



Featured Plant: Western Wheatgrass (Bluestem)

Pascopyrum smithii Rydb

Allison Head

Characteristics

Western Wheatgrass is a cool season, perennial bunchgrass. This grass grows tall and erect, reaching between 1 and 2 ½ feet. Its leaf blades are between 4 and 12 inches long, tapering to a slender point. The blades are deeply veined, and feel rough on the surface. They may be flat or slightly curled in along the margins. The seedheads are dense with overlapping spikelets (1 or 2 per node). Reproduction may occur from seed dispersal, but primarily occurs through rhizomes. These rhizomes can sometimes become matted and give the grass a sod-like appearance. When growing, Western Wheatgrass has a distinct blue-green color.

Occurrence

Western Wheatgrass is found in many counties throughout Arizona. It typically grows in prairies and meadows within interior chaparrals, semi-desert grasslands, pinyon juniper woodlands, and montane conifer forests between 3,000 and 8,000 feet in elevation. While Western Wheatgrass is adapted to many different soil conditions, it grows best in finer soils with plenty of moisture. This grass begins growing in early spring and goes dormant during the dry period of summer. Growth may begin again in fall if there is enough moisture in the soil following the summer rains.

Forage Value

Western Wheatgrass is highly palatable for all classes of livestock. When cut during the late-bloom to early-dough stage, this grass makes very good hay, and may be a good option for winter forage; the protein content is high, and cattle and horses will eat the hay readily.

Grazing Management

Western Wheatgrass should be grazed lightly during its growing season in the spring to allow the plants to mature and reproduce, resulting in more forage for future grazing activity. Rotational grazing systems are recommended, leaving 40 to 50 percent of the annual growth (3 to 4" stubble) un-grazed. Overgrazing may result in plant death and stand reduction. The consequences of overgrazing may be offset by reseeding adjacent run-down areas along with Crested Wheatgrass. However, new stands are slow to establish and poor germination may result in a failed attempt. To promote successful germination, reseeding should be done with a drill depth of ¾ to ½ inch or less on medium to fine textured soils. Mulching and light irrigation may help stand re-establishment.

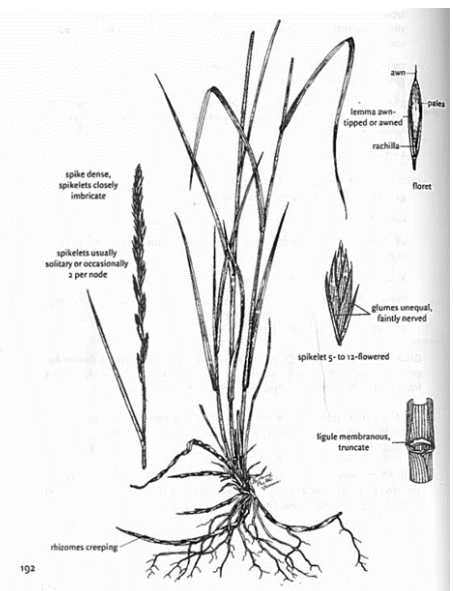
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You can find this as well as past newsletters in full color with live links at our website:
<http://uacals.org/3xp>



Arizona Cattle Growers' Association Update

Heidi Crnkovic

The Arizona Cattle Growers' Association (ACGA) was established by cattlemen who thought they needed an organization that would become the voice for Arizona ranchers. They have relied on membership dues to carry ACGA's voice throughout Arizona, to neighboring states and even to Washington, D.C. The first gathering of ACGA was held in the Elks Club Building in Tucson on October 12, 1903. At this meeting with a standing vote, the membership endorsed the Livestock Sanitary Board, the brand registration law, the brand registration book, and the livestock inspectors. They also applauded the Rangers and the Governor. A band of independent-minded cattlemen had agreed it was necessary to have a Territory-wide association to carry on the work of "properly" representing the cattle industry of Arizona. It was historic.

