

The National Integrated Drought Information System (NIDIS)

Moving the Nation from Reactive to Proactive Drought Risk Management

Drought and Agriculture

Britt Parker • NOAA NIDIS/UC-Boulder (CIRES)

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What is NIDIS?

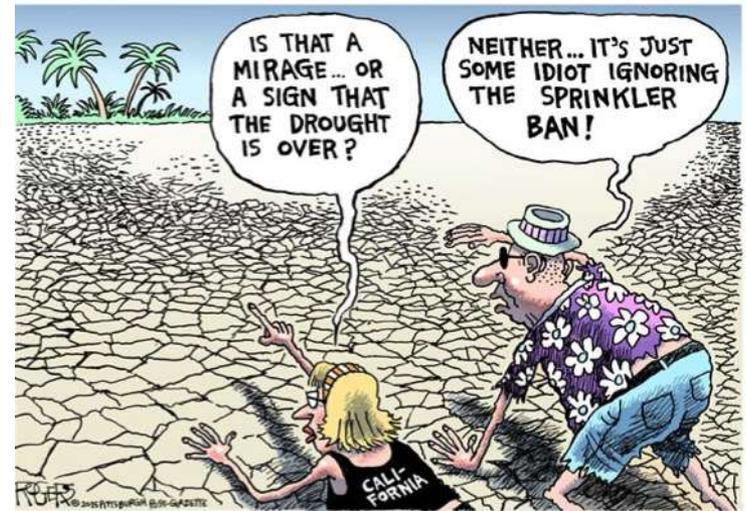
NIDIS was authorized by Congress in 2006 with an interagency mandate to develop and provide a national drought early warning information system.

Better drought-related decisions = reduced impacts and costs



NIDIS Goals

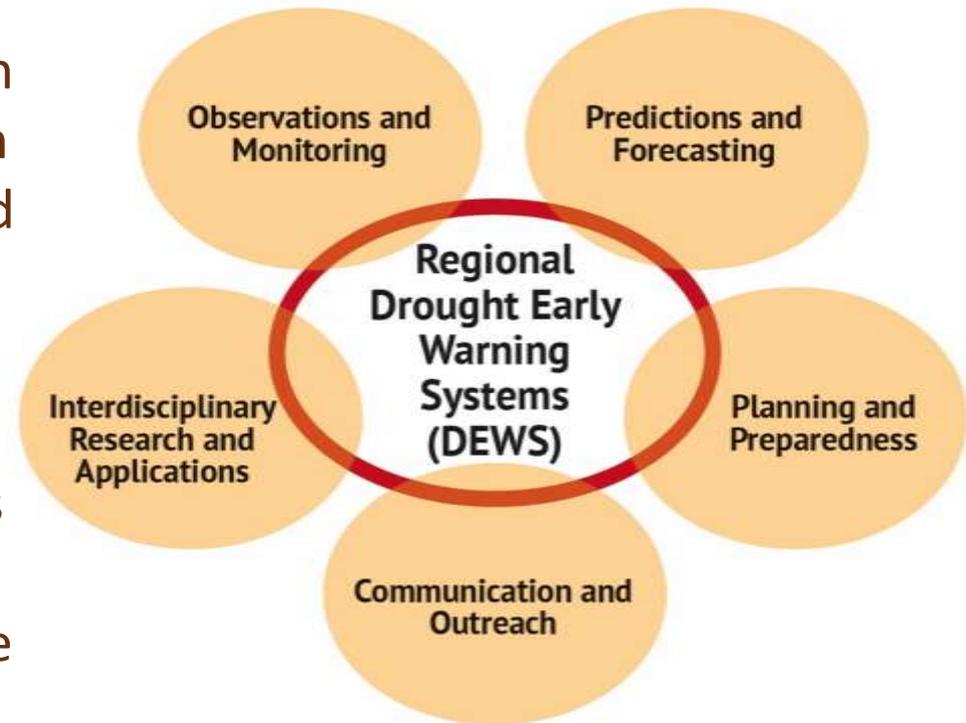
- Foster leadership and networking among all sectors of the economy and services to monitor, forecast, plan for and cope with the impacts of drought
- Support drought research, including indicators, risk assessment and resilience, as well as assessment of past events
- Develop educational resources, interactive systems, and tools to promote sound decision making, drought awareness, and response



What is a Drought Early Warning System?

“A comprehensive system that collects and integrates information on the key indicators of drought in order to make usable, reliable, and timely drought forecasts and assessments of drought.....

