Thank you to our meeting planning partners!
Meeting Goals:

- Provide an opportunity for regional partners to network and share ongoing drought activities.
- Learn about new and innovative drought data, information, and resources.
- Explore emerging drought issues and opportunities.
- Discuss ways to improve drought impact reporting, the U.S. Drought Monitor feedback process, and coordination of drought information.
- Identify collaborative paths forward for the CA-NV DEWS Network to continue to help the region monitor, forecast, plan for, and cope with the impacts of drought. Outcomes will be integrated into the 2020-2022 CA-NV DEWS Regional Implementation Plan.
Welcome to the National Integrated Drought Information System (NIDIS) Regional Drought Early Warning Systems.

- Drought Planning and Preparedness
- Prediction and Forecasting
- Collaboration with Existing Programs and Partners
- Integrated Research and Monitoring

The U.S. Drought Portal (www.drought.gov)

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**California-Nevada Drought Early Warning System Partners Meeting**

- November 18-19, 2019
- Capital Event Center, Main Floor
- 1020 11th Street, Sacramento, CA 95814

This meeting will bring together federal, state, local, tribal, academic, private sector, and non-governmental partners to:
- Provide an opportunity for regional partners to network and share ongoing drought activities.
- Learn about new and innovative drought data, information, and resources.
- Explore emerging drought issues and opportunities.
- Discuss ways to improve drought impact reporting, the U.S. Drought Monitor feedback process, and coordination of drought information.
- Identify collaborative pathways forward for the CA-NV DEWS network to continue to work together toward regional goals.

**Monday, November 18**

- 9:00 am: Registration Open
- 10:00 am: Welcome & Introductions

**Drought & Climate Updates & Outlook Session**

- Explore current conditions and forecasts as well as innovative tools.
- 