THE UNIVERSITY OF ARIZONA
COLLEGE OF AGRICULTURE AND LIFE SCIENCES
COOPERATIVE EXTENSION

Happy New Year to you all!

I would like to thank all of you for the work you are putting into natural resources, your ranch, your animals and the stewardship we all have come to expect from our wide range of land users. The Arizona Section Society for Range Management has a long history of interacting with and providing a platform for people managing resources within the beautiful state of Arizona. We had a busy 2017 and look forward to another busy year for 2018! Below I have highlighted some of the fantastic forums AZ SRM put on for all interested.

Inside this Issue

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

Let me highlight some of the going on's over the past year…We had a spring range tour on Hualapai (30-40 people), a fall range tour on White Mountain Apache (25-35 people), a summer meeting back on Hualapai (55-65 people), a winter meeting on San Carlos Apache (70-80 people). A lot of effort was put into all of these meetings, but I would especially like to thank the Hualapai Tribe, White Mountain Apache Tribe and San Carlos Apache Tribe for allowing us to host such events on beautiful lands rarely seen. Additionally, I would like to point out that ranchers from Navajo have received Range Managers of the Year two out of the past three years and that the Hopi Tribe and Hualapai Tribe received Technical Service Providers of the Year for the past two years! As you can see, there has been a lot to highlight and still more yet to come. The ability to see new country and how it is being managed was an eye opener for me.

To me, the Arizona Section is about experiencing and learning new ways from people of all backgrounds, seeing old friends/colleagues and most importantly, always having an open mind to solve difficult issues facing us as a section or society. My hope is that we move into a direction where it's not about Private, NRCS, BLM, Forest Service, Tribal, State Lands, State Forestry, etc.…topics, rather it is about Arizona and the need to address our issues and highlight our successes collectively. We clearly have met and exceeded those expectations!

Thank you,

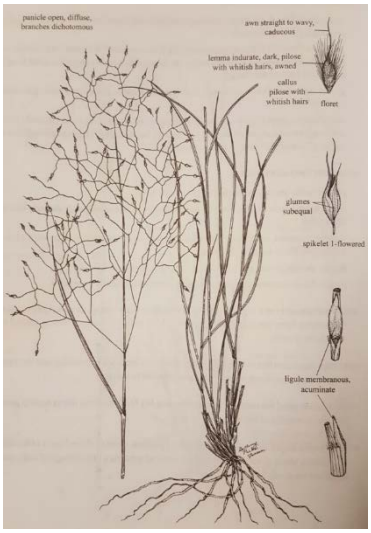
Iric Burden
President
Society for Range Management Arizona Section

Please look out for upcoming future events at our website:
http://azrangelands.org/
Facebook: https://www.facebook.com/Arizona-Section-of-Society-for-Range-Management-459665244128190/

Featured Plant

Indian ricegrass
Achnatherum hymenoides

Ariana Gloria
UA Coop. Ext. Research Specialist, Mohave County



Characteristics
Growth Habit: Indian ricegrass is a cool season, upright perennial bunchgrass that stands anywhere from 1 to 3 feet tall. This plant is cespitose, meaning it has several to many stems in bunch. As a cool season bunchgrass, this plant starts growing in early spring and flowers in late spring. It reproduces from seeds and tillers.

Leaves and Stems: The stiff, glabrous (smooth without hairs), slender and widely spreading stems of Indian ricegrass commonly extend outward. The leaves are involute (rolled inward from the edges), thread-like, and can be between 2 to 15 inches long and less than 1/10 of an inch wide. The bottom surfaces of the leaves are smooth or roughened with stout projections, while the top surfaces are usually covered in soft hairs.

Inflorescence: The inflorescence of Indian ricegrass consists of a main axis with branched branches (a panicle). The slender, flexuous (bent alternately in opposite directions), delicate and open panicle of this grass can be anywhere between 2 ½ to 10 inches long. The spikelets of this grass are one-flowered, turning brown to black at maturity and usually clothed with white hairs.

Occurrence
Indian ricegrass is native to the western United States and occurs in all Counties of Arizona. This cool season grass inhabits open, sandy plains, foothills, mesas, prairies, juniper woodlands and is well-adapted to dry places. It grows at elevations of 3,500 to 6,500 feet.

