

Madison Watershed Planning Meeting—Climate Variability Meeting Summary

March 29, 2017

6:00—8:00 PM

Ennis School Cafeteria

To view additional meeting materials please visit the “Watershed Planning” page at madisoncd.org

Introductions

Guest Speakers: Greg Pederson—USGS, Dave Moser—FWP, Dan Durham—NRCS

Watershed Planning Background

Goal: To Lead the community in a collaborative effort to develop long-term solutions to our current, and future, water resource concerns.

- Identify water resource concerns.
- Identify opportunities to make improvements that mitigate concerns
- Develop and implement management practices or restoration efforts to reach the desired conditions

To help identify water resource concerns, we are hosting educational meetings to inform the community about various vulnerabilities related to water quality and supply. The focus of the March 29th meeting was on climate variability, and there will be a meeting about groundwater/surface water-related vulnerabilities on April 26th. Additionally, we will have a meeting on May 31st focused on example management practices that can be implemented to improve and/or maintain water resource conditions.

Climate Variability Meeting Objectives

- Present research on past, present, and future climate conditions effecting water resources
- Discuss how projected climate variability may impact future water uses
- Discuss opportunities to adapt management practices to mitigate impacts of climate to water resources

Guest Presenter—Greg Pederson (USGS)

Greg Pederson, a research scientist with the United States Geological Survey (USGS), gave a presentation about past, present, and future climate variability in the Missouri Headwaters Basin. Greg discussed research that has uses tree-rings to reconstruct snowpack and streamflow for the past ~1,000 years. This provided a context for drought and water supply conditions that can help us better understand our current climate and water conditions.

Next, Greg discussed the models researchers have constructed to help us understand how climate will change during the current century. These models suggest that temperature will continue increasing (as it has for the past century), and precipitation might increase slightly as well. Some of the greatest concerns this presents to water resources are the high likelihood for reduced snowpack and earlier runoff. Through our watershed planning process, then, we will work to identify ways to mitigate for these changes in snowpack and runoff to buffer effects felt by water users and various natural ecosystems.

How will climate conditions affect our community?

Projected climate conditions will likely have impacts on water resources, such as: reduced snowpack, increased evapotranspiration, and earlier runoff. These impacts will be felt differently across different sectors in the community. To discuss two different perspectives of the challenges climate variability might present to the local community we had Dave Moser (MT Fish Wildlife & Parks) and Dan Durham (Natural Resources Conservation Service) speak about the concerns and adaptation opportunities for healthy fisheries and agricultural production in the Madison Valley.

Dave stressed the need for cool, clean, and abundant, water for fish populations to thrive. One of the concerns for FWP is the increasingly warm water in the Madison River that have potential for stressing fish populations. There are few opportunities to provide shading and cooling to the water due to the width of the Madison. Therefore, one of the most important places to focus efforts is on the tributaries coming into the river. Ensuring an ample supply of cool water in tributaries is reaching the Madison River will help buffer these warming temperatures. Additionally, Northwestern Energy might have opportunities to regulate reservoir management to further reduce temperatures.

Dan discussed some of the affects that changes in temperature and water availability might present to agricultural producers. Since increased temperatures will also increase the loss of water in plants and soil to evaporation, ensuring fields have adequate ground cover can help reduce these water losses in agricultural settings. This ground cover can be achieved by leaving “litter” on the soil to act as a barrier, as well as practicing beneficial grazing management. Additionally, increasing organic matter in soil can provide increased water storage for plants to use. Dan also discussed the opportunities for monitoring soil moisture to help maximize irrigation efficiency and plant production.

Next Steps

We will continue exploring topics to help us better understand our current and future water resource conditions as we continue with our series of educational meetings.

April 26th—Understanding the connectivity of our groundwater and surface water.

May 31st—Exploring example management practices to improve water resources.

Meanwhile, we will continue developing our Madison Watershed Report to help characterize conditions in the watershed. The report will highlight focus areas, such as: water quality impairments, important groundwater recharge areas, climate information, current water uses, projected population/development, and example improvement strategies. The report will help prioritize water-related concerns and implementation actions as we continue through this planning process.

Attendee List

Name	Affiliation
Abigail King	Ennis Chamber of Commerce
Bob Zimmer	Greater Yellowstone Coalition
Bruce Richards	Madison River Foundation
Caitlin Avey	Madisonian Newspaper
Chelsea Pardo	Madison River Foundation
Dan Durham	NRCS
Davs Moser	FWP
Dottie Fossel	Jack Creek Preserve
Jessie Wiese	Montana Land Reliance/ Madison Conservation District
Kevin Germain	Lone Mountain Land Company
Kevin Suzuki	Madison Valley Ranchlands Group - Weed Committee
Lander Bachert	Big Sky Resident
Lawrence Anderson	Madison Stream Team & Madison River Foundation Volunteer
Linda Owens	Madison Valley Ranchlands Group
Liz Davis	Madison River Foundation
Lucinda Morris	Wildlife Conservation Society
Madeline Pruszenski	Madison Conservation District
Manu Redmond	Madison Valley Ranch
Rita Owens	Madison Valley Ranchlands Group
Sierra Harris	The Nature Conserancy
Will Griffiths	Montana State University - Student