

WYOMING AGRICULTURAL TECHNICAL SERVICE PROVIDER WEATHER, CLIMATE, AND WATER NEEDS ASSESSMENT

SUMMARY AND QUICK REFERENCE GUIDE



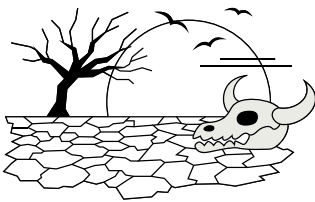
PROCESS

We conducted **6 focus groups** with agricultural technical service providers (TSPs) in Wyoming to determine their current efforts and needs related to extreme weather, climate data, and drought.

When: June 2023 - May 2024

Who: **49 total participants** from local, state, and federal government agencies, non-profits, municipal services, community colleges, and the University of Wyoming.

DROUGHT IS THE PRIMARY CONCERN



TSPs are concerned about major impacts to rangelands and forage caused by drought

CONCERNS RELATED TO WEATHER, CLIMATE, AND WATER AVAILABILITY

Changes in precipitation with shifts from snow to rain and changes in temperature affecting growing season.

More frequent and **extreme weather events such as flooding and wildfire** (due to increased presence of annual grasses).

Need for greater water storage capacity and **updating aging irrigation infrastructure**.

Competition for water between economic sectors and **water moving out of the agricultural sector**.

Opportunities to increase **soil health for enhanced water storage** (healthy soil acts like a sponge to store water).

DATA NEEDS FOR EFFECTIVE DECISION MAKING

- 1 RAW DATA**
 - **More weather stations**, stream gauges, and soil moisture probes
- 2 TOOLS TO TRANSLATE RAW DATA**
 - **User-friendly tools and data interpretation** support to aid producers and service providers in decision making
 - Ex: updating the red flag fire warning system using real-time data
- 3 FORECASTING**
 - Improvements to forecasting capacities
 - Ex: streamflow, soil moisture, and flooding predictions
 - Ex: **3-6 month outlooks** on precipitation to help with cropping decisions

- 4 DATA REPOSITORY**
 - Central **“one-stop-shop” hub** where producers and TSPs can access raw weather, climate, and water data
 - Easy access to existing tools that model or interpret information



“...THIS IS ON-THE-GROUND STUFF THAT PRODUCERS NEED TO KNOW.”

“[Producers] want one-on-one help from TSPs... like sit down at the table with producers and work through their unique situation. And we just don’t have enough capacity to do that.”

HUMAN CAPITAL DEVELOPMENT AND RESOURCE NEEDS

Significant **shortages in personnel and funding** are affecting the ability of TSPs to serve agricultural producers effectively.

Increased job demands and sudden policy changes are further **straining capacity of TSPs**.

There is desire for **additional training** in climate science, data interpretation, communication strategies, and technical GIS skills.

Peer-to-peer learning opportunities are important to leverage existing knowledge and efforts.

RESEARCH NEEDS & LOCAL RELEVANCE

There is a **need for practical, locally relevant research** that responds to the unique challenges faced by Wyoming agricultural producers.

FOUR MAJOR RESEARCH NEEDS CATEGORIES



Agricultural



Rangeland Management



Forest Management



Social & Economic

IMPORTANT THAT RESEARCH IS TRANSLATED TO THE PROPER AUDIENCES:

“There’s a lot of research out there. But if we can’t get it to the people that are doing the work, it’s useless.”

EXAMPLES OF RESEARCH NEEDS (SEE FULL LIST IN BULLETIN LINKED BELOW):

Identification of **cover crops** that can improve soil health with reduced irrigation.

Rangeland studies investigating impacts from invasive weeds, **plant composition shifts**, and low-tech restoration methods.

Forest **management responses** to bark beetles and shifts in vegetation composition.

Economic thresholds where changing specific management strategies related to drought and adaptation is cost-effective.

COMMUNITY RESILIENCE NEEDS

“What do we do when we don’t have enough water? ... instead of thinking about what is optimal, maybe we should be thinking about what is acceptable.”

Education and **relationship-building are key to enhance community resilience** to drought and extreme weather. Supporting early career TSPs is important to reduce turnover.

TSPs proposed various **educational programs** to inform producers and other community members about water rights, drought, weather, resource management, and emergency assistance programs.

Community discussions and engagement around resource prioritization and management are encouraged.

Building a community-oriented mindset and recognizing the **interconnectedness of water resources** are essential for effective regional collaboration and resilience.

With changes come **new opportunities** such as leveraging local beef markets and encouraging new industries.

Note: “Community” here means both the Wyoming agricultural community and geographic communities of people living in the same region or town.

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For more details, see the full Extension Bulletin (Publication number B-1404) found **HERE** or by scanning the QR code



This fact sheet is a summary of UW Extension Bulletin B-1404. The authors acknowledge the use of AI technology to generate the initial written summary of the Bulletin. This fact sheet’s final content, wording, and design is fully the responsibility of the authors and reflects their edits and judgment.

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