

# An Intertribal Research and Resource Center Newsletter

June, 2019

## Mission:

The IRRC provides services and builds capacity for enhancing food, energy, and water sustainability for tribal communities in the Northern Plains.

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UNITED TRIBES®  
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# Tribal Landscapes

*Research and Resources for Food, Energy, and Water Sustainability*



*Climate data workshop participants gather at CCCC May 14<sup>th</sup>-15<sup>th</sup>, 2019.*

## From Data to Decisions: Utilizing Data to Increase Resiliency on Tribal Lands

“What a beautiful day!”, “Wow, it was windy this week.”, “I hope we get some rain today.”, “When will this winter ever end!”

In North Dakota, most small talk conversations involve some groaning or reflecting on the weather. But what exactly is weather? How is it different from climate? And how do we access reliable climate data? The Intertribal Research and Resource Center sponsored a workshop May 14-15<sup>th</sup>, 2019 on the Cankdeska Cikana Community College (CCCC) (<http://www.littlehoop.edu/>) campus to help Spirit Lake community members, CCCC students and faculty, and tribal agency personnel answer these questions.

Climatologists Natalie Umphlett and Crystal Stiles from the High Plains Regional Climate Center at the University of Nebraska in Lincoln, along with



*James Rattling Leaf welcomes workshop participants.*

## Ideas to help all ages investigate and learn about regional weather and climate

### Grades K-5

Spark student interest in weather by involving them in collecting weather data throughout the year. See <https://sciencing.com> for ideas on how to help kids make their own basic measurement equipment. Upper elementary students can start to organize their data in tables and graphs to look at trends throughout the year.

### Grades 6-8

North Dakota features four distinct seasons but the reasons for this are often misunderstood. Involve students in evaluating data and creating models to help them make sense of and explain our different seasons. [NSTA.org](http://NSTA.org) features numerous resources for how to involve students in hands on investigations about seasons.

### Grades 9-12

Assist students in organizing and evaluating authentic geoscience data utilizing local climate summaries: <https://hprcc.unl.edu> Explore issues specific to tribal communities. For topic ideas read: <https://nca2018.globalchange.gov/capter/15/>

### At home:

Become a citizen scientist and help collect local weather data with the Community Collaborative Rain, Hail & Snow Network. All you need is a high capacity 4" diameter rain gauge and an enthusiasm to track and monitor the weather. Sign up at: <https://www.cocorahs.org/Application.aspx>

Contact [abahnson@uttc.edu](mailto:abahnson@uttc.edu) for more ideas about how to utilize the resources listed above.

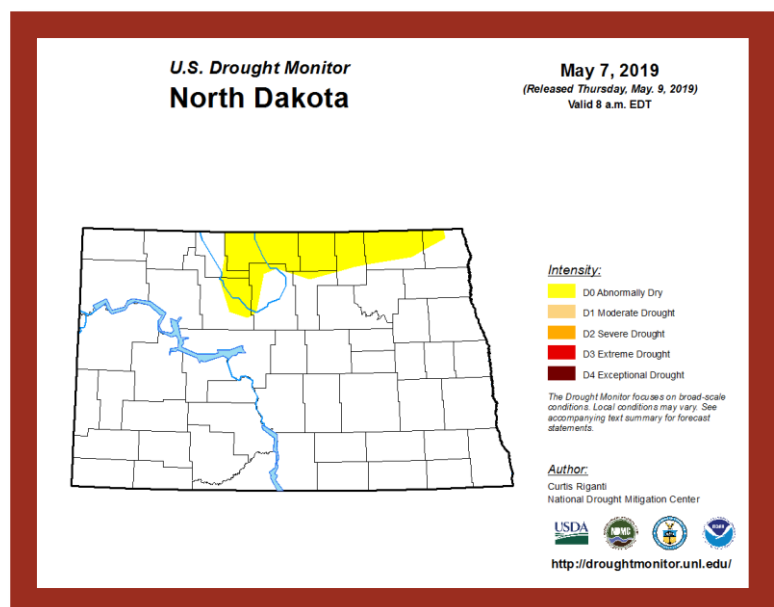
James Rattling Leaf from Rattling Leaf Consulting, LLC in Rapid City, SD facilitated the hands-on workshop.

Speaking to over 30 participants, CCCC President Dr. Lindquist opened the workshop by challenging participants to utilize education and data to better their community. Building off the President's words, James Rattling Leaf emphasized how education and data take many forms which include language and cultural knowledge. Further, he asked, "How do we use scientific data and cultural data to make decisions?"