Forage Value
Indian ricegrass is rated as very good forage and highly palatable for cattle, sheep, horses, and wildlife throughout most of the year, except during late spring when the seed heads are developing. It is especially valuable in winter because of how well the plants cure and the fact that the lower parts of the plant remain rather green throughout winter-time. The seeds of this bunchgrass are high in protein

Restoration Value
Indian ricegrass is often a pioneer species on disturbed sites. It does not compete very well with aggressive introduced grasses during the period of establishment, but it is well-suited to compete with less aggressive native grasses. This bunchgrass is very drought and cold tolerant, often requiring only 6 inches of annual precipitation to survive. Due to its fibrous root system (making it highly desirable for erosion control), Indian ricegrass is often used in restoration projects, such as for revegetation after mining, brush control, overgrazing and fire, though it does tend to have a low germination rate.

Grazing Management
Due to the slow establishment of Indian ricegrass it is important that if seeded, the new seeded areas not be grazed before the late summer or fall of the second growing season. Light grazing should not commence on a new stand of Indian ricegrass until there is some seed production. Once established, this palatable bunchgrass does benefit from moderate grazing during winter and early spring, but it is imperative to remove livestock while there is still time in the growing season for more moisture in order to allow for recovery, additional growth and seed production. Under heavy spring grazing, stands of Indian ricegrass will deteriorate. A grazing plan with rest or deferment every 2 to 3 years is recommended to maintain healthy stands of Indian ricegrass.

Images and Text References:

"Achnatherum hymenoides-Indian ricegrass." Yavapai County Native & Naturalized Plants. University of Arizona Cooperative Extension, May 2017. Web. Jan. 2018.

Gauna, Forest J. “Plant of the Week.” Indian Ricegrass, USDA, www.fs.fed.us/wildflowers/plant-of-the-week/achnatherum_hymenoides.shtml.

“Indian ricegrass.” Indian ricegrass, Utah State University, www.usu.edu/weeds/plant_species/nativespecies/ricegrass.html.

Ogle, D., St. John, L., Jones, T. Ed. (rev. St. John, 2013). Plant Guide for Indian Ricegrass (Achnatherum hymenoides). USDA-Natural Resources Conservation Service, Aberdeen, Idaho 83210. Mar. 2013.

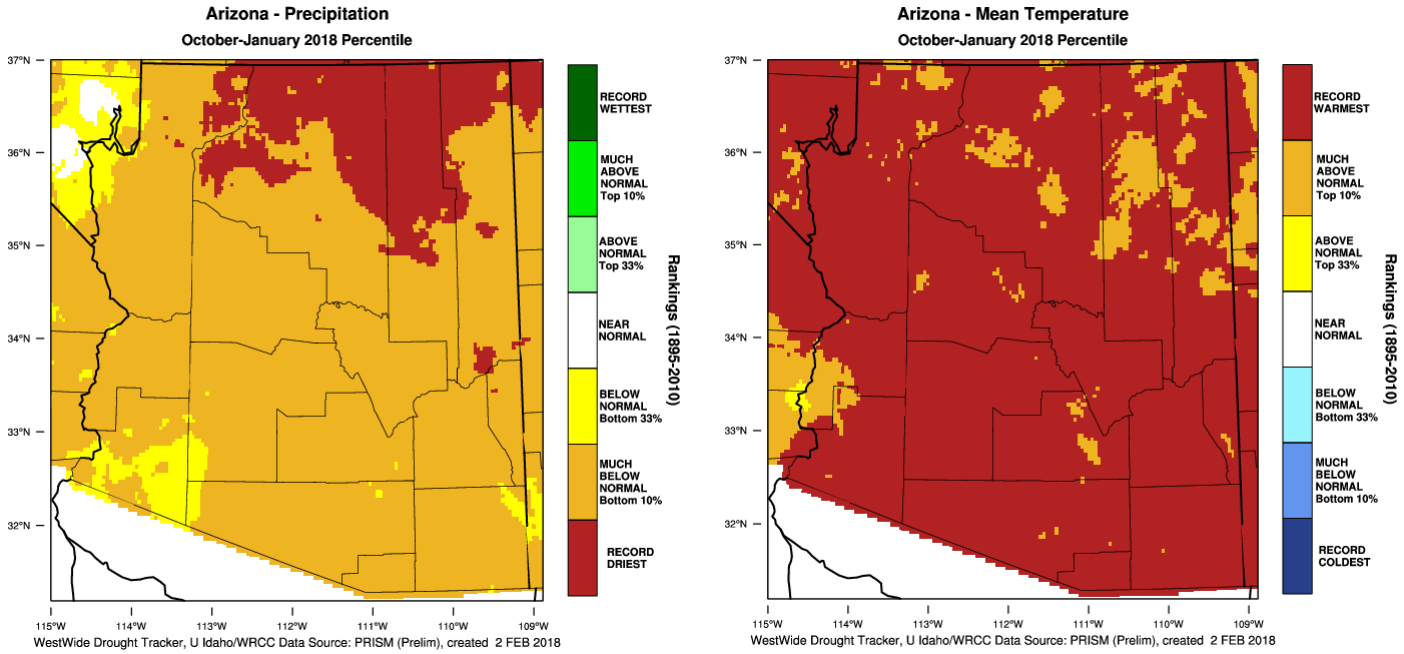
Perryman, Barry L., and Quentin D. Skinner. *A Field Guide to Nevada grasses*. Lander, WY: Indigenous Rangeland Management Press, 2007. Print.