...and communicates drought forecasts, conditions, and impacts on an ongoing basis to decision makers, the private sector, and the public.”



- NIDIS Public Law 109-430





Britt Parker



Molly Woloszyn



Elizabeth Ossowski



Amanda Sheffield

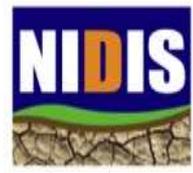


Elizabeth Weight

Veva Deheza

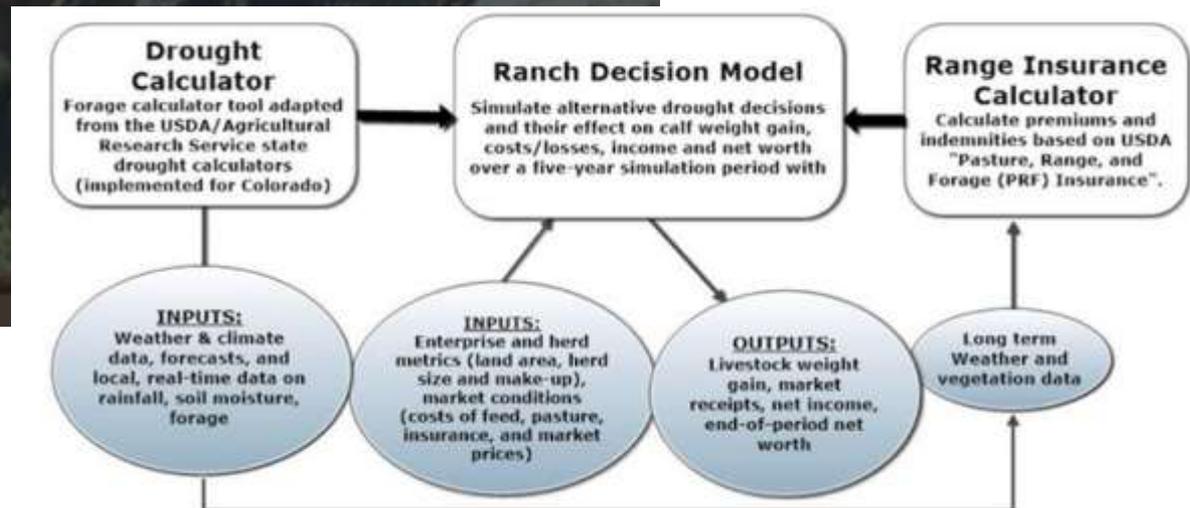
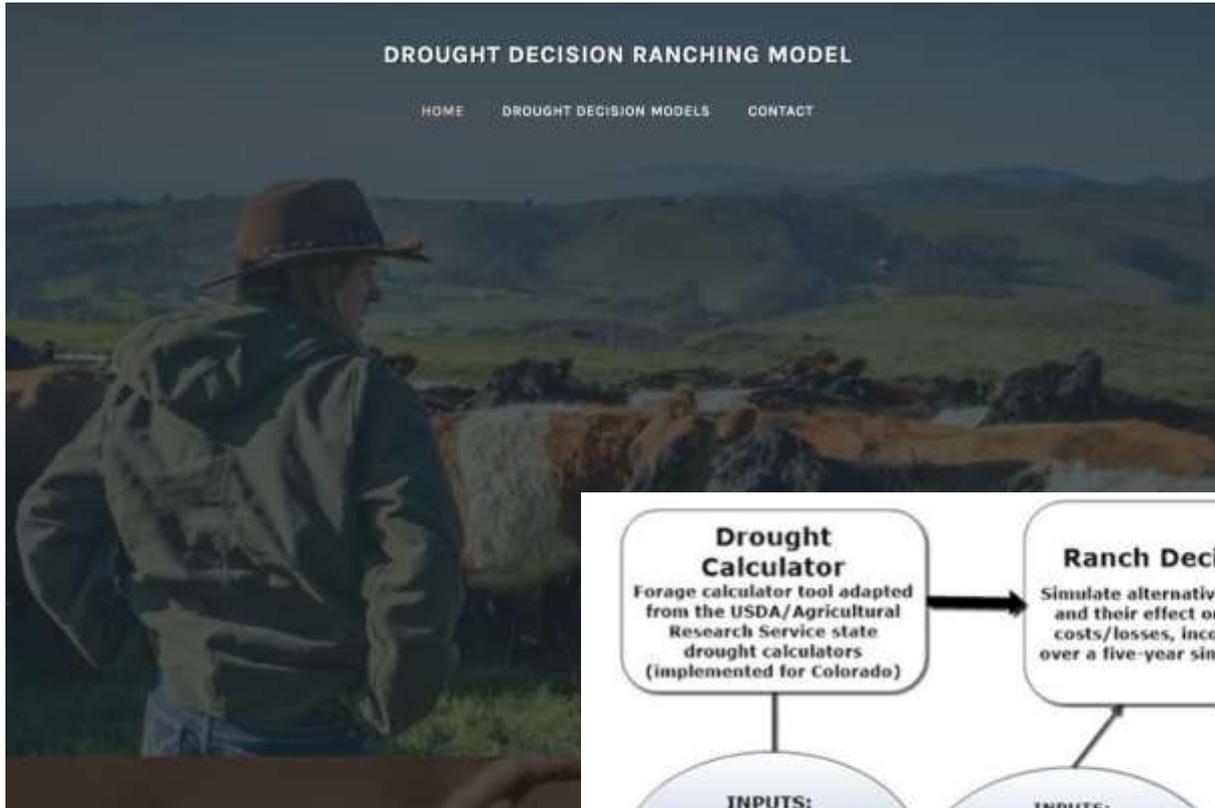


