

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM

MISSOURI RIVER BASIN

DROUGHT EARLY WARNING SYSTEM

Upper Missouri River Basin: Building Drought Early Warning Capability in Montana
March 16-17, 2015 in Bozeman, Montana



PARTICIPANTS The diverse group included Big Sky Watershed Corps (BSWC) AmeriCorps members, watershed coordinators, state and local agencies, city planners, agricultural producers, land trusts, conservation districts, NGOs, hydrologists, and local federal partners. Representatives came from seven sub-watersheds of the Upper Missouri Basin, which include the Beaverhead, Ruby, Big Hole, Upper Gallatin, Lower Gallatin, Madison, and Jefferson Rivers.

Developing a drought plan, step by step

SPONSORS

- ◆ NOAA's National Integrated Drought Information System (NIDIS)
- ◆ The National Drought Mitigation Center (NDMC)
- ◆ Montana's Department of Natural Resources and Conservation (DNRC)
- ◆ The Environmental Protection Agency (EPA)
- ◆ The effort was part of a demonstration project for Montana announced by the National Drought Resilience Partnership (NDRP).

Watershed-based teams gathered for this workshop to strengthen ways they could engage their communities to better manage scarce water resources and prepare for future drought conditions. Facilitators from the National Drought Mitigation Center (NDMC) and the National Integrated Drought Information System (NIDIS) led the group in a step-by-step drought planning process using tools such as the Drought Impact Reporter, the Drought Risk Atlas, and the Drought-Ready Communities guide to track conditions, identify triggers and work through potential conflicts between water users.

Activities were designed to help teams develop or strengthen watershed-specific drought plans. And the meeting provided an opportunity to develop broader management plans reflecting water shortages even in non-drought years.

AGENDA

DAY 1: Identifying Impacts, Risks, Vulnerabilities, and Drought Monitoring Resources

- ◆ Overview of Drought Planning and Risk Management
- ◆ Identifying Drought Planning Resources
- ◆ Introductions to NDMC, NIDIS and the Missouri Basin Regional Drought Early Warning System; Montana State Drought Plan, Drought Advisory Committee and State Climate Office
- ◆ Identifying and Assessing Your Impacts and Vulnerabilities: The Drought Impact Reporter (<http://droughtreporter.unl.edu/>)
- ◆ Identifying Your Drought Risk: The Drought Risk Atlas <http://droughtatlas.unl.edu/>

DAY 2: Framing a Plan

- ◆ Drought Monitoring and Early Warning Resources: The U.S. Drought Monitor and other tools
- ◆ Identifying Monitoring and Early Warning Needs
- ◆ Framing Your Drought Plan
- ◆ Identifying Opportunities for Implementation of Mitigation Strategies
- ◆ How to Implement Your Plan

OUTCOMES AND THEMES THAT EMERGED FROM THE MEETING

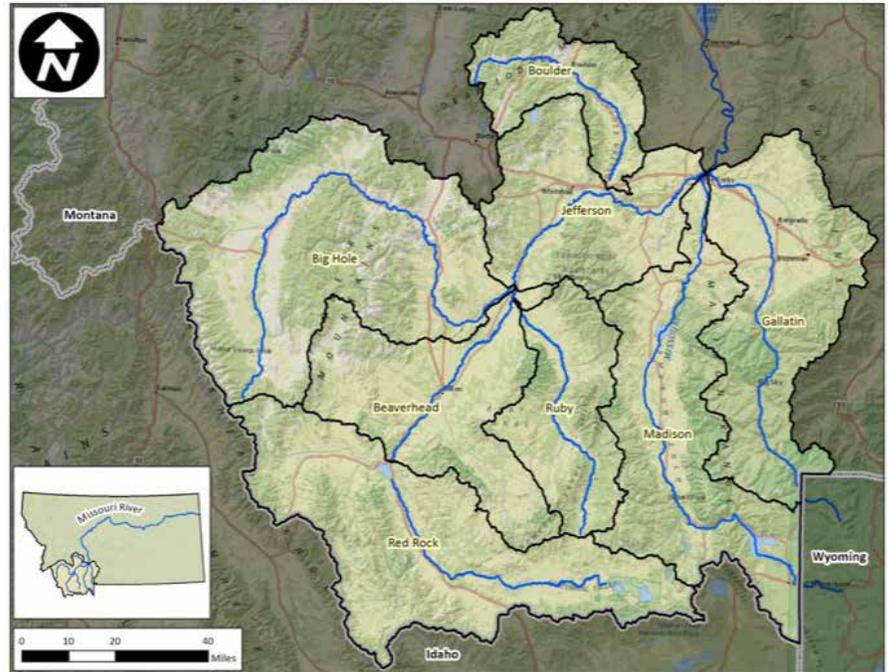
1) How to recognize and communicate work already underway in the watersheds;

