The North Central Drought & Climate Monthly Webinar Series: Participation & Impacts

Report Prepared by the National Drought Mitigation Center
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Since 2011, the National Oceanic Atmospheric Administration (NOAA)'s Central Regional Climate Services Director, American Association of State Climatologists (AASC), U.S. Department of Agriculture (USDA) Climate Hubs and Office of the Chief Economist, National Drought Mitigation Center (NDMC), and National Integrated Drought Information System (NIDIS) have partnered to provide monthly climate and drought updates to stakeholders who live, work, or have interests in the North Central U.S.

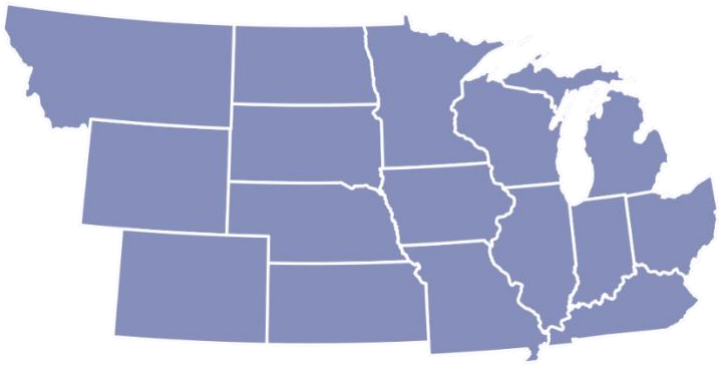

Figure 1: The North Central Drought & Climate Webinar series focuses on a 16-state region including Montana, Wyoming, Colorado, North Dakota, South Dakota, Nebraska, Kansas, Minnesota, Iowa, Missouri, Wisconsin, Illinois, Michigan, Indiana, Ohio, and Kentucky.

The *North Central Drought and Climate Webinar* series distills information about climate trends and extremes, drought, crop status, hydrology, monthly and seasonal climatological outlooks, and more into a 45-minute presentation followed by a question and answer session. The monthly webinar has grown over the course of the past decade as more users have tuned in to learn about the latest conditions from the Rockies to the Great Lakes. Average webinar attendance has nearly doubled, from 79 in 2011 to 151 people in 2020.

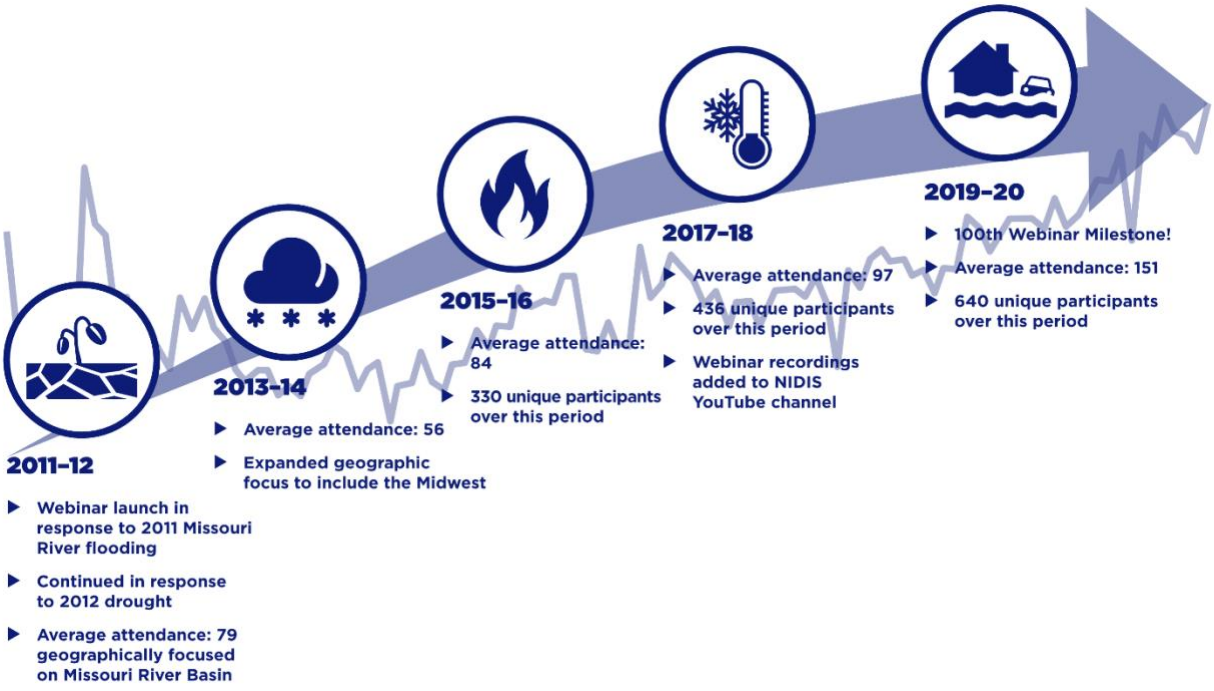

Figure 2: Growth in average attendance and participation between 2011 and 2020.