Answering this question first requires a basic understanding of weather and climate as well as knowledge of what type of data are out there. Stiles describes weather as the here and now conditions in a place while climate is the average weather conditions over time. Or put more simply, "weather is the clothes you have on today and climate is the clothes you have in your closet." Basic weather elements include solar radiation, air pressure, wind, air temperature, moisture, and precipitation measurements.

North Dakota is generally characterized by warm summers and cold winters but differences exist locally throughout the state. Umphlett helped participants access local climate data from the High Plains Regional Climate Center, which is a NOAA Regional Climate Center (<https://hprcc.unl.edu/>; <http://scacis.rcc-acis.org/>).

The amount of precipitation is at the forefront of the minds of local farmers and ranchers. Specifically, times of drought can cause major financial and emotional stress. Stiles walked participants through how to utilize the United States Drought Monitor website to access current and past drought data. (<https://droughtmonitor.unl.edu/>)



May 7th Drought Monitor map pictured above currently shows that only about 9% of North Dakota is experiencing abnormally dry conditions.

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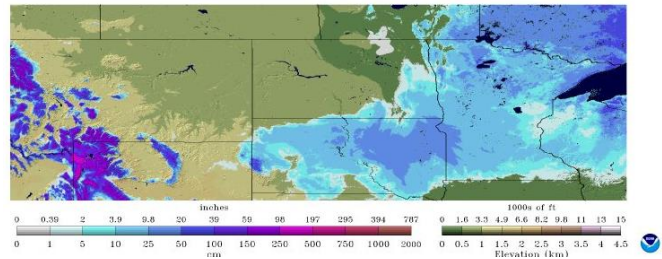
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## Water Supply Tools

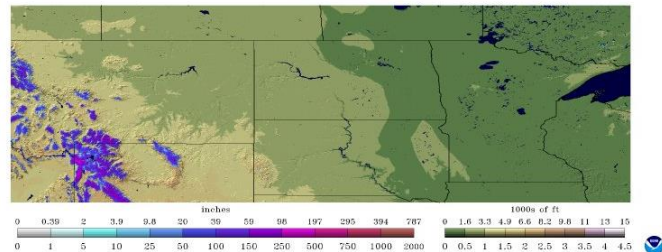
Streamflow and snowpack are two factors that can indicate drought conditions but can also lead to flooding

(<https://waterwatch.usgs.gov>, <https://www.nohrsc.noaa.gov>, ). May 15<sup>th</sup>, 2019 streamflow data show the majority of the state is currently experiencing near normal streamflow while the Red River Valley has above average streamflow.

April 15th, 2019 Regional Snowpack



May 15th, 2019 Regional Snowpack



## Next Steps: Making Sense of the Data

Accessing reliable climate data is only one part of the equation—making sense of and utilizing the data to make decisions is the harder part. Mark Junker of Sac and Fox Nation of Missouri in Kansas and Nebraska spoke to participants during a video conference about how his tribe utilizes the data. He produced four climate summaries to get a baseline understanding of his area. In June, he is forming tribal technical teams with eight other tribes to discuss combining traditional ecological knowledge and climate summaries to make tribal land decisions in the future.

When climate summaries are paired with outlooks

(<https://www.cpc.ncep.noaa.gov>), communities are better able to make decisions. “If an area has been experiencing abnormally dry conditions and the outlooks predict below average precipitation, a water manager could use that to create guidelines for when community members can water their lawns or crops to better conserve water,” Junker explained.

James Rattling Leaf concluded the workshop with these parting words: “What can we do with this new knowledge? We can continue having conversations to better understand what is most important to our communities to increase our resiliency and survival. Let’s figure out how to inspire innovation by helping others think about how to creatively use and view data.”

Thank you!

Cankdeska Cikana  
Community College for  
hosting our climate data  
workshop. Special thanks  
to CCC President Dr.  
Lindquist and Land Grant  
Director Heidi  
Ziegenmeyer.

Our workshop facilitators:  
James Rattling Leaf  
Crystal Stiles  
Natalie Umphlett

Interested in bringing a  
climate summary workshop  
to your area? Contact us at  
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From Data to Decisions Workshop Participant Feedback

*“I learned what a large scope weather and climate  
impact and how to be proactive in implementing tribal  
weather data collection.” -Tribal Agency Personnel*

*“After the workshop I plan to work with tribal agencies  
and partners to develop climate summaries and  
incorporate these datasets into my classes”  
-College Faculty*

*“The most important thing I learned was how to put a  
native perspective into the climate information. All  
information was very good and well taught” -Student*



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