



**COLLEGE OF AGRICULTURE
AND LIFE SCIENCES**
COOPERATIVE EXTENSION

Serving Cochise, Graham, Greenlee, Pima, and Santa Cruz Counties

Featured Plant: Junegrass

Koeleria macrantha



DESCRIPTION

Growth Habit: A medium to small perennial bunchgrass 1 to 1½ feet tall.
Color: Bright green when growing in good light; light green in moderate shade.
Leaves: 1½ to 5 inches long; narrow, flat, sharp-pointed and ridged and rough on the upper surface; arising largely from the base of the plant.
Inflorescence: Seed stalks numerous, slender, and 1 to 1½ feet tall. The inflorescence is a dense, cylindrical shiny spike 1½ to 6 inches long, 3/8 inch wide, tapering at both ends.

OCCURRENCE

Moderately abundant in all counties in the state except Yuma at elevations from about 4,000 to 9,000 feet. Although this grass grows on nearly all soil types, it is most abundant and makes the best growth on sandy sites. The grass rarely forms pure stands but is one of the most widely distributed of all western grasses.

FORAGE VALUE

Junegrass is rated as good forage for all classes of livestock. It greens up earlier in the spring than most grasses and is often over grazed because of this trait. It grows most actively and produces the bulk of its feed during the summer after the rains begin.

GRAZING MANAGEMENT

Care must be taken not to over graze Junegrass in the spring when it first greens up. When the plants are grazed during the growing season some seed stalks should be left for seed production and to make certain that the vegetative parts of the plants will not be grazed too closely.

From: *Arizona Range Grasses: Their Description, Forage Value, and Grazing Management*. George B. Ruyle and Deborah J. Young (Editors). The University of Arizona Cooperative Extension, AZ1272.

Drawing citation: USDA-NRCS PLANTS Database / Hitchcock, A.S. (rev. A. Chase). 1950. *Manual of the grasses of the United States*. USDA Miscellaneous Publication No. 200. Washington, DC.

Inside this Issue

- ▶ Featured PlantCover
- ▶ Nitrate Toxicity in Cattle pg 2
- ▶ Upcoming Events pg 2
- ▶ Short-term Drought Status Report February 2017 pg 3-4
- ▶ Tips to Reduce Risks from Poisonous Plants..... pg 5

You can find this as well as past newsletters in full color with live links at our website:
<http://uacals.org/3xp>

Agent Contact Information



Kim McReynolds
Area Extension Agent
Natural Resources
 Cochise, Graham & Greenlee
 Counties
 520-766-3602
kimm@cals.arizona.edu

Ashley Wright
Assistant Area Agent, Livestock
 Cochise, Graham, Greenlee, Pima
 & Santa Cruz Counties
 520-766-3605
awright134@email.arizona.edu

U of A Cooperative Extension
 450 S Haskell Ave Ste A
 Willcox, AZ 85643

Nitrate Toxicity in Cattle



Nitrate toxicity frequently affects grazing cattle in Arizona. Nitrates are compounds (NO_3) found in

certain plants. When present in high quantities and consumed by cattle, the rumen converts nitrate to nitrite (NO_2). The nitrites are absorbed into the bloodstream where they bind hemoglobin, the compound in blood that binds and carries oxygen. The bound nitrite and hemoglobin form the compound methemoglobin that is unable to bind oxygen. As a result, cattle are unable to get adequate oxygen to their tissues or organs and essentially suffocate.

Nitrates can be high in plants common in Arizona such as Johnsongrass, Pigweed, Jimsonweed, and Russian Thistle. Sudan grass, corn stalks, and cereal grains also have potential to be high in nitrate. Much of the time, these plants may not have high enough levels of nitrates to present a problem, but excessive rain, drought, or frost can cause nitrate to rise to toxic levels. Some water sources can also become high in nitrates.

Poisoning from nitrate can happen very quickly, often cattle are simply found dead. Common signs include excessive salivation, urination, and difficulty breathing. Methemoglobin turns the blood from a normal red to a dark muddy or chocolate brown. This coloration can be seen in the mucous membranes of the animal or in blood samples. As the poisoning progresses, cattle become

weak. Moving cattle around may exacerbate symptoms or death: movement of muscle requires oxygen. Pregnant cattle may abort even at low, non-lethal doses of nitrate.

Toxicity can be diagnosed through observation of symptoms, as well as testing fluid from the eye of a deceased animal. Plants or feed suspected of being high in nitrate can be tested, as can water sources. Intravenous methylene blue can be used to treat cattle, but only if they are caught very quickly after poisoning. The best course of action is to be alert for plants that have the potential to cause nitrate poisoning. In a range situation, cattle may not consume these plants unless other forages are not available. Be alert to range conditions and move cattle when necessary to prevent overgrazing. Sudan hay, sorghums, cereal grains, and cornstalks should always be tested for nitrate levels before being fed to cattle, especially if they have been stressed by drought, frost, or have been highly fertilized. Nitrate poisoning should be differentiated from grass tetany and prussic acid poisoning.

