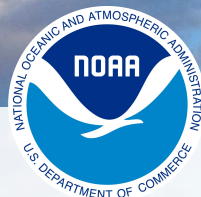


# National Integrated Drought Information System

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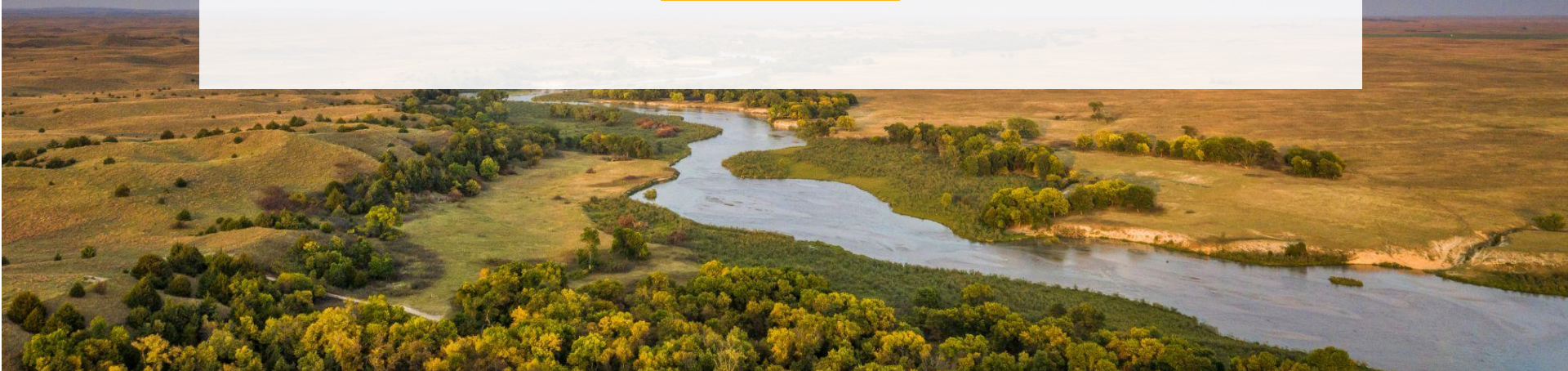
**Elizabeth Ossowski**

**Drought and Wildfire Webinar: Insurance Industry  
July 26, 2022**



# Current Information and Resources Available

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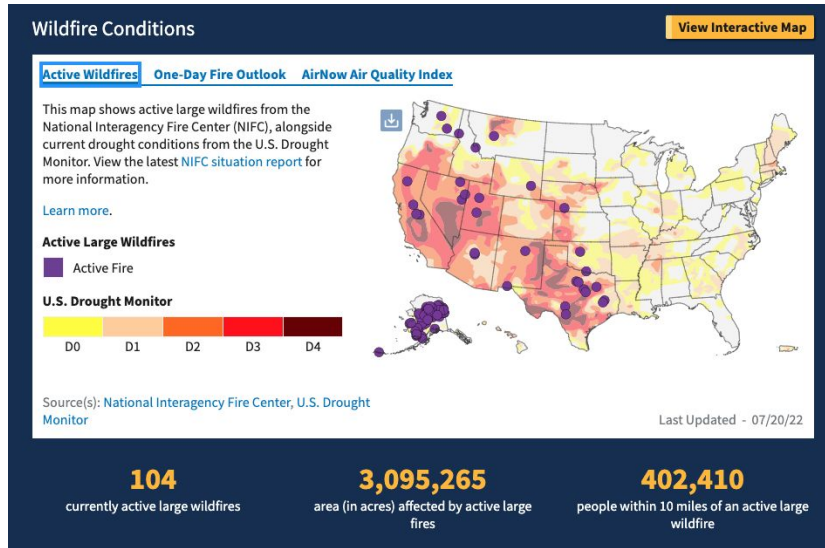


# The Connection Between Drought and Wildfire

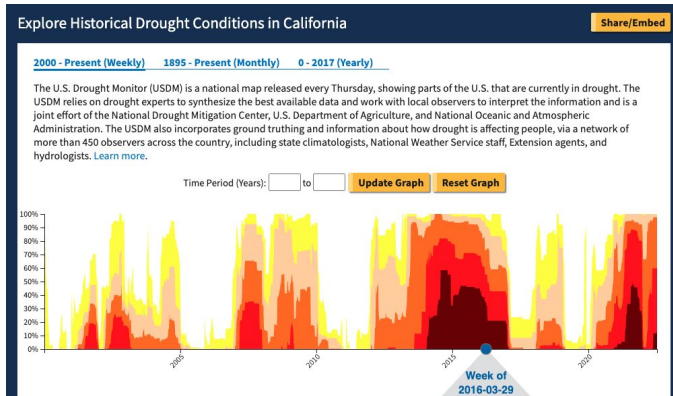
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- Drought **impacts wildland fire planning, fire behavior, and post-fire effects.**
  - Dry periods can increase the amount of flammable fuel.
- Drought **amplifies concerns** for firefighter and community safety, increases firefighting resources demand/cost, and increases wildfire management uncertainty.
- Drought also **impacts recovery** - from post-fire debris flows to increasing the likelihood of vegetation shifts.



