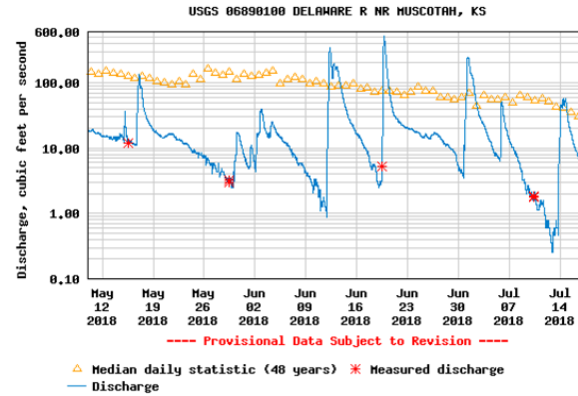
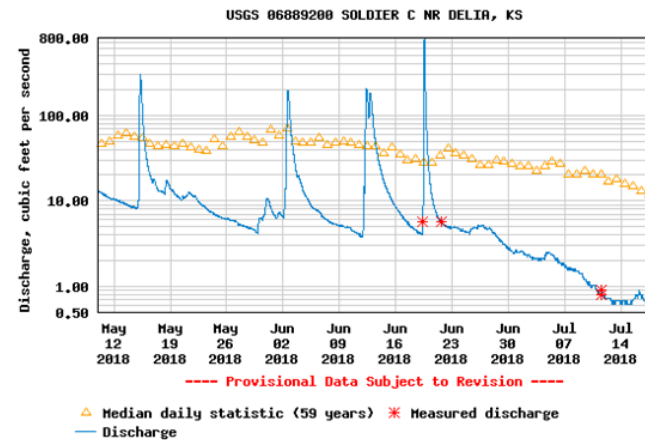
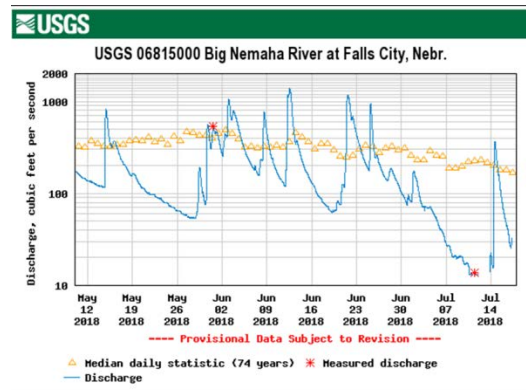


Streams

The three major streams that flow through Tribal lands in the region are showing decreased flows compared to their average seasonal discharge. The Big Nemaha River with the northern most watershed has benefitted from rains falling well north of the area. Soldier Creek appears to be the most impacted stream and has seen peak flows of nearly 800 ft³/sec decrease to less than 1.0 ft³/sec since June 22, 2018. The Delaware, which was running near average for the period has rebounded from its low of nearly 0.5 ft³/sec on July 12.



Water Planning and Management

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The Four Kansas Tribes are working with Haskell University under a BIA Water Planning Grant to create a set of tools that will allow our communities to better understand the resources we have and build resilience into the decision making process. Quarterly Climate Summaries use data from the High Plains Regional Climate Center, The Drought Mitigation Center, The Kansas Water Office, The 2014 National Climate Assessment, USGS Stream Flow, NOAA's Storm Prediction Center along with anecdotal evidence to create a snapshot of our environment and how we can best plan for the future.

Water Planning and Management

Understanding & using our resources

- Looking at our climate seasonally.
- Analyzing trends.
- Preparing for the future.
- Adapting to changes in the climate.
- Anticipating the future.

Inside this Issue

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If you don't like the weather.....Wait a minute

Top 10 cities with most weather variety	
Based on temperature variation, precipitation, wind, severe weather	
1.	Springfield, Missouri
2.	Topeka, Kansas
3.	Rochester, Minnesota
4.	Wichita, Kansas
5.	Columbia, Missouri
6.	Des Moines, Iowa
7.	Lincoln, Nebraska
8.	Madison, Wisconsin
9.	Concordia, Kansas
10.	Sioux City, Iowa

4 Kansas Tribes Climate Summary

Volume 1, Issue 2

Summer 2018

Climate and Resilience in Indian Country

It is not uncommon for people to sometimes to confuse climate with weather. Long term trends are sometimes overshadowed by intense rain storms, biting cold fronts or a series of blistering hot days that seem to go on for an entire month. There are a number of analogies that can help clarify the difference between climate and weather. For instance, if the weather represents the clothes you are wearing; climate would be the wardrobe that is in your closet. While weather looks at day to day conditions, climate looks at these conditions in the long term-typically 30 years or longer. Longer term trends in temperature and precipitation can show whether the climate has been changing. In Northeast Kansas these changes are seen in warmer summers, longer growing seasons and more heavy rain events and flooding.