Stubbendieck, James, Stephan L. Hatch, and Neal M. Bryan. *North American Wildland Plants: A Field Guide*. S.l.: Univ of Nebraska Press, 2011. Print.

Arizona Seasonal Climate Summary: Fall/Early Winter 2017-18

February 3, 2018 - Fall is typically a transition season where cooler and more unsettled weather gradually settles into the southwest U.S., but that wasn't the case this year. A ridge of high pressure across much of the western U.S., most likely related to the moderate La Niña event present across the equatorial Pacific, kept the storm track far to the north away from Arizona, leaving instead persistently warm and dry conditions over the past several months. This ridge pattern broke down a few times in November, December and January allowing the storm track to drop into the Southwest, but precipitation amounts with these events were underwhelming. Moisture was often limit with these events and precipitation amounts were light and highly localized. By the end of December, southern Arizona observed more November-December precipitation, inverting the typical early winter pattern with northern Arizona typically observing more precipitation during this period. Storm activity ticked up a bit for the region in January with several cold, fast moving storms tracking across Arizona and New Mexico bringing more widespread precipitation and finally some snow to upper elevation locations. January precipitation amounts were still below-average for the month across most of Arizona.

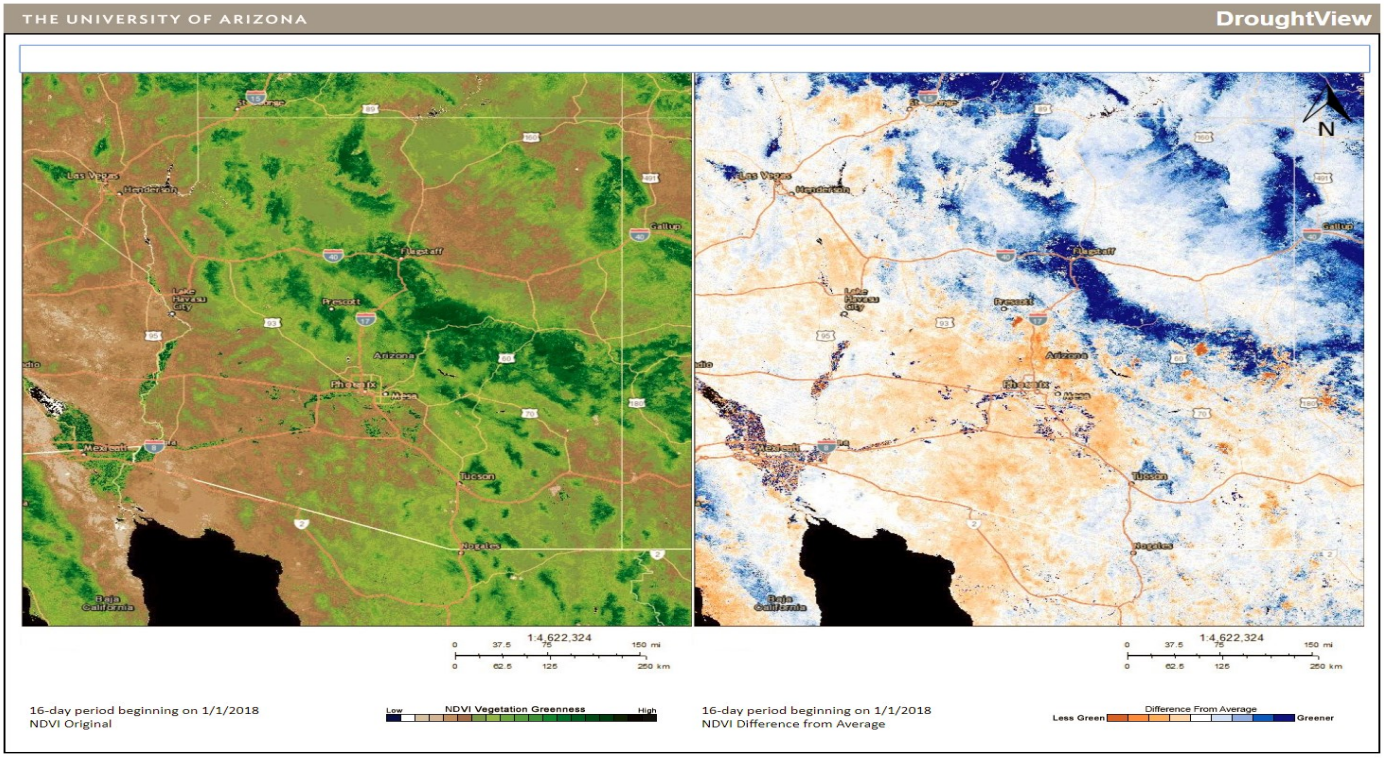
The exceptionally warm and dry conditions over the past several months coupled with the early end to the monsoon season have led to rapid intensification and spread of short-term drought conditions across Arizona. The February 1st update of the U.S. Drought Monitor shows all of Arizona observing at least moderate levels of drought and almost 65% at the severe level or worse.