NIDIS DEWS



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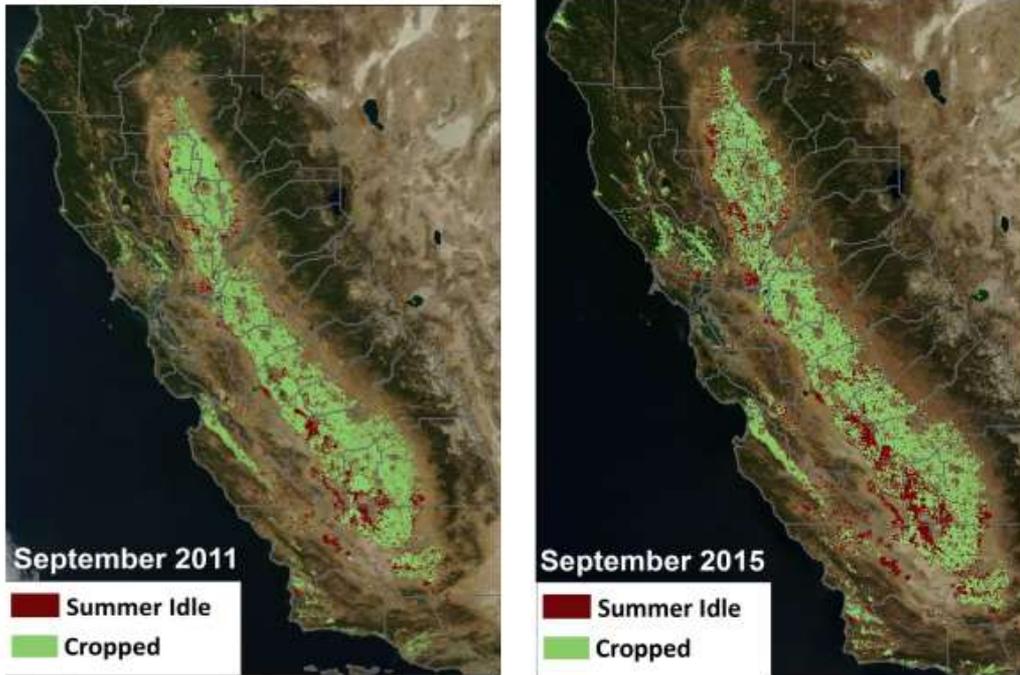
Drought Ranching and Insurance Response (DRIR) Model



Drought and Agriculture

Fallowed Land Tracking

1.B Summer Conditions



Fallowed Area Mapping for Drought Impact Reporting:

2015 Assessment of Conditions in the California Central Valley

October 14, 2015

Forrest Melton, Carolyn Rosevelt, Alberto Guzman, Lee Johnson, Isabel Zaragoza
NASA Ames Research Center Cooperative for Research in Earth Science
Technology and Education & CSU Monterey Bay

James Verdin (PI), Prasad Thenkabail, Cynthia Wallace
USGS

Rick Mueller, Patrick Willis
USDA National Agricultural Statistics Service

Jeanine Jones
California Department of Water Resources

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the NOAA National Integrated Drought Information System Program Office*