Sources and further reading:

Nitrate Poisoning of Livestock, Christopher D. Allison, New Mexico State University
<http://aces.nmsu.edu/pubs/b/B807/>

Nitrate Poisoning and Feeding Nitrate Feeds to Livestock, Barry Yaremco, Alberta Agriculture and Forestry
[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex851](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex851)



March 14, 2017 – Range Livestock Nutrition Workshop, March 14 – Safford General Services Building (Contact Ashley Wright to register awright134@email.arizona.edu or call 520-384-3594

April – Soil and Ecological Tours - Flyers will be sent out in late March

May 16, 2017 – Graham County Rancher Roundtable, Location TBD



Short-term Drought Status Report

February 2017

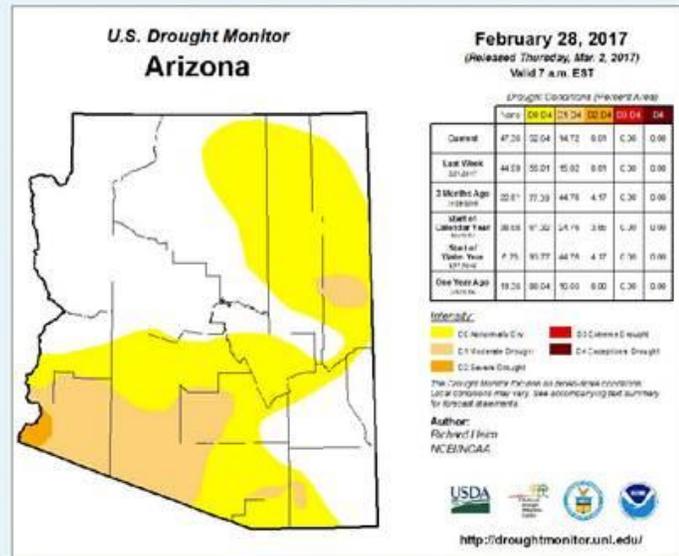
February was a relatively dry month across parts of the state bringing less than 50% of normal precipitation over the eastern third of Arizona and a few spots in north-west Arizona.

Much wetter than normal conditions were observed from southwest through central Arizona including Yuma, La Paz, Maricopa, Yavapai, and Coconino counties. This led to an improvement from Abnormally Dry (D0) to No Drought conditions in northern La Paz County.

January's rain and snow led to a significant improvement in Arizona short-term drought conditions, but the warm temperatures and locally dry conditions through much of February have stalled that recovery. This month, a small area of moderate drought (D1) was brought back to southern Apache County where snowpack has lagged the rest of the state.

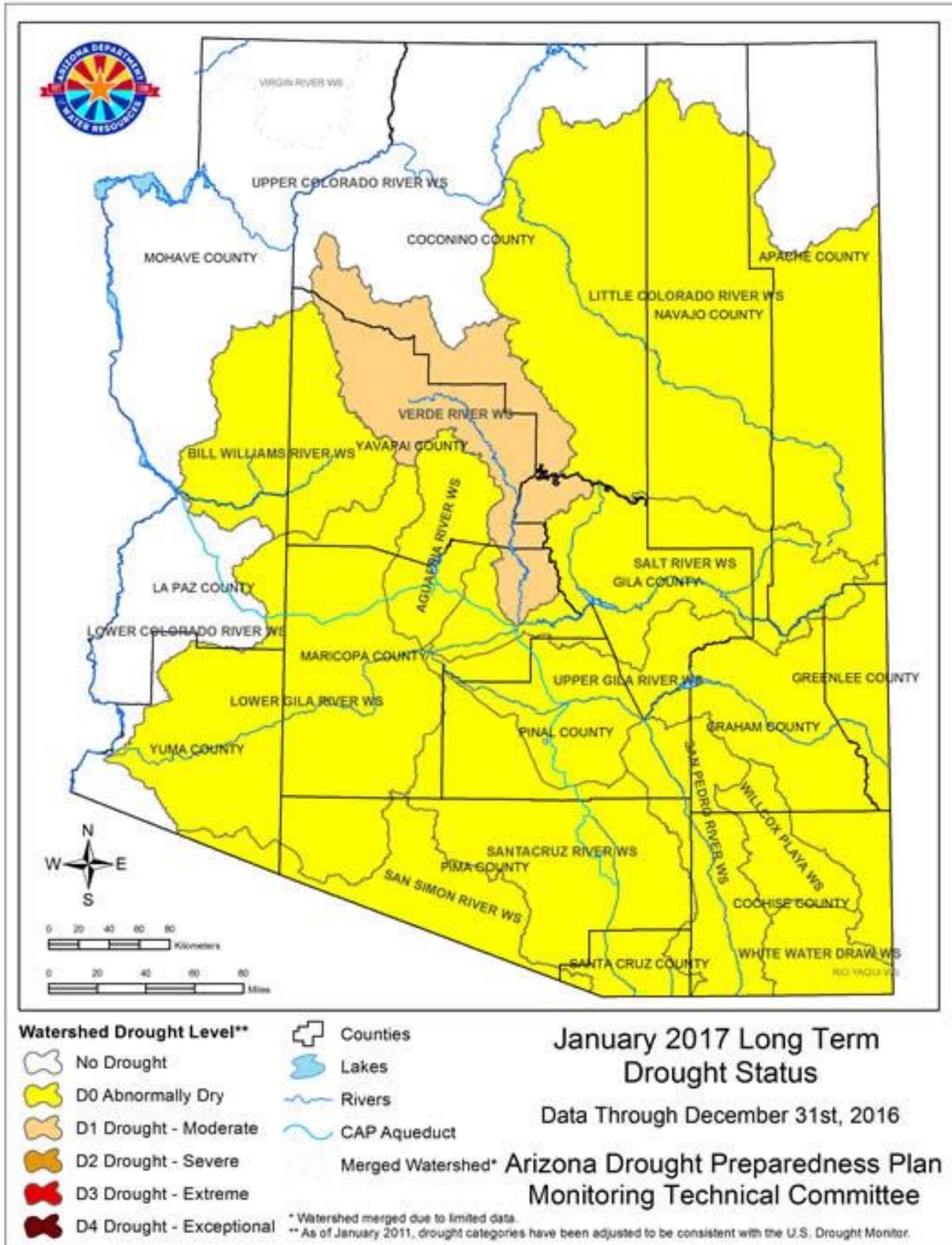
Though the precipitation at the end of February was welcomed, the forecasted warming trend at the beginning of March may quickly melt the snow and dry out the soil.