In early January of 1904, ACGA met again to formally organize. This time in Phoenix in the legislative council chamber of the state Capitol Building. Three cattlemen were chosen from each county to make up the executive committee. Initiation fee was five dollars, with an annual fee of one dollar. The decision to form an executive committee, made up of the most influential men of each county, as historian Dennis McCargar observed, would set in motion the most powerful body of the Association. It would become the board of directors – a body that even today makes the major decisions (Keepers of the Range - The Story of the Arizona Cattle Growers' Association). Today, that same purpose still drives individual ranch owners, ranch managers, cowboys and rural residents to be a part of this long-standing organization. ACGA's business is raising quality products from the land, but the association's

core goal is to protect the rights and freedoms that are in place so that producers can continue their work no matter how many cows owned.

This Arizona Cattle Growers' Association has been instrumental in protecting the rights of ranch families to live and work on the land since its formation, while also providing opportunities to network and learn new innovative ways of doing business. ACGA strives to keep members up-to-date on the latest technologies and issues in the beef industry on a local and national level. The association has worked diligently to roll back regulations from land management agencies while protecting private property rights. ACGA has worked for years to ensure fair property tax at a true agricultural rate and has helped fight against overzealous tax assessors. Meanwhile, the association has fought vigorously to defend the industry and ranch practices against endless attacks from animal rights activists and has killed several legislative bills that have threatened normal ranching practices while also successfully defending water rights for the benefit of ranching operations for over 40 years. ACGA has been finding solutions to problems by creating a wolf compensation fund, running legislation to fully fund the state veterinarian's office, working to get additional funding for critical university functions and more. The list of issues facing the ranching community are truly endless, but the tireless efforts of staff and committed members have ensured and will continue to safeguard the rights of ranchers to work on and utilize their land so that they can continue raising Arizona beef.

Arizona Section Society for Range Management Update

Andrew Brischke

AZSRM Vice President

Summer was a busy time for the AZSRM Section. This year's theme of "The Year of Native Range" has been very productive and as a Society we were afforded the opportunity to witness some excellent range management. The Annual Summer Meeting took us to the Hualapai Indian Reservation and I can say without hesitation they were wonderful hosts, and the facilities were fantastic. Hat's off to them. We toured a couple different sites and discussed a variety of rangeland management issues. Personally, I was quite surprised about how successful and progressive many of their conservation efforts proved to be. We capped off

the meeting with an almost exclusive view of National Canyon, a finger of The Grand Canyon, it was magnificent.

The Fall Tour just weeks later took the section to the White Mountain Apache Tribal lands. This was another successful tour where rangeland conservation issues were witnessed and discussed. The AZSRM sponsored Natural Resources Conservation Workshop for Arizona Youth (NRCWAY) and is another successful example of how the section provides education to our future stewards of our land. 33 students learned about botany, soils, geology, archaeology, and a host of other basic "ologies" in the natural resource arena.

Each group presented a poster about their ecosystem and the different natural resources that influenced their plot. They did a great job!

Looking to the future, and continuing with our theme “The Year of Native Range,” our Winter Meeting will take us to the San Carlos Reservation and the Apache Gold Casino Resort, January 3-5th. The National SRM Meeting will be in

Sparks, NV, January 29th-February 2nd. I’m particularly looking forward to seeing presentations at the National Meeting from our two High School Youth Forum Delegates, chosen from NRCWAY. We encourage you to become a SRM member and learn about how our fellow rangeland managers and stewards are tackling some of the resource issues we all face.

Potential Mineral Deficiencies on Arizona Rangelands

Part 2: The Macrominerals Calcium and Phosphorus

Ashley Wright

Livestock Area Agent, Southeastern Arizona

The two most abundant minerals in the body are calcium (Ca), and phosphorous (P). Almost all calcium (99%) is found in the skeleton of the animal with the remaining 1% used for nerve conduction, muscle contraction, and blood clotting. About 80% of phosphorous is found in the bones and teeth, the rest is required by ruminal microbes or involved in energy utilization, acid-base balance, and osmotic pressure. Because calcium and phosphorous both have significant roles in bone metabolism, the two are usually regarded together. Ideally, the Ca:P ratio should be about 1.75:1, but anything from 1:1 to 4:1 is acceptable. Research done by Jim Sprinkle and the University of Arizona has suggested that 15% calcium and 6% phosphorous may be an appropriate amount for most Arizona rangeland mineral supplementation mixes (based on 3oz per day consumption).