October-January precipitation and temperature rankings from the WestWide Drought Tracker

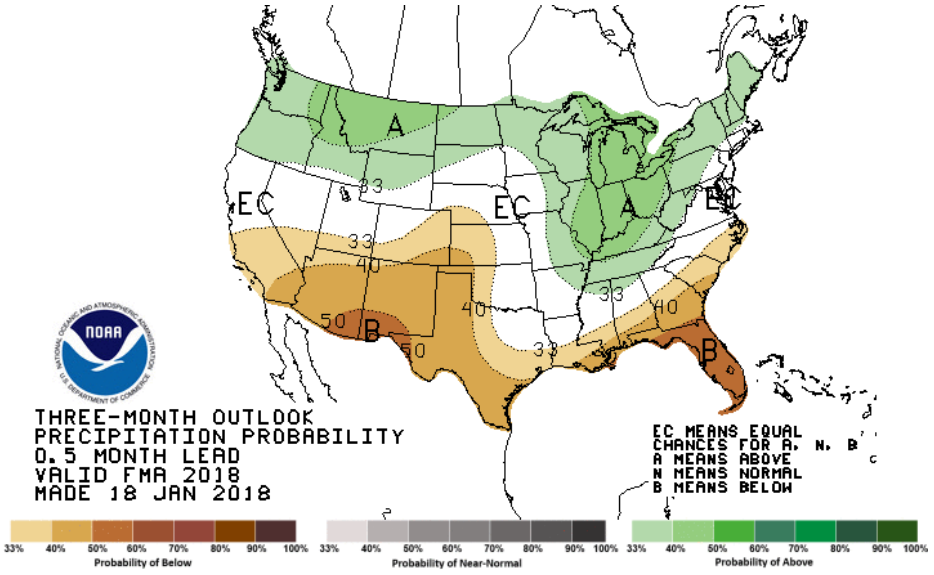
(http://www.wrcc.dri.edu/wwdt/)

More information available at :
http://cals.arizona.edu/climate
http://www.climas.arizona.edu
Questions /comments? Contact Mike Crimmins, crimmins@email.arizona.edu



The 16-day composite Normalized Difference Vegetation Index (NDVI) for early January (Jan 1-Jan 16th) shows unusually green conditions across higher elevations of Arizona and below-average greenness across lower elevation areas of central and south-western parts of the state (shown in right panel above). This imagery collected by the NASA Moderate Resolution Imaging Spectroradiometer (MODIS) depicts vegetation condition in terms of 'greenness' with higher levels indicating more photosynthetically active vegetation. The difference from average imagery (right panel) is the difference from the 2001-2012 average for this time period in early January. The very dry and warm conditions this fall and early winter have led to very little snowpack at higher elevations across Arizona which shows up as much greener than average conditions for early January. Lower elevations are observing drought-induced vegetation stress indicated by below-average greenness Access these maps directly at https://droughtview.arizona.edu/?shareId=049a2cc819e611ac964fa7c4a8bfcad65d24c51a