- Wildfire Management Information
  - Interactive Maps
  - Key Issues and Background
  - Additional Resources
- Historical Drought Data



BY LOCATION | COUNTY

### Drought Conditions for Gallatin County

[Go To Montana State Page](#)

Get notified when conditions change

[Sign Up for Alerts](#)

<p><b>89,513</b></p> <p>people in Gallatin County are affected by drought</p> <p>No change since last week No change since last month</p>	<p><b>100%</b></p> <p>of people in Gallatin County are affected by drought</p> <p>No change since last week No change since last month</p>	<p><b>16th</b></p> <p>driest March on record, over the past 128 years</p> <p>↓ 0.95 inches from normal</p>	<p><b>5th</b></p> <p>driest year to date over the past 128 years (January-March 2022)</p> <p>↓ 2.44 inches from normal</p>
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The screenshot shows the top navigation bar of the Drought.gov website. It includes logos for NOAA and NIDIS (National Integrated Drought Information System), a search bar, and social media icons for Facebook, Twitter, and YouTube. Below the navigation bar, there are dropdown menus for 'Data and Maps', 'By Sector', 'By Location', 'Research and Learn', 'About', and 'News and Events'. A news article snippet is visible, titled 'Scientists Develop Method for Seasonal Prediction of Western Wildfires', dated June 9, 2022, with a read time of 5 minutes. The article is accompanied by a photograph of a large wildfire burning in a forest.

## U.S. DROUGHT PORTAL

# More Drought.gov Resources

- **Up-to-date drought conditions** from the city and county level to across the globe
- **Customization options for maps** throughout the site, creating easily shareable graphics
- New “By Sector” section, showing **drought impacts on different economic sectors**
- **Regional drought status updates** providing timely information on local conditions, impacts, and outlooks

## NIDIS DROUGHT + WILDLAND FIRE NEXUS

# Drought and Wildfire Nexus: Challenges and Solutions

### Key Challenges Identified by Wildland Fire Practitioners/Managers:

Lack of flexibility in planning processes to manage impacts

Droughts amplify safety concerns for firefighters & communities

Droughts increase likelihood for post-fire vegetation shifts

Extensive droughts increase potential for large wildfires

Drought increases firefighting resource demands/costs

Drought increases wildfire management uncertainty

## Solutions & Research Themes



Knowledge Exchange



Tool Development



Communication



Science & Research:  
Climate & Antecedent  
Conditions



Science & Research: Fuels



Science & Research:  
Post-Fire Recovery

<https://www.drought.gov/drought-in-action/nidis-drought-wildfire-nexus-ndawn>

## SOIL MOISTURE

# National Coordinated Soil Moisture Monitoring Network

*Coordinated, high-quality, nationwide soil moisture information for the public good*

### Objectives:

- Build a network of *in situ* networks
- Build a community of practice and expertise
- Support R&D to create real-time user-friendly maps & tools

### 2022 Priority:

- **Soil Moisture & Wildfire Nexus:** Update Fire Danger Ratings & support related tool development

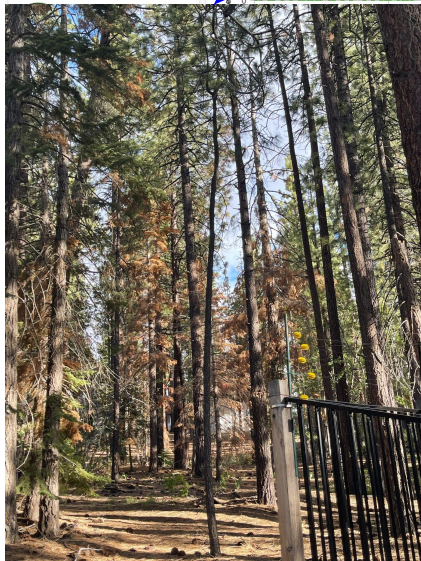
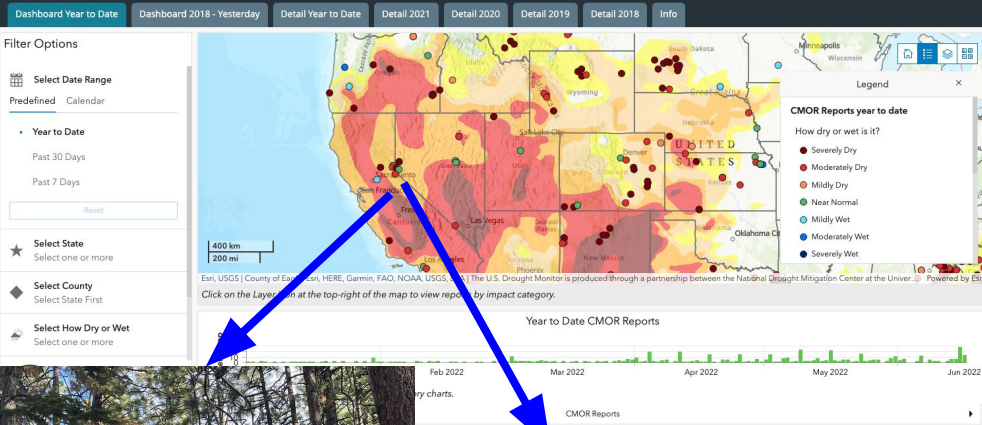


