



Drought in the U.S. Northern Plains and Canadian Prairies: Initial Assessment of Impacts and Response to Build Resilience During an Ongoing Drought

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Drought Assessment Lead Author

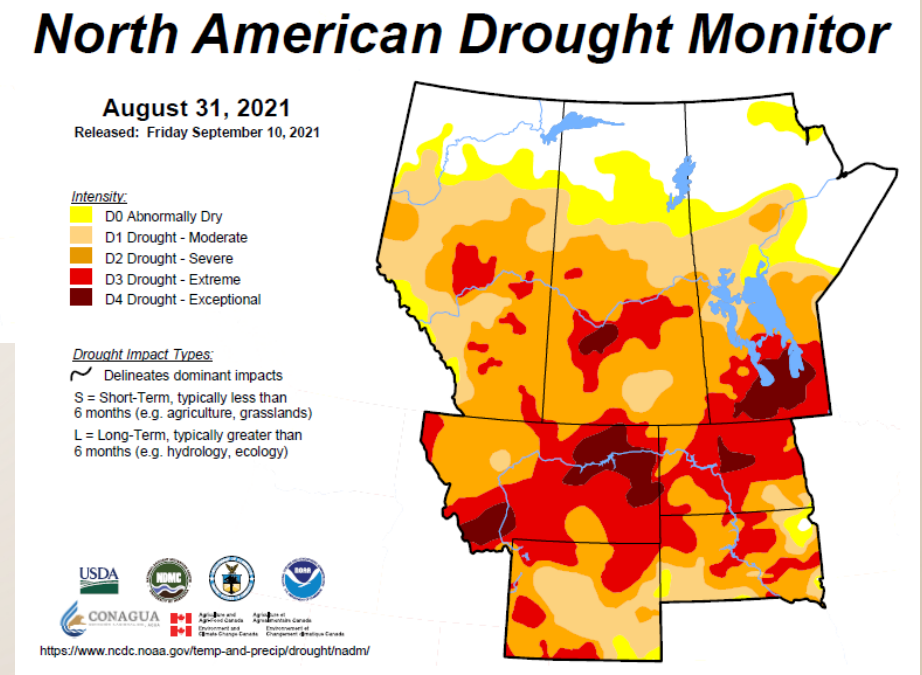
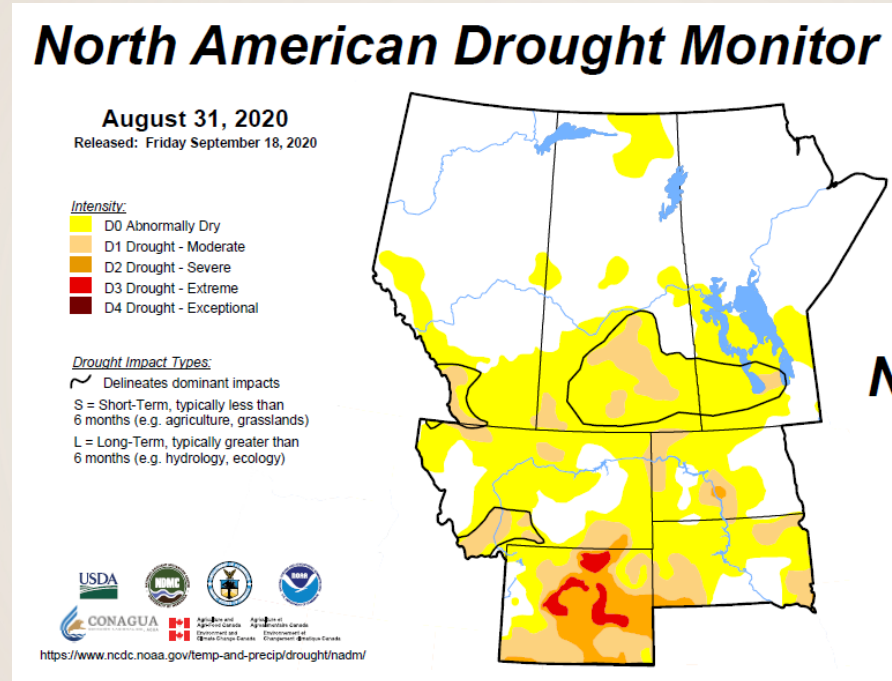
Current Affiliation: Northeast Regional

Climate Center, Cornell University

U.S. Northern Plains and Canadian Prairies

- Montana
- North Dakota
- South Dakota
- Wyoming

- Alberta
- Manitoba
- Saskatchewan



Why have a drought assessment?