The February-March-April seasonal precipitation outlook issued by the NOAA Climate Prediction Center in mid-October depicts an increased chance of below-average seasonal total precipitation for all of Arizona with the largest shift in odds towards dry conditions across southeast Arizona. This forecast for below-average total precipitation for the next three months is due to the expected continuation of La Niña conditions in the equatorial Pacific Ocean, though weakening rapidly over this period. The dry weather pattern that has been plaguing the Southwest over the past several months appears to have been driven in part by La Niña and it is expected to continue to impact the region over the next several months. La Niña events typically shift the average winter storm track away from the Southwest towards the Northwest, producing above-average precipitation in that area. Even though the event is expected to weaken and end by spring, the impact on storm track can linger through the late winter/early spring months. Temperature outlooks continue to indicate an increased chance of above-average seasonal temperatures over this period as well. www.cpc.ncep.noaa.gov/products/predictions/long_range/)



Anatomy of a Grass Plant

Kim McReynolds
UA Coop. Ext. Area Agent Natural Resources, Southeastern Arizona

Grasses are flowering plants that belong to the plant family Poaceae. Grasses are one of the most important types of plants in the world with well over 6,000 species. Included are many that are familiar, but which many people may not think of as grasses: bamboo, sorghum, oats, rye, sugarcane and barley.

The world's most important food crops (rice, wheat, and com) are grasses. Grasses have many other uses as well, including soil conservation, landscaping, animal forage and shelter.

Distributed widely around the world, grasses are found in a variety of habitats, from hot deserts to arctic regions. While some grass plants are dependent on a narrow range of conditions for survival and reproduction, others can live in diverse community types.

Like all plants, the grass plant is composed of vegetative and reproductive parts. The vegetative portion consists of the roots, stems and leaves (Fig. 1). The reproductive or flowering portion is called the seedhead or inflorescence.

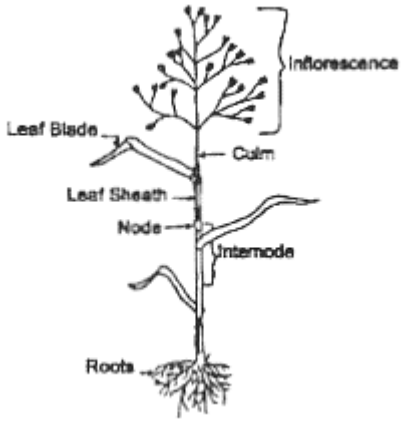


Figure 1. Grass Plant Parts

Grasses have fibrous root systems. Typically, about half the weight of a perennial grass plant is found in the roots. While the major portion of grass roots are typically found in the top 12 inches of soil, some grass roots may grow to depths of 4 feet or more.

Grass stems of are comprised of nodes (joints) and internodes (length of stem between nodes). At each node there is a bud that may produce a leaf or may remain dormant. Stems are usually hollow except at the nodes, but sometimes have pithy (fleshy) centers.

Grasses can be divided into groups according to their growth habit (Fig. 2). Grasses that form an individual tuft or clump derived of many small stems are called bunchgrasses. Grasses that have rhizomes or stolons (specialized stems) tend to cover the ground in a dense stand. They are called sod-forming grasses.

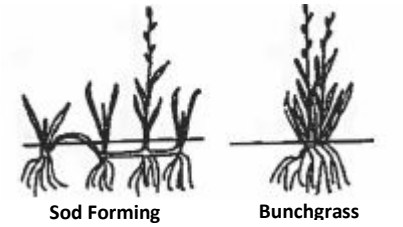


Figure 2. Growth Habits of Grass

The grass leaf has two main parts; the sheath and the blade. A grass sheath beginning growth at each node of the stem, surrounds the stem like a tube. The blade is the expanded portion of the leaf. Food manufactured by leaves in excess of current needs for growth is transferred to storage centers in lower stem bases and roots.

The grass leaf may also have three distinct structures-the collar, ligule and auricle (Fig. 3). These structures are highly variable in size and shape between the different grasses and may be present or absent. The collar is located on the backside of the leaf at the junction of the sheath and blade. It is usually pale green or yellowish green in color; occasionally it may be tinged with red. On the inside of the collar, next to the stem, is a small leaf-like projection known as the ligule. The ligule may be a delicate, membranous, tongue-like structure, or a tuft of hairs, or absent entirely. Some grasses have two finger-like projections, called auricles, on the outside of the collar which may be short or long, forming a clasp around the stem.