In 2021, the NDMC partnered with the webinar organizers to evaluate the reach and impact of the webinar series, using registration data, a survey of participants (n=410, 28% response rate), and two case studies. This report summarizes the webinar's audience, perceived usability, and use and impact.

Audience & Views

- Participants represented varied sectors, including weather/climate (36%), water supply or quality (31%), commodity row crops (24%), land use management (22%), livestock (20%), emergency management (20%), fish and wildlife (15%), specialty crops (14%), society/public health/safety (13%), and others.

Attendees over the years (approx.)

- 670 Federal Agency Staff
- 230 State Government Staff
- 40 Tribal Government/ Agency Staff
- 290 Academic and Research Staff
- 200 Business & Industry Leaders, including Farmers
- 40 Media Writers
- 85 City, Municipality, County Staff
- 50 Individuals
- 80 Non-profit and Trade Organization Staff
- 10 Elected Representative Offices
- 15 International Entities

Figure 3: Affiliation of webinar attendees from 2011-2020, based on registration data.

- The webinars were viewed over 13,500 times (live/archived recordings) between 2011 and 2020. Most participants view the monthly livestream (82%), but nearly half also viewed the archived webinar recording (44%) and the archived slides of the webinar (48%).

- Most participants (~80%) participated (at least some of the time) in the webinar's 20-minute monthly question-and-answer time and found it useful.

Trusted, Understood, Timely, Relevant

- Participants (90%) learn information that is new to them, including information about specific impacts, interests, and localities; details not included in general public reports; and the science behind the reports.

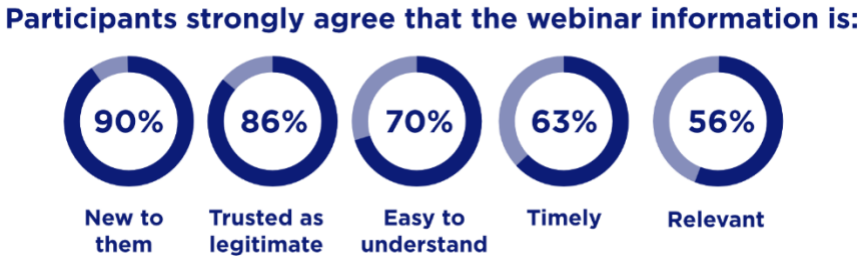

Figure 4: Percent of participants who said they strongly agree that the webinar information is new to them, trusted as legitimate, easy to understand, timely, and relevant.

Webinar Use & Impact

- The webinar has had a large impact on participants' awareness of weather/climate issues in the region, with 53% saying their understanding had increased a lot, and 42% saying it had increased a little. The series has also impacted participants' understanding of where to find weather/climate information (91% increased) and how to use the information (86% increased).

- The webinar series has positively impacted participants' interest and motivation in using weather/climate information to make decisions (45% said a lot, 38% said a little). To a slightly smaller degree, the webinar series increased participants' interactions and exchange of information with weather/climate information providers (33% said a lot, 43% said a little).

- Participants reported that their ability to take weather/climate concerns into planning consideration had increased a lot (43%) or a little (43%). And participants said that their ability to incorporate weather/climate information in decisions has increased a lot (37%) or a little (49%).

- The webinar series impacted their ability to communicate and conduct outreach, as indicated by the 87% of participants who said that they had shared webinar information with another person or group, and 48% who said they had incorporated information into a presentation or publication.

Figure 5: Examples of webinar information uses as reported by survey respondents.

- Over 40% of participants reported having made, confirmed, or changed a decision or developed a strategy, plan, program or initiative using webinar information over the past two years. And 26% said they had used webinar information in implementing a strategy, plan, program, or initiative. Of those who had used the information for some type of policy or decision-making, 81% thought that the webinar information had helped produce a better decision, policy, or regulation, and 19% were not sure.

In the *water sector*, webinar information has been used for many purposes, including: making adjustments to reservoir operations (set releases, drought preparation, flood response, etc.), briefing water management officials, making temporary water use permitting decisions, budgeting and forecasting water sales, assessing risks to drinking water, and examining long-range water availability risks.

In the *agricultural sector*, webinar information has been used to make decisions about crop production and marketing, and adjusting stocking rates and turn in/out dates for livestock. One individual noted that the information has helped them improve their pasture lands.

A few uses related to *fire management* were mentioned, including fire behavior briefings and decisions about how to prepare for fire season, initiation of short-term or long-term wildland fire resource requests, planning fieldwork such as prescribed burning, and targeting of limited mitigation funds to those areas/situations that could benefit the most from timely mitigation planning and interdiction.

A few individuals described support of *Emergency Management Teams/Agencies* by helping them to identify potential risks and prepare and enhance posture ahead of time.

With regard to *planning and policy*, participants said they have used the information to monitor specific triggers in flood plans, provide briefings about impacts of weather and climate to natural resources and impacts to the recreation and tourism industry, enhance Tribal Council awareness of climate change, and inform major upgrades in both surface and groundwater regulations in the participant's state.