Arizona forages and browse species are typically adequate in Calcium, however deficiencies may be of concern during pregnancy when the fetus is forming a skeleton, and during lactation when the cow’s requirements for calcium increase dramatically. Cattle that are deficient in calcium will begin to take it from skeletal bone reserves, long term this can cause weak bones that are prone to breakage. Short term, milk fever is caused by an excess mobilization of calcium from the bones during early lactation when calcium needs drastically increase. Both calcium and phosphorus requirements vary depending on the cow’s stage of production (growing, pregnant, or lactation) as well as age (growing or mature). Recent testing of Arizona forages in the southeast region have returned calcium levels ranging from 0.18 to 0.32 (% dry matter) in forages and 0.73 to 1.00

in browse species. Cattle requirements established by the National Research Council (NRC) indicate levels of 0.18% are needed for dry, gestating cattle, and up to 0.58% for lactating animals.

Phosphorous is deficient in most Arizona forages for 8-10 months out of the year. This water-soluble mineral is easily leached out of mature forages. Phosphorous deficiency causes reduced growth and feed efficiency, decreased appetite (ruminal microbes need phosphorous for growth and activity), reduced reproduction, decreased milk, and weak or fragile bones. Protein supplements (especially cottonseed or soybean meal) have moderate amounts of phosphorous, while by-product feeds such as distiller’s grains have significant amounts. Deficiencies in phosphorous have been linked to “Pica”, where the animals seek out and chew or consume non-food items such as wood fence posts and bones. The levels established by NRC for phosphorous range from 0.16 to 0.26%, and testing of southeastern Arizona forages have revealed significant and variable deficiencies ranging from 0.03 to 0.14 in forages to 0.14 to 0.23 (% dry matter) in browse species. These samples were tested in February, May, and September with most samples indicating significant phosphorous deficiencies, especially for growing or lactating animals.

Stay tuned for our late winter issue where we will discuss magnesium and its roll in grass tetany during the “spring green up”!

Macromineral Requirements in Beef Cattle				
Mineral*, %	Requirement			
	Growing and Finishing Cattle	Stressed Calves**	Dry, Gestating Cows	Lactating Cows
Calcium	0.31	0.6-0.8	0.18	0.58
Magnesium	0.10	0.2-0.3	0.12	0.20
Phosphorus	0.21	0.4-0.5	0.16	0.26
Potassium	0.60	1.2-1.4	0.60	0.70
Sodium	0.06-0.08	0.2-0.3	0.06-0.08	0.10
Sulfur	0.15	0.15	0.15	0.15

*Research data are inadequate to determine chlorine requirements.
 ** Suggested range.
 Source: NRC, 2000. Adapted from NRC Nutrient Requirements of Beef Cattle, 7th revised edition.

Pasture, Rangeland, Forage – Rainfall Index Insurance

Russell Tronstad

Department of Ag & Resource Economics

Risk Management Agency’s (RMA) Pasture, Rangeland, Forage (PRF) – Rainfall Index pilot insurance program was first made available to Arizona producers in 2016. PRF–Rainfall Index replaced the PRF–Vegetative Index program which was based on Normalized Difference Vegetative Index (NDVI) or plant greenness measures taken from satellite imagery and had limited adoption. The PRF–Rainfall Index program determines precipitation for an approximate 17 x 17 mile grid using a distance weighted four-point interpolation from official National Oceanic and Atmospheric Administration Climate Prediction Center (NOAA CPC) weather station data. At a minimum, you must insure for at least two, 2-month periods or index intervals where precipitation is important to your operation.

PRF insurance is designed to help protect your operation from the risks of forage losses that result in increased feed costs for you. You are not required to insure all acres that can be grazed and you cannot insure for more acres than you operate on. Index intervals, productivity factor, coverage level, and numbers of acres are all selected by you to determine premium costs and when indemnities may be triggered. Your productivity factor can range from 60 to 150 percent while coverage levels range from 70 to 90 percent. Your coverage level determines at what precipitation level an indemnity is triggered while your productivity factor helps determine the magnitude of an indemnity claim. To help assist with figuring out what costs and expected indemnities a rancher might expect, an

online decision support tool is available at <https://prodwebnlb.rma.usda.gov/apps/prf>.