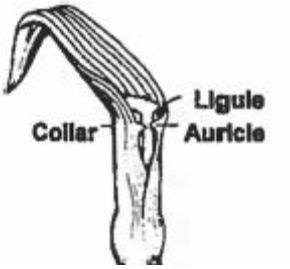


Figure 3. Grass Leaf Structures

Although most grasses do not have showy flowers as many familiar plants, they do have true flowers. The seed head or inflorescence is the flowering part of a grass and is almost always in the form of a flower cluster. The shape and position of the seedhead may help determine the species of grass.

The inflorescence is made up of many smaller units known as spikelets (Fig. 4). At the base of each spikelet are two leaf-like bracts called glumes. A single grass flower is called a floret. Where there is more than one floret per spikelet, each floret is attached to a short stem called the rachilla. Most florets, when mature, produce a seed. The seed is enclosed by two leaf-like bracts called the lemma and the palea. In some grasses, such as western wheatgrass, the lemma and the palea remain with the seed after it matures and falls. In other grasses, such as sand dropseed, the seed falls free from the lemma and the palea.

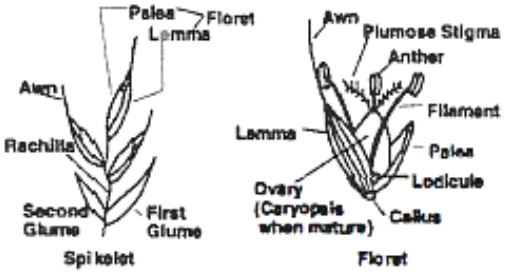


Figure 4. Parts of a Spikelet and Floret

There are three major types of inflorescence in grasses. The spike inflorescence is one in which spikelets are directly attached to the "stem" (Fig. 5). Spikelets can be arranged one· or two-sided. The raceme differs from the spike in that the spikelets are pediceled (or held on a short stem) that is attached to the main flowering branch. Panicle inflorescences have spikelets that are pediceled in a branched formation. Panicle inflorescences are the most common, while racemes are rare in grasses.

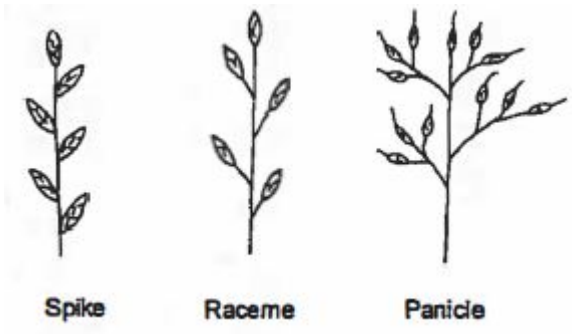


Figure 5. Grass Inflorescence Types

Upcoming Events

March

6 **Livestock Nutrition Workshop** – Holbrook, $25/person dlreed@email.arizona.edu for more information.
7 **Livestock Nutrition Workshop** – Prescott, $25/person dlreed@email.arizona.edu for more information.
8 **Livestock Nutrition Workshop** – Sierra Vista, $25/person dlreed@email.arizona.edu for more information.

April

3 **AZ/UT Range & Livestock Workshop & Tour** – Orderville, UT, brischke@cals.arizona.edu for more information.
4 **AZ/UT Range & Livestock Workshop & Tour** – Hurricane, UT, brischke@cals.arizona.edu for more information.
5 **AZ/UT Range & Livestock Workshop & Tour** – Virgin, UT, brischke@cals.arizona.edu for more information.

University of Arizona - Range and Livestock Contacts:

Specialists:

Mike Crimmins – Associate Specialist & Associate Professor, Climate Science: crimmins@email.arizona.edu
Dan Faulkner – Beef Specialist: dfaulkner@email.arizona.edu
Larry Howery – Noxious Weeds/Range Management Specialist & Professor: lhowery@cals.arizona.edu
George Ruyle – Range Management Specialist & Professor: gruyle@cals.arizona.edu

Agents:

Andrew Brischke – Area Assistant Agent, Agriculture & Natural Resources
Mohave & Coconino Counties: brischke@cals.arizona.edu
Ashley Hall – Area Assistant Agent, Agriculture & Natural Resources – Gila & Pinal Counties: AshleyS3@email.arizona.edu
Kim McReynolds – Greenlee County Extension Director & Area Agent, Natural Resources
Cochise, Graham & Greenlee & Counties: kimm@cals.arizona.edu
Ashley Wright – Area Assistant Agent, Livestock
Cochise, Greenlee, Graham, Pima & Santa Cruz Counties: awright134@email.arizona.edu