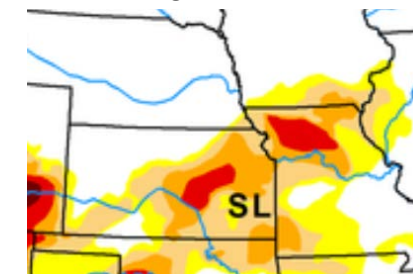
Tribal communities often have tight social networks, traditions and knowledge that foster resilience in the face of climate change...

-2017 Karuk Adaptation Plan

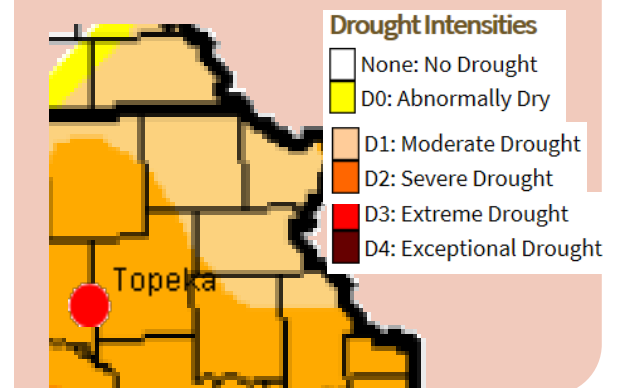
Tribal resilience will be tested as water resources become more valued, our vulnerable populations suffer the effects of heat and as soil conservation becomes increasingly necessary. Species like armadillos expanding their habitat north and the lack of diversity on Tribal lands is troubling. However, we can direct our efforts towards change that is beneficial to Tribal communities and all the people that benefit from them.

Climate Highlights

Eastern Kansas remained dry and severe drought expanded through northeast Kansas and was introduced into southeast Kansas while moderate drought expanded as well. Areas to the east, south and west are all seeing more intense drought conditions as well.



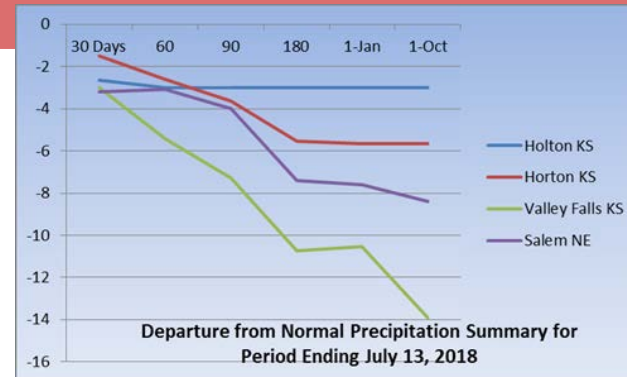
July 10, 2018



<https://www.drought.gov/drought/rcc/high-plains>

Rainfall

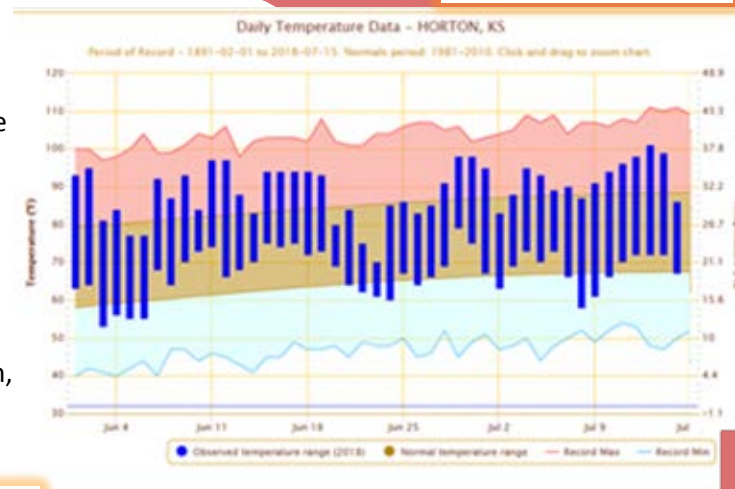
Rainfall totals continue to lag behind Seasonal averages. Going back 60 days the Northeast KS and Southeast NE departure from normal precipitation is -3.5". This variable represents a stress to numerous ecological services, the agriculture sector and even human health.



<http://scacis.rcc-acis.org/>

Temperature

Horton, KS is a central weather station for the four Tribes and the historical record goes back over 100 years. This temperature graph for the period of June through July 2018 suggests higher than normal temperatures for this particular period in the northeast Kansas region. Of 45 of the days shown on the graph, 31 days had above normal temperatures.



<http://scacis.rcc-acis.org/>

Bison on the Sac and Fox Reservation stir up some dust as the rest of the herd stick to the shade. Many small ponds are being stressed during the late Spring and early Summer this year.



There are 11 stations that can be accessed through SC-ACIS to refine our climate numbers even more. We can compare both single and multiple sites.