Other uses of the webinar information include *construction* (i.e., "changed timing of certain construction activities and planned for projects that were weather sensitive"), *communication and outreach* (e.g., "informing decision makers about when to activate drought communications"), and *education* (i.e., "educational presentations on Climate Science to thousands between middle school age through adult civic organizations").

Participant Profile: Kevin Stamm, U.S. Army Corps of Engineers

Kevin Stamm works for the U.S. Army Corps of Engineers (USACE) Missouri River Basin Management, Northwestern division office and performs regulation of mainstem system projects. The USACE operates six Missouri River Reservoir System reservoirs: Fort Peck, Garrison, Oahe, Big Bend, Fort Randall, and Gavins Point, which together contain 72.4 million acre-feet of storage capacity. The USACE Missouri River Basin Water Management (MRBWM) office, located in Omaha, Nebraska, directs the regulation of the System to serve the congressionally authorized purposes of flood control, navigation, hydropower generation, irrigation, water supply, water quality control, recreation, and fish and wildlife. The System provides almost all of the reservoir support for downstream flow support on the Missouri River and contributes significantly to flood risk mitigation. This flood risk management covers over two million acres of land in the floodplains of the Missouri River.

Water managers in MRBWM participate in the North Central Drought/Climate Webinar almost every month. The monthly webinar information supplements two other monthly processes in the office: a monthly USACE call examining long-term runoff (water supply) forecasts through the end of the calendar year to adjust System operations plans; and a monthly call with multiple federal agencies, states, and congressional officials to discuss current conditions and outlooks related to System reservoir operations. They also appreciate the extra webinars that are sometimes offered when conditions are changing quickly.

Operating the nation's critical infrastructure, the MRBWM office works in a data-rich environment. Stamm's background in hydrologic engineering and his familiarity with meteorological outlooks provide expertise and experience needed to interpret data to manage reservoir inflows and releases. The office uses the monthly drought/climate webinars to improve understanding of the general climate trends and to corroborate their findings from other sources. The webinars also contribute to their understanding of climate impacts across the entire region for context in their near-term and long-term reservoir operations. In addition, the monthly webinar can be used to

share Army Corps of Engineers information with other agencies and stakeholders with an interest in the Missouri River Reservoir System. The webinars might not always provide new information for them, but does help them confirm what they are seeing. Having multiple messengers with the same message is helpful to the MRBWM office and also to stakeholders to get a clear message. Stamm mentioned that he could see value of even more communication between climate information providers and the MRBWM office as extreme events such as the February 2021 cold event show up in long-term and short-term forecasts.

Participant Profile: Mark Junker, Environmental Protection Agency of the Sac and Fox Nation of Missouri in Kansas and Nebraska

Mark Junker is the Tribal Response Coordinator for the Environmental Protection Agency (EPA) of the Sac and Fox Nation of Missouri in Kansas and Nebraska (Ne ma ha ha ki), located on Treaty land in northeast Kansas and southeast Nebraska. The mission of the Sac and Fox Environment Department is "to integrate environmental awareness and responsibility throughout the community, encourage environmentally sustainable practices, and protect the health of humans, our environment and our wildlife" (https://www.sacandfoxks.com/programs/epa). In his role, Junker has been responsible for remediating contaminated sites and recently has been responsible for preparing the Tribe's Pandemic Emergency Response Plan, and providing needed support throughout any emergency declaration. Beginning in 2014, Sac and Fox Nation EPA has included an emphasis on climate change. The Sac and Fox Nation of Missouri in Kansas and Nebraska was one of the first governments to include climate change in their hazard mitigation plan.

Junker has been viewing the monthly Central Region Drought/Climate webinars regularly since about 2017–2018. He is active in gathering climate information, and said he tries to view two or three of the different available webinars each month. With occasional schedule conflicts on Thursdays, Mark often participates in a Wednesday pre-webinar session with organizers and presenters.

The tribe has begun development of a drought early warning system, which consists of a weekly spreadsheet filled out using 22 different data sets from 18 different sources (including the U.S. Drought Monitor). The tribe is interested in comparing the data with their on-the-ground experiences to determine the appropriateness of the data for their area and uses. The Central Region Drought/Climate webinar lets him verify the data he has collected. It also provides an opportunity to analyze his data and note any inconsistencies or anomalous results. He likes seeing the discussion of which data others are finding to be the most reliable. He also likes seeing the impacts section of the webinars, even if they don't necessarily affect his area. For Junker, participation in the webinars supports a mindset that includes being aware of the data and thinking in terms of probabilities and percentages.

Junker remarked that his participation in the webinar allows him to save time. Instead of having to go out and look at several sources, a good synopsis is provided for much of the relevant information he needs. Without the webinar, Junker would feel less informed. He recommends that the webinar organizers reach out to other states/tribes, and that there could be more tribal participation with the webinars.