Estimated historical rainfall records for each grid in Arizona are generally available back to 1948. Subsequently, rainfall records from 1948 to present are used to determine expected rainfall for the upcoming year for every two-month interval and grid. Rainfall index values are normalized across all years from 1948 to present so that the average for each index interval is 100 percent. Values less than 100 are years that have received less than average precipitation for these months since 1948 while values above 100 percent have received more than average.

Producers need documentation that they have the right to graze land that they want to insure. Producers do not need ranch level records on rainfall or even pasture and feed expenses as premiums and payouts are all calculated off official NOAA CPC weather and county base level grazing values. Total premiums are currently subsidized at the 51 percent for 90 percent coverage by USDA/RMA. Subsidy rates increase to 59 percent for 70 percent coverage levels. Table 1 below provides an example of what liability, total premiums, subsidies, and producer premiums are for two distinct grid locations of Sonoita, AZ and Kingman, AZ. Acres insured are spread out fairly evenly throughout the year for illustration. Table 1. Differences in PRF-Rainfall Index premiums illustrated for two AZ locations.

Panel a. SONOITA, AZ Grid ID of 13878 (productivity factor of 150% and coverage level of 90% for 2018)

Index Interval	Acres	Liability	Total Premium	Subsidy	Producer Premium
Jan. – Feb.	170	\$3,191	\$833	\$425	\$408
Mar. - April	160	\$3,003	\$1,047	\$534	\$513
May – June	170	\$3,191	\$1,263	\$644	\$619
July – Aug.	170	\$3,191	\$268	\$137	\$131
Sept. – Oct.	170	\$3,191	\$801	\$409	\$392
Nov. – Dec.	160	\$3,003	\$1,047	\$534	\$513
TOTALS	1,000	\$18,770	\$5,259	\$2,683	\$2,576

Panel b. KINGMAN, AZ Grid ID of 18064 (productivity factor of 150% and coverage level of 90% for 2018)

Index Interval	Acres	Liability	Total Premium	Subsidy	Producer Premium
Jan. – Feb.	170	\$3,191	\$996	\$508	\$488
Mar. - April	160	\$3,003	\$1,068	\$545	\$523
May – June	170	\$3,191	\$1,616	\$824	\$792
July – Aug.	170	\$3,191	\$858	\$438	\$420
Sept. – Oct.	170	\$3,191	\$1,044	\$532	\$512
Nov. – Dec.	160	\$3,003	\$1,047	\$534	\$513
TOTALS	1,000	\$18,770	\$6,629	\$3,381	\$3,248

Total premiums provide a measure of how variable or uncertain rainfall is for each two-month interval. The May to June period is the most uncertain for both areas while our typical monsoon season during July and August period is the most reliable precipitation period for both. However, the monsoon season is much more reliable for Sonoita than Kingman as the total premium for the July to August interval is only \$268 for Sonoita whereas it is \$858 for Kingman, a 3.2 fold increase.

While it may be tempting to just insure for index intervals that maximize total subsidies for the grid(s) of your operation, you should also consider matching precipitation to when the most critical feed resources are produced on your ranch. Shortfalls in precipitation for these periods will allow your indemnities to offset supplemental feed costs or costs associated with other drought mitigation strategies like early calf weaning.

In 2016, the first year that PRF-Rainfall Index was made available for Arizona producers, 43 of 55 policies received indemnities and the average policy size was 14,511 acres. Average payments were \$85,331 (\$5.88/acre) for the 43

policies receiving indemnity claims. Average producer premiums for all 55 policies was \$2.58/acre insured. For all PRF-Rainfall Index policies in 2016, Arizona producers received \$1.77 back for each dollar spent on producer premiums. Given that the subsidy rate is at least 51 percent and administrative costs are not included in the total premium calculations, producers should expect to receive around \$2 for each dollar spent on producer premiums over many years.

PRF-Rainfall Index is a reinsurance produce so that policies are purchased from private insurance companies and agents. A list of crop insurance agents is available on the RMA website at www.rma.usda.gov/tools/agent.html. The sales closing date to secure insurance for the 2018 calendar year is right around the corner, November 15. As with many other USDA programs, you will remain signed up for the same policy for subsequent years unless you decide to make contract changes before August 31 of the next policy year. The PRF factsheet available at <https://www.rma.usda.gov/pubs/rme/prfinsprog.pdf> is another useful resource for information on this program.