2) How to leverage, integrate and build on existing successful efforts such as watershed restoration plans;

3) How to utilize active NGO partners, state agencies, universities, and private citizens in each community.

From these themes grew more specific goals and next steps which the watershed groups intend to pursue:

- ◆ Develop a Missouri Basin Headwaters Drought Plan: Working through the BSWC members and watershed coordinators, develop a regional plan that integrates the needs of the watersheds to promote early warning information and proactive planning for drought.
- ◆ Assess ways to integrate existing water planning concepts into the discussion of drought early warning and overall drought resilience in each watershed. For example, integrate drought planning into existing watershed restoration activities to get stakeholders (e.g. irrigators) more involved in drought-related planning. And, assess models and/or mechanisms that could support sub-watershed planning efforts like the West Gallatin plan.
- ◆ Conduct drought scenario workshops. These workshops would primarily focus on exchanging perspectives, and assessing triggers, data gaps and coordination needs within as well as among watersheds.
- ◆ Continue the dialogue between the BSWC members and NDMC, NIDIS, and DNRC through webinars and in-person meetings to exchange information on drought planning (e.g. NDMC's Managing Drought Risk on the Ranch), improve understanding of seasonal climate forecasts, and other topics.
- ◆ For watersheds with large resorts and rapid urban development, support water conservation efforts like those the City of Bozeman is implementing.



POST-WORKSHOP SURVEY

About 60% of participants polled after the workshop responded. They indicated important takeaways for them included learning about:

- ◆ resources for drought monitoring and management
- ◆ processes for drought planning
- ◆ who they can work with as partners
- ◆ other watershed councils and issues they are facing locally.

Some comments from the survey:

"In addition to more support by the state for stream gauges and coordination between resource agencies and other stakeholders, there needs to be more time spent on identifying and implementing best management practices which could be implemented to conserve or reduce water use."

"Starting to think about drought as a human and economic problem, not just a climate/environment problem."

About 60% said that, after the workshop, they were able to identify at least one course of action that they could take to minimize future drought risk in their watersheds, including stream restoration and starting a drought plan.

When asked what further steps that they hoped to take to minimize future drought risk in their watershed over the next six months, participants listed:

"Complete our watershed restoration plan to include potential projects that would result in natural water storage."

"Start a conversation about drought



among residents and other organizations in the watershed through education programs."

"Increase [our] initiative to work closer with the watersheds in the Ruby, Beaverhead and the Bighole."

"Facilitate meetings on beaver mimicry structures as a tool to level the hydrograph and raise the water table."

"Have discussions with community leaders about developing a plan, finding a facilitator for this process, and a funding source."

"Discuss with others to see dollar values on ranching and fishing in Madison"

"Implement water management projects in response to drought triggers."

Two-thirds of respondents said they would like to learn more about other existing drought plans. About half said they would like to learn more about tools and monitoring and forecast products such as snowpack, precipitation, temperature, streamflow and streamflow forecasts, fire risk assessment, seasonal climate prediction, etc.; vulnerability assessment; and communication techniques.