

USDA Livestock Forage Disaster Program and Ranching in the Southwest U.S.

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End Users: National Weather Service, USDA Natural Resources Conservation Service, Farm Services Agency, Arizona Section of the Society for Range Management; Ranchers in Arizona and New Mexico, AZ and NM state drought monitoring committees, US Drought Monitor authors, regional drought monitoring experts

Additional Resource Support: National Integrated Drought Information System (NIDIS)

Project Dates: 2019 – 2023

Summary of Impact

Improving understanding of drought monitoring: This project aimed to improve applications of the U.S. Drought Monitor in Arizona, specifically regarding the Livestock Foraging Program. Findings resulted in a deeper and more nuanced understanding of regional drought monitoring. It improved research interview participants' knowledge about how the U.S. Drought Monitor is created and how it connects to Livestock Foraging Program payments.

Strengthening partnerships: The project strengthened relationships between CLIMAS researchers and key partners in drought monitoring and land management across Arizona and New Mexico, leading to valuable connections for future collaborations and promoting a more integrated and dynamic approach to drought research.

Supporting policy discussions: The final project report aimed to provide a better picture of what drought monitoring in Arizona looks like in Arizona and can inform policy discussions around the use of the US Drought Monitor and Livestock Foraging Program.

Problem Statement

The 2014 Farm Bill permanently authorized the U.S. Department of Agriculture's Livestock Forage Program, which compensates livestock producers who suffer grazing losses caused by drought and wildfire. The Livestock Forage Program bases payment eligibility on drought status categories of the U.S. Drought Monitor. Yet, Drought Monitor status assignments do not accurately capture the timescales of climate variability that drive forage production and drought impacts across Arizona and New Mexico. The current system may understate the extent of losses and need for compensation of Southwest ranchers.

Research Focus

This study evaluated how the current application of the U.S. Drought Monitor in the Livestock Forage Program addresses drought and wildfire risks faced by Arizona and New Mexico ranchers. In his role on the Arizona Governor’s task force and the U.S. Drought Monitor Technical Committee, Mike Crimmins was continually asked about the Livestock Forage Program by ranchers. Crimmins enlisted the help of social scientist, Christina Greene, to interview ranchers, extension experts, drought monitor technical contributors, and regional drought monitoring experts to understand the Livestock Forage Program from their perspectives. The research also explored who is excluded from receiving program payments based on how the drought status categories for the U.S. Drought Monitor are developed.

Project Activities

Key informant interviews: Perceptions around the Livestock Forage Program in Arizona and recommendations to improve range drought monitoring.

Project Outputs

Report:

Greene, C., M. Crimmins 2024. Perceptions and Experiences with Drought and the Livestock Forage Disaster Program in Arizona. Climate Assessment for the Southwest – University of Arizona, Tucson, AZ.

Selected Scientific Findings:

Discrepancies in monitoring: Researchers discovered a divergence between drought conditions as determined by the technical experts who develop the U.S. Drought Monitor and the ranchers and producers experiencing drought firsthand. These discrepancies are likely due to technical experts’ reliance on quantitative data over qualitative observational data and the lack of quantitative data collection points (e.g., monitoring stations) in the Southwest.

Incorporating local knowledge: The Drought Monitor could better reflect drought conditions in the Southwest by incorporating local knowledge and qualitative observations of drought conditions on the ground. This improved drought monitoring product would provide more accurate triggers for the Livestock Forage Program payments for Southwest ranchers. However, the U.S. Drought Monitor has no incentive to change the mechanisms that trigger Livestock Forage Program payments, and ranchers typically complain when they feel there is a discrepancy and are not receiving payments.

Project Challenges

Researchers could not access reliable data about Livestock Forage Program payments because program administrators do not collect and store data in a systematic way. Research findings were limited based on reduced data availability. Additionally, the politics and perspectives surrounding the U.S. Drought Monitor and the Livestock Forage Program made developing recommendations for best practices on drought monitoring ambiguous. Therefore, this research ended up providing more of an ethnography about the Livestock Forage Program and its connection to the Drought Monitor, rather than developing clear recommendations for how these programs should change.

On trying to impact drought policy:

Through interviews we started to hear about what people think of the Livestock Forage Program - how they think it has worked over time, how it's changed, and what they think could be done better. Ranchers are more concerned about issues when the drought monitor doesn't keep up with changing conditions and there's a disconnect between the two. But we've had so much drought in the region for the last couple of years that the program has been available to everybody. Anybody who wants it has been able to get it, so nobody has been grumbling about it, and it wasn't as pressing a need.

—
Mike Crimmins, CLIMAS

Societal Impacts by Category

Conceptual:

- The process of interviewing ranchers and farm services agency workers improved interview participants understanding about how the U.S. Drought Monitor works and how the process of triggering payments for the Livestock Forage Program happens.

Connectivity:

- CLIMAS researchers deepened relationships within the drought monitoring and land management spaces throughout Arizona and New Mexico through this project. These connections have informed future directions for CLIMAS research about wildfires and equity considerations in drought management.
- This project expanded collaboration between social and physical scientists within CLIMAS – already a strength of the program – creating more dynamic working relationships and opportunities for new research directions.
- This project aligned with other projects across the region to improve the efficiency and efficacy of drought monitoring across the Southwest, including:
 - A CLIMAS project that evaluates drought indices through soil moisture modeling, resulting in a drought monitoring 'playbook' for land managers in AZ (led by M. Crimmins).

- A USDA Southwest Climate Hub project to engage rural communities and ranchers in volunteer precipitation monitoring to improve characterization of drought conditions in rural areas and to help inform the USDM (led by C. Steele).
- Assessing the impact of drought on agricultural production and ranching in Arizona. Supporting data from this project about the U.S. Drought Monitor and drought index was shared with other researchers to support their economic analyses (led by A. Kerna Bickel and G. Frisvold).
 - A CLIMAS project to assess the impact of drought in the Rio Grande watershed in New Mexico (led by C. Greene).
 - A USDA Agriculture and Food Research Initiative funded project to assess the impacts of drought and climate change on ranchers and land managers across the western U.S. (led by K. Suding).

On interdisciplinary research:

It's my favorite thing about CLIMAS, the pair between physical/social science, and learning in both directions. It helps me know what's worth focusing on. It has helped inform our other projects, like our current Aridity project. We can get faster further by teaming up on this work.

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Mike Crimmins, CLIMAS