National Integrated Drought Information System

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Drought and Wildfire Webinar: Insurance Industry
July 26, 2022
Current Information and Resources Available
The Connection Between Drought and Wildfire

- 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

https://www.drought.gov/sectors/wildfire-management
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
Drought and Wildfire Nexus: Challenges and Solutions

Key Challenges Identified by Wildland Fire Practitioners/Managers:

1. Lack of flexibility in planning processes to manage impacts
2. Droughts amplify safety concerns for firefighters & communities
3. Droughts increase likelihood for post-fire vegetation shifts
4. Extensive droughts increase potential for large wildfires
5. Drought increases firefighting resource demands/costs
6. 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

**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
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
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

“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.”
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
NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

Climate Engine - Case Study and Potential Applications for Assessing Risk

- 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

- 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

For more information, email nidis.program@noaa.gov.

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