Summary produced by the State Drought Monitoring Technical Committee — March 2, 2017



Long-term Drought Status Update: October - December 2016

The La Niña conditions of cooler than normal sea surface temperatures in the Central Pacific Ocean did not develop this winter, and a return to the normal jet stream pattern was observed. So far, this winter's snowpack is above normal and the typical Arizona winter storms have returned. If that pattern continues through April, some of the long-term deficits of the past five years may be reduced, leading to improvements in drought conditions across Arizona. However, early February will be dry and warm, similar to the dry and warm conditions of January last year. If this continues through the rest of the winter, most of the state may remain abnormally dry or in moderate drought conditions.



Source: Arizona Department of Water Resources Drought Program,
<http://www.azwater.gov/AzDWR/StatewidePlanning/drought/DroughtStatus2.htm>

Tips to Reduce Risks from Poisonous Plants

With adequate soil moisture from this winter in southeastern Arizona, poisonous plants are likely on the minds of many in anticipation of spring growth of shrubs and forbs. Lower elevations are already green with growth of annuals. At a livestock losses workshop some years ago, Dr. Phil Ogden (retired UA professor and Extension Specialist) gave participants advice based on his many years of experience working on rangelands in Arizona. He pointed out that since all ranches are different (the land, plants, how they are managed, etc.), each person needs to know specifics for their own ranch. Dr. Ogden outlined several steps to take in assessing possible poisonous plant problems.

Step 1 – Write down a list of species that occur on your ranch that could be poisonous.

Step 2 – Go back to your records and get as much history as you can of death loss and low production on the ranch (again, put it down in writing). Confirm known poisoning deaths versus assumed poisoning.

Step 3 – Look through information in books (or now on the Internet) to learn about the plants you have listed and symptoms described for animals that have been poisoned.

Step 4 – Have an idea of the relative palatability of the plants listed, their season of growth, stage of growth when they are the most poisonous, and information on the toxic dose. As an example: snakeweed's palatability is poor, it is most poisonous during early growth (spring) and the lethal dose is 10% of body weight taken over one to two weeks.

Step 5 – Identify trends in vegetation and relate them to poisonous plants (use your rangeland monitoring data).

Step 6 – If you would like to take it one step further, some diet analysis can be done using fecal samples.

Taking these steps can be helpful in assessing livestock poisoning risks and rangeland management options to avoid those risks.

Resource Books:

- *Poisonous Plants of Southeastern Arizona*, Coronado RC&D, call 520-766-3607 or contact your local NRCD.
- *A Guide to Plant Poisoning of Animals in North America*, Anthony P. Knight and Richard G. Walter. 2001. Teton NewMedia.



Larkspur

Drawing citation: USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *An illustrated flora of the northern United States, Canada and the British Possessions*. 3 vols. Charles Scribner's Sons, New York. Vol. 2: 95.

Cooperative Extension, Cochise County
College of Agriculture & Life Sciences
The University of Arizona
450 S. Haskell Avenue, Ste A
Willcox, AZ 85643-2790