- 2021 was the worst single-year drought in over 70 years in Canada
 - Close to 55 million acres of crop land, nearly 50 million acres of pasture land, and over 1.6 million head of cattle impacted across the Prairie region
- Most widespread drought in over 20 years in the U.S. Northern Plains
 - Nearly 98% of the region was impacted at its furthest extent
- Opportunity to reflect on drought response and preparedness since 2017 drought



Credit: Dannele Peck, USDA

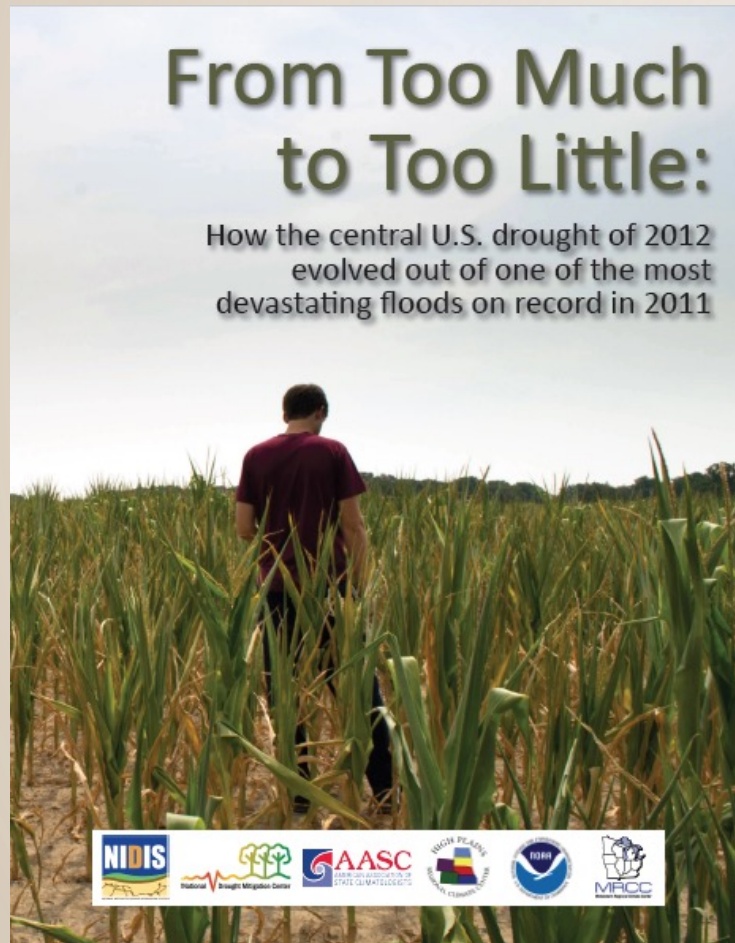


Credit: Alyssa Klein, AAFC



Credit: Michael Downey, MT DNRC

Drought Assessments in the Region



Partners

Department of Animal Science, North Dakota State
University

Fort Belknap Indian Community

Great Plains Tribal Water Alliance

High Plains Regional Climate Center

Montana Climate Office, University of Montana

Montana Department of Natural Resources and Conservation

National Agroclimate Information Service, Agriculture and
Agri-Food Canada

National Drought Mitigation Center

NOAA National Centers for Environmental Information

NOAA National Integrated Drought Information System,
Cooperative Institute for Research in Environmental
Sciences (CIRES) at the University of Colorado Boulder

NOAA National Weather Service

North Dakota State Climate Office, North Dakota State
University

North Dakota State University Extension

South Dakota State University Extension

Standing Rock Sioux Tribe

USDA Northern Plains Climate Hub

Wyoming State Climate Office, University of Wyoming


...and more!

Report Outline

- Introduction
- Drought: Evolution, Impacts, and New Response
- Focus on the Livestock Industry: Impacts and Responses
- Summary of Response
- Building Resilience: Identifying and Addressing Gaps and Needs
- Concluding Remarks - Continuing the Conversation

Regional focus; callout boxes for highlighted impacts and responses

Drought Early Warning Update



June 18, 2020

Drought Early Warning Update for the North Central U.S.

Extreme Heat & Dry Conditions Forecasted to Persist: Potential Impacts in the Missouri River Basin & Midwest

Key Points

- Drought conditions have been recently deteriorating over areas of the North Central U.S. (Colorado, Kansas, Minnesota, Montana, North Dakota, South Dakota, Wyoming). Abnormally dry conditions have recently expanded as well.
- A recent increase in atmospheric demand (i.e., crop water use) is starting to cause some stress on rangeland, grassland, and crops as soil moisture availability is decreasing.
- Forecasts show the possibility for rainfall in some areas over the next week. However, it is not likely to be widespread. In addition, there is a greater chance for above-normal temperatures across much of the north central U.S. through the end of June into early July. Therefore, for those that do receive rainfall, hotter temperatures will likely continue to worsen conditions in some areas.