Currently working on expansion to
Nevada and the Pacific Northwest



Drought and Agriculture

Climate Engine

Drought Monitoring



Agriculture & Ecosystems



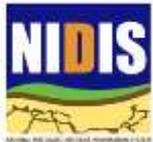
Wildfire



University
of Idaho



Google



Drought and Agriculture

Wildland Fire



DROUGHT IMPACTS ON WILDFIRE: AN UNCERTAIN FUTURE

In order to better understand the relationship between drought and wildfires in the Western United States and meet stakeholder needs at the state and regional level the Desert Research Institute (DRI), Western Regional Climate Center (WRCC) and NOAA's National Integrated Drought Information System (NIDIS) have partnered to form the NIDIS Drought and Wildfire Nexus (DNW) to identify priorities and actions to improve products and communication in the drought and fire connection. In addition to exploring drought impacts on wildfire planning, behavior and effects in the western U.S., DNW will also explore how drought information is used and could be improved across fire management agencies.

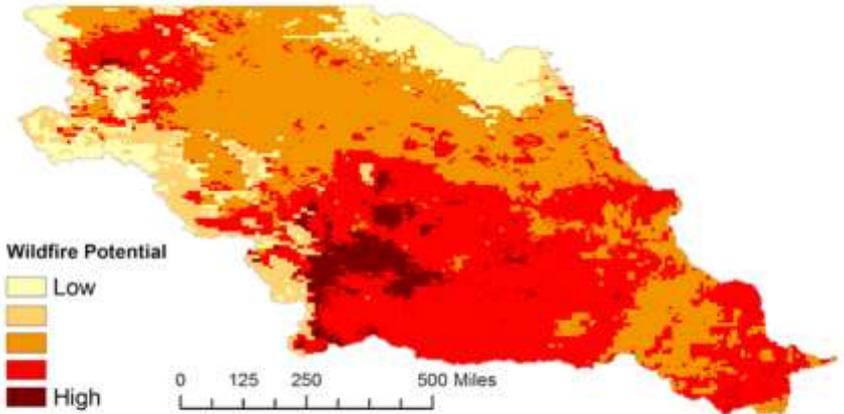
The DNW initiative kicked off at a workshop held in Reno, NV in October 2012, where fire managers and planners emphasized a need for increased engagement across agencies and the public on the topic of drought and wildfires. Many of the topics identified at the workshop are already present in the absence of drought. However, drought amplifies these impacts, and some can translate into entirely new impacts, both in intensity and consequences. Impacts where drought was implicated as differential to the planning, the behavior, and post-fire restoration include the following:

- Current planning processes are not flexible enough to manage drought impacts. For example, these processes prevent taking over restoration funding until ecological conditions are favorable, or the ability to replace narrow bank windows by fuel treatments.
- Drought conditions can alter where and how fire burns, and amplify safety concerns by increasing hazardous conditions for firefighters and nearby communities during the event.
- Drought can increase the likelihood that vegetation types will shift post-fire, allowing opportunities to invasive species to establish.
- Public and agency awareness of drought and wildfires is expanding as large fires become more common, but awareness of smoke from fuel treatments such as prescribed fire (Pn) still lags.
- Extreme drought increases the potential for large wildfires, which produce considerable smoke impacting local and regional public health.
- Drought amplifies firefighting resource demands and increases costs.
- Drought reduces barriers to the cultural and historic model by reducing fuel presence, snow pack and wetlands, thus increasing availability to loss.
- Overall, drought increases wildfire management uncertainty and worsens treatment effectiveness in fuel management and restoration efforts, decreasing ecological resilience.

OBJECTIVES OF THE NIDIS DROUGHT AND WILDFIRE NEXUS

- 1) To involve the fire community in the Drought Early Warning System (DEWS) and drought information webinars supported by NIDIS, National Drought Mitigation Center (NDMC), state, and local agencies to successfully utilize drought information in fire management programs.
- 2) To provide a baseline of how drought information is currently used in the wildfire community and primary sources, establishing a baseline survey tool to assess how drought information use in the fire management community, enabling NIDIS to identify changes in use and priority issues over time.
- 3) Identify gaps and needs related to drought information in the wildfire community.
- 4) Initiate the development of a network that successfully disseminates and utilizes drought information in the management planning, behavior, and effects decision contexts at state and regional levels.

To achieve these objectives, NIDIS, DRI, WRCC, and their partners will be holding a series of workshops in the National Interagency Fire Center's (NIFC) Geographic Area Coordination Center regions to better identify and address drought impacts by looking at the role of fuel types, fire regimes, topographic climatic conditions and cultural and societal settings in each regional context.



Utilizing NASA Earth Observations and NOAA Climate Data Records to Produce Climate Indications of Rangeland Health and Wildfire