# Fire Weather

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- **Satellite-based “Nowcast” products for fire detection** to provide firefighters with critical information before and during the early stages of a fire.
  - Utilize historical weather and environmental data, together with AI, to predict rapid changes in wildfire risk and burn behavior from weather forecasts and land cover information.
- **New Fire Weather Testbed** will investigate fire manager needs, improve forecast delivery, and ensure fire danger information is part of the improved forecast plan.
  - Provide improved detection capabilities to keep communities safe, improve community preparation for and resilience to fire, and ensure highly accurate weather forecasts





“Widespread rapid tree death is occurring particularly with for trees in this area. Wildlife has been forced to migrate into new areas as a result of the lack of surface water that is typically available at this time.”



# Drought Impact Reporting Resources

- It is **vital to know what is happening on-the-ground** for drought monitoring, response, and planning.
- There is a system for **anyone to report their conditions** on the ground (text/photos) and to **explore previous reports**.
- Condition Monitoring Observer Reports (CMOR): <https://droughtimpacts.unl.edu>

# Understanding Current and Future Drought Risk

## Research on drought trends and predictability

The Southwest U.S. has suffered record low precipitation and near-record high temperatures, gripping the region with an **unyielding, unprecedented, and costly drought**.

NOAA's cutting-edge research investments on the Southwest drought, and others, help inform and prepare decision makers and the public for the continuing drought and future droughts.

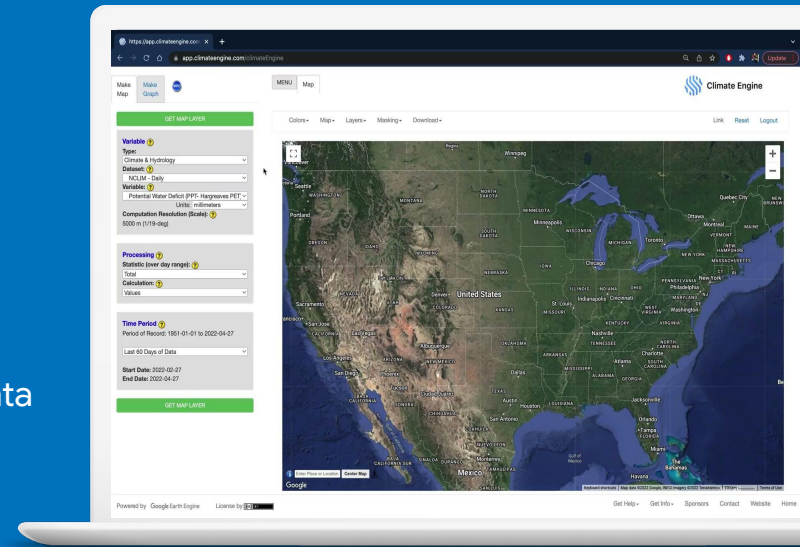
Drought research: <https://www.drought.gov/drought-research>



## Climate Engine

- Access to petabytes of climate and EO data
  - Historical, current, and forecasts
  - Multi-platform satellite products
- Google, NOAA, custom data catalogues
- On-demand data Processing
  - Values, anomalies, indices, trends, probabilities, zonal statistics
  - Interoperable calculations between climate and satellite data
- Download maps and time series data

<https://app.climateengine.com>



# Climate Engine - Case Study and Potential Applications for Assessing Risk

## CP Rail revenue, profits dip after drought and a harsh winter deliver one-two punch

CHRISTOPHER REYNOLDS  
THE CANADIAN PRESS  
PUBLISHED APRIL 27, 2022  
UPDATED APRIL 28, 2022



- NIDIS partners are monitoring wildfire risk and spread indicators for railways and assets using a combination of satellite vegetation, drought, and fire weather data
- Automated monitoring and integration into operations and asset risk assessments

<https://app.climateengine.com>



# Future Efforts and Potential Gaps

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- Insurance Product Needs of Drought-Prone Communities: Uninsured Losses
- Pre-disaster mitigation measures and the effectiveness of natural infrastructure solutions to mitigate drought risk
- Communicating Uncertainty
- Interagency Collaboration

# Thank You

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For more information, email  
[nidis.program@noaa.gov](mailto:nidis.program@noaa.gov).



[www.drought.gov](http://www.drought.gov)



@DroughtGov



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National Integrated Drought  
Information System