Upcoming Events

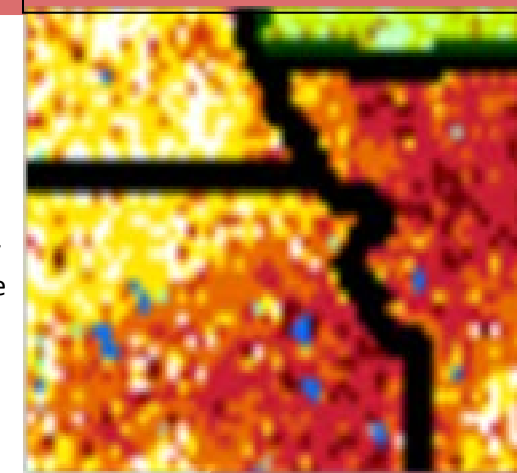
- Tribal Lands Forum in Spokane, WA Aug 13-16
- Tribal Health Summit in Mayetta, KS Aug 27-28
- Prairie Band Pow Wow at Mayetta, KS Aug 31- Sept 2
- Lunch Circle in Reserve, KS Sept. 11, 11:30
- Tribal Emergency Response in White Cloud, KS Oct- 9-12,.

Crops and Herds

The Percent Average Seasonal Greenness (PASG) and Start of Season Anomaly (SOSA) –are calculated from satellite-based observations and incorporated into the VegDRI. PASG compares the accumulated seasonal greenness up to a specific point in the year to the historical greenness (1989-2005) for the same date. PASG values of 100% indicate the current greenness is comparable to the average greenness for that place and time. Low values may be linked to some form of stress.

<http://veg dri.unl.edu/Home.aspx>

Vegetation Condition July 22, 2018



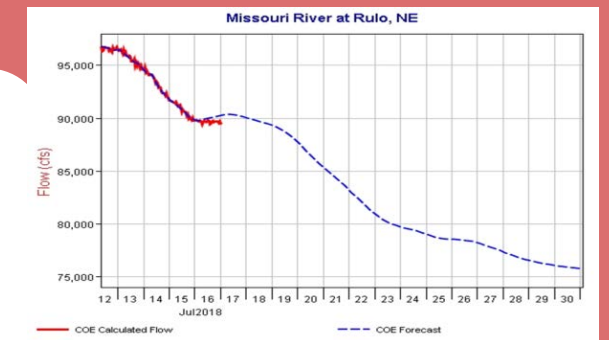
- Extreme Drought
- Severe Drought
- Moderate Drought
- Pre-drought stress
- Near Normal
- Unusually Moist
- Very Moist
- Extremely Moist
- Out of Season
- Water
- Other Landcover

Flooding

Flooding along the Missouri River at Rulo, NE is predicted to diminish over the month of July as releases from Gavin's Point Dam return to normal.



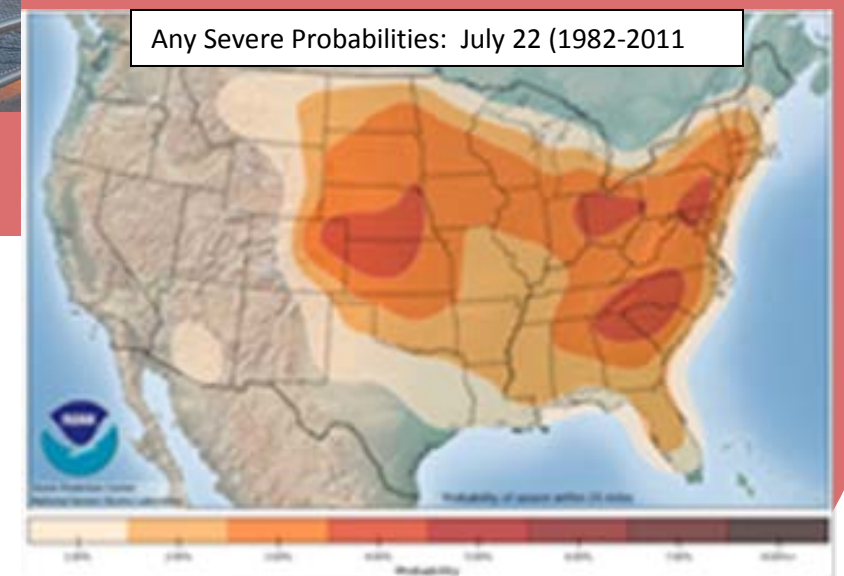
Environmental Directors Eric Sheets (Kickapoo) and Tim Grant (Omaha) check out the flow from Gavin's Point.



<http://www.nwd-mr.usace.army.mil/rcc/plots/jpeg/runefcx.jpg>

Severe Weather

The Severe weather outlook is based on historical probabilities and show the region has just a 3% probability to experience severe weather during the next few weeks. If you have stories or reports about severe weather in the region please let us know.



<https://www.spc.noaa.gov/new/SVR/climo/climo.php?parm=anySvr>