First Drought Early Warning Update of 2020

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First Drought Early Warning Update of 2020

Sneak Peek: Building Resilience: Identifying and Addressing Gaps and Needs

Synergies with 2017 flash drought report

- Maintain and expand **monitoring networks**
- Research into the role of **remote sensing** in data sparse regions
- Evaluation of the performance of new and existing **drought indicators** at various spatial and temporal scales
- Research into **local early indicators**
- Communicate available **drought relief** and/or **management programs**

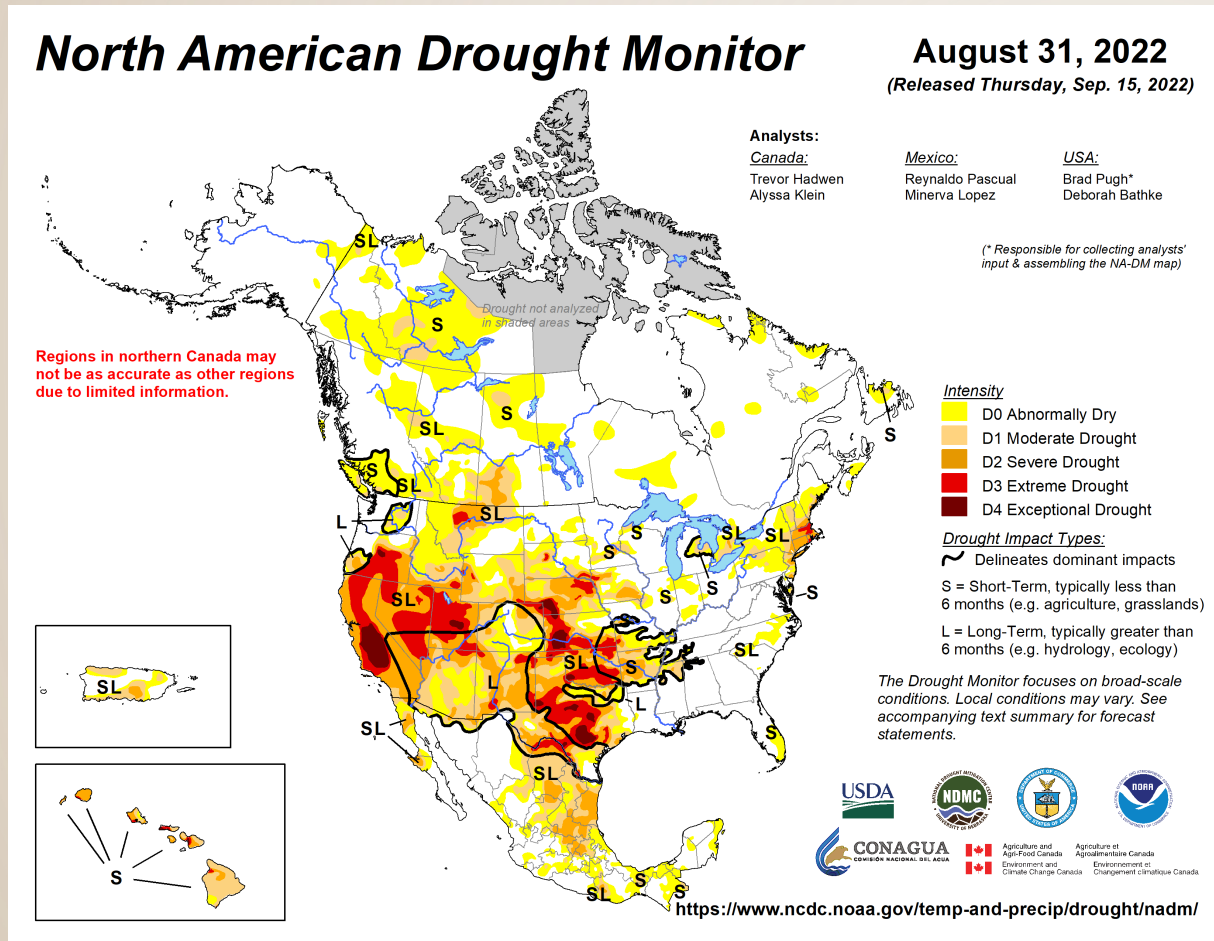
Efforts are underway to address many of these needs!

Sneak Peek: Building Resilience: Identifying and Addressing Gaps and Needs

New!

- Develop best practices for the use of metrics during **drought recovery**
- Develop best practices for communication during **longer-term droughts**; how do we effectively communicate as drought continues?
- Expand discussions of drought conditions and impacts to include **concrete responses and actions**
- Research into the relationship between **drought and wildland fire** in the region
- Develop new products and tools that take into account the **timing and duration of precipitation events**

What's next?



- Final report will be released in the coming weeks – stay tuned!
- Drought continues to impact parts of the region
 - Impacts and response efforts continue to be documented by NIDIS and partners
- Development of 2022 addendum may be needed

Questions?

Preliminary citation: Umphlett, N.A., B.A. Parker, M. Woloszyn, F.A. Akyuz, A.R. Bergantino, S. Brotherson, D. Crow Ghost, M. Downey, L. Edwards, T. Hadwen, Z. Hoylman, K. Jencso, W. Kelley, A. Klein, D. Kluck, D. Longknife, K. Low, R. Mahmood, M. Meehan, G. Rush, C.J. Stiles, and S. Tangen. 2022. 2020-21 Drought in the U.S. Northern Plains and Canadian Prairies: Initial Assessment of Impacts and Response to Build Resilience During an Ongoing Drought. *NOAA National Integrated Drought Information System*.