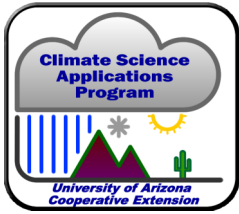
Important PRF Dates to Remember

Policy Year Runs from 1/1/2018 – 12/31/2018

August
31 Contract Change Date

September
1 Premium Billing Date

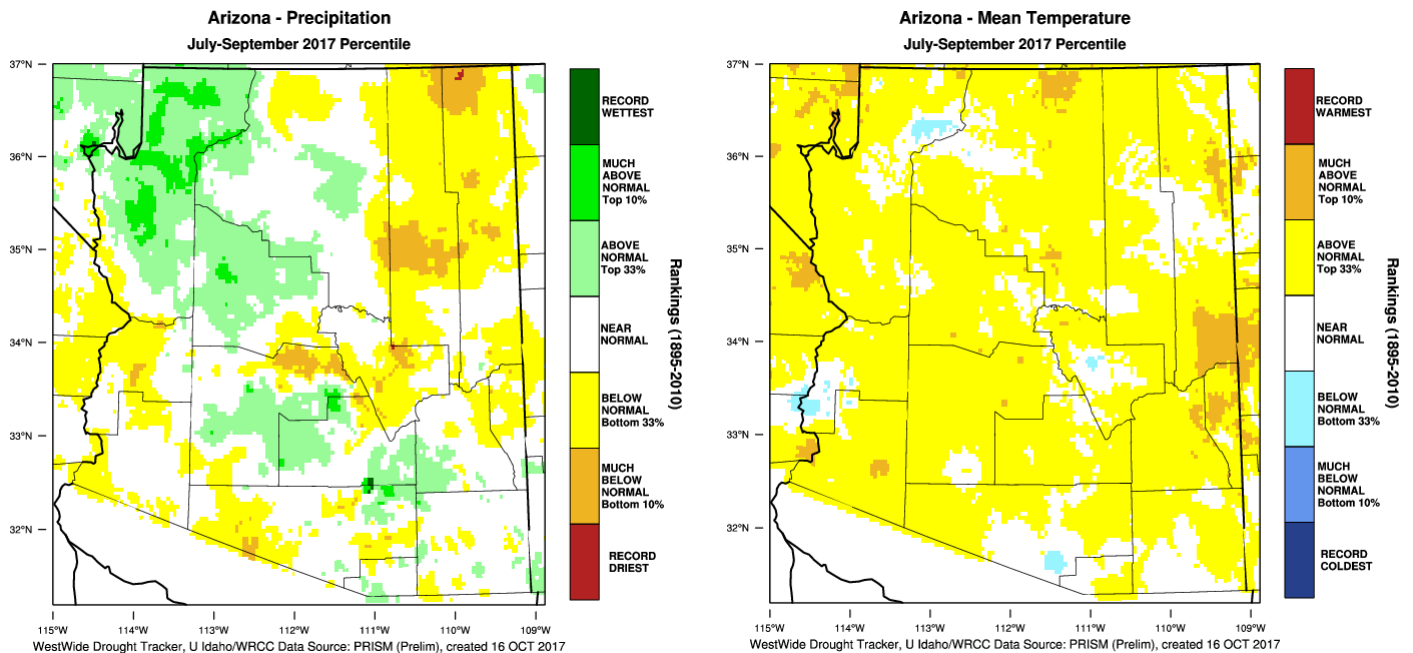
November
15 Sales Closing Date
15 Acreage Reporting Date
15 Cancellation and Termination Date



Arizona Seasonal Climate Summary: Summer 2017

October 23, 2017 - The heat of June gave way to a relatively slow start to the summer monsoon season in July across Arizona. Monsoon moisture slowly worked its way in to the state in early July, but it wasn't until July 10th before thunderstorm activity became more widespread across the region. Deep monsoon moisture settled in across Arizona for the remainder of July, providing ideal conditions for widespread thunderstorm outbreaks that soaked much of the state. Much of Arizona observed much above average precipitation totals for July with Tucson recording its wettest July since records began in the late 1800's. Far northeast and parts of far eastern Arizona did not observe quite as much thunderstorm activity and were near average for July precipitation.

The remainder of the monsoon season in August and September was largely a bust. Monsoon moisture ebbed and flowed across the Southwest, but upper level wind patterns shifted in early August suppressing widespread thunderstorm activity for much of the remainder of the season. A handful of decent precipitation events emerged in August, but much less than typically occurs during a typical monsoon season. Overall, the August-September period was exceptionally dry with parts of central Arizona observing their driest Aug-Sep period since 1895. Only far northwest Arizona observed near average precipitation over this period. Monsoon season precipitation maps for the full season are the average of a record wet July and a record dry August-September period washing out to near-average for much of the state. Temperatures were above-average again this summer season in step with long-term trends towards warmer conditions



July-September precipitation and temperature rankings from the WestWide Drought Tracker

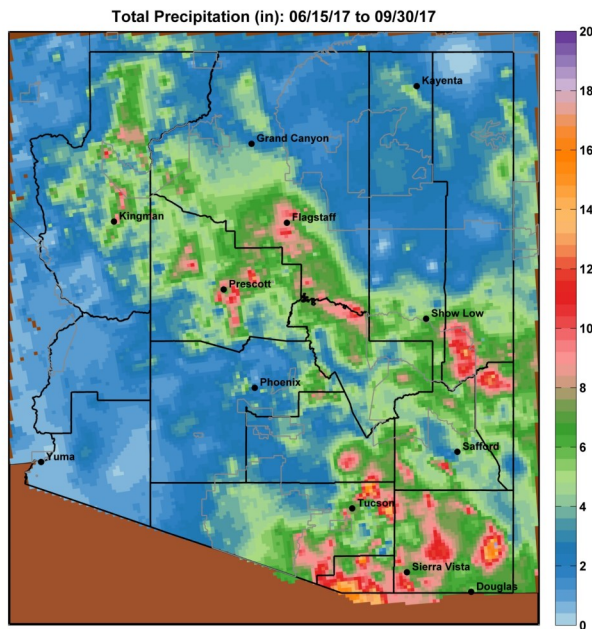
(<http://www.wrcc.dri.edu/wwdt/>)



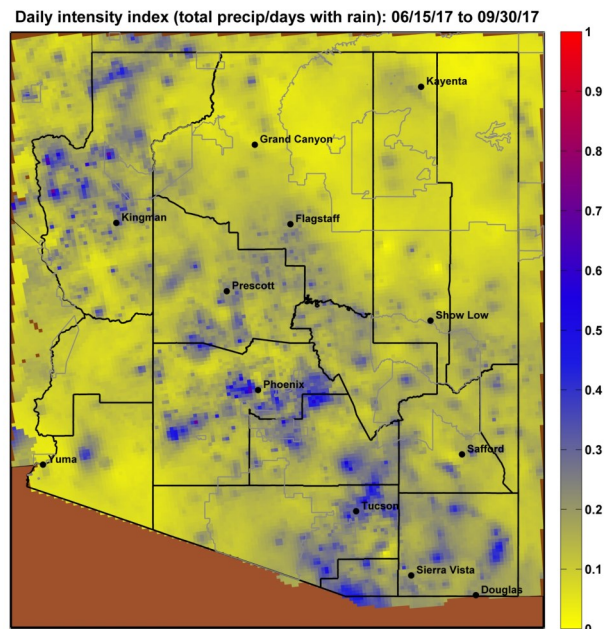
More information available at :
<http://cals.arizona.edu/climate>
<http://www.climas.arizona.edu>

Questions /comments? Contact Mike Crimmins, crimmins@email.arizona.edu





Map produced using daily total precipitation estimates from the NOAA National Weather Service Advanced Hydrologic Prediction Service (AHPS). Data information available at <http://water.weather.gov/precip/about.php>. Date created: 02-Oct-2017
University of Arizona - <http://cals.arizona.edu/climate/>

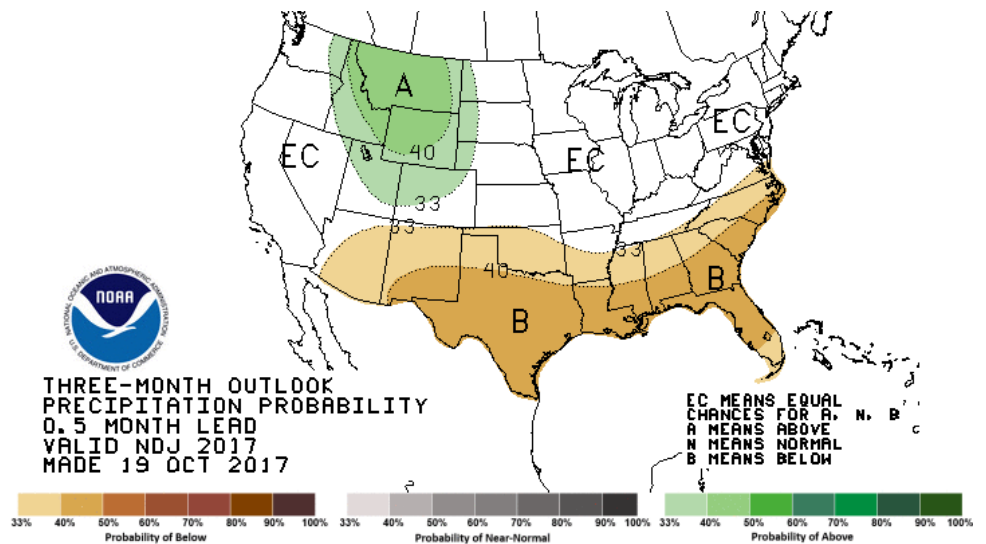


Map produced using daily total precipitation estimates from the NOAA National Weather Service Advanced Hydrologic Prediction Service (AHPS). Data information available at <http://water.weather.gov/precip/about.php>. Date created: 02-Oct-2017
University of Arizona - <http://cals.arizona.edu/climate/>



Total monsoon season precipitation (June 15th-Sept 30th— above-left) ranged from less than 1” in low elevation areas up to over 16” in far southern Arizona. As is typical, higher elevation areas along the Mogollon Rim observed relatively wet conditions with seasonal precipitation total ranging from 6” to over 10” on highest peaks. The intensity of precipitation (above-right), or the simple ratio of total seasonal precipitation to the total number of precipitation days, shows additional information on how even or extreme the precipitation events were that contributed to the annual total. The blue colors near 0.5 inches/day indicate that most of the seasonal precipitation came during a few precipitation events at these locations rather than evenly throughout the season over many days. These areas are typically the lower desert areas which observe fewer rain events in total, but some areas near Tucson also observed a few, very heavy rain days. More maps and info available at https://cals.arizona.edu/climate/misc/monsoon/az_monsoon.html

The November-December-January seasonal precipitation outlook issued by the NOAA Climate Prediction Center in mid-October depicts an increased chance of below-average seasonal total precipitation for much of Arizona, except the northwest corner of the state. This forecast for below-average total precipitation for the next three months is due to the emergence of weak La Nina conditions in the equatorial Pacific Ocean. Atmospheric circulation patterns have been indicating a weak response to the La Nina conditions which would spell a shift towards drier



conditions for the southwest U.S. over the upcoming winter season. La Nina events typically shift the average winter storm track away from the Southwest towards the Northwest, producing above-average precipitation in that area. The confidence in this outlook is a bit lower than usual given how weak and late this La Nina event is getting organized. It is also expected to be relatively short-lived with neutral conditions returning to the equatorial Pacific by late winter. Temperature outlooks indicate a strong chance of above-average seasonal temperatures over this period as well. (<http://www.cpc.ncep.noaa.gov/products/predictions/>)



Upcoming Events

November

15 PRF-Rainfall Index Sales Closing Date – Statewide, contact Russ Tronstad: tronstad@ag.arizona.edu for more information

December

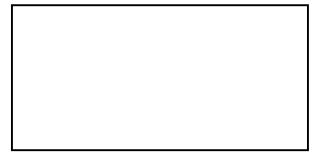
2017 Census of Agriculture – Statewide, Look for your 2017 Census of Agriculture Form

12 AZ/UT Invasive Weeds Workshop – Cedar City, UT, No Cost; 8am-4pm lunch included. AZ Pesticide CEU's available. Contact Andrew Brischke for more information brischke@cals.arizona.edu

January

3-5 AZSRM Winter Meeting – Globe, AZ Contact jheitholt@fs.fed.us for more information

Cooperative Extension, Cochise County
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450 S. Haskell Avenue, Ste A
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