pasture Condition Score Sheet*. This score sheet focuses on a variety of factors such as percent desirable plants, plant cover, plant diversity, plant residue, plant vigor, percent legume, uniformity of use, livestock concentration areas, soil compaction, erosion, soil fertility, upper 4-inch root zone pH, site adaptation of desired species, climatic stresses and insect and/or disease pressure.

The score sheet can be accessed online at www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044243.pdf.

Renovation

Before you tear up a pasture, grazing



management specialists suggest considering pasture renovation, which can improve species composition, as well as increase the population of a selected species in a pasture. The NRCS *Pastures for Profit* publication emphasizes that pasture renovation is less expensive than tillage and conventional establishment, provides forage more quickly, and is less risky in terms of stand loss and erosion.

Five key factors that deserve considerable thought when deciding which method of pasture renovation is best for your situation include:

- ▶ the current condition and species composition of the existing pasture;
- ▶ amount of money and effort you are willing to spend;
- ▶ length of time you are willing to take a pasture out of production;
- ▶ length of time you are willing to wait to get good establishment; and
- ▶ willingness to use tillage and/or herbicides.

Renovation also requires that you know your current fertility levels, have pinpointed which legume or grass species/variety to use, and have decided whether a pasture needs a total or a partial renovation.

Since few producers can afford the time or the cost of a whole-farm or ranch renovation, Rob Kallenbach, state forage extension specialist with the University of Missouri, advises producers to renovate the worst pasture or pastures first. His choice for renovation is the pasture that has fewer than 50% desirable plants. His other criteria for selecting pastures to renovate are those with very thin stands and extremely weedy

areas or fields that limit animal-carrying capacity.

“If you’re wanting to establish warm-season grasses, Mother Nature is breathing down your neck since we’re coming into spring,” Kallenbach states. “Sometimes we look at our pastures and feel the pressure to do something now, but the best thing we can do ‘now’ is to plan.

“In the coming months you should soil-test for fertility, tackle weed control and locate the seed you want in sufficient quantity. While locating seed in sufficient quantity may sound easy, you might find it to be quite challenging as grass seed is getting harder to come by.”

While pasture stands may not appear to be very thick, Kallenbach says existing grasses and weeds must be killed prior to pasture renovation so they don’t provide competition for nutrients. It’s all about giving the next species in line every opportunity to become established.

With so much information online, Kallenbach urges individuals researching online about renovating pastures to not get hung up on dates about what to do when.

“Cool-weather grasses or warm-weather grasses, always establish grasses based on your climate,” he adds. “If you’re wondering about timing and what is best for your area, contact your county extension agent or your state forage specialist. We’re here to help you succeed.”



Editor’s Note: T.S. Gatz is a freelancer from Windsor, Colo. She has been writing about the beef industry for more than 40 years. For more on drought, visit the Angus Journal’s drought topic site at www.angusjournal.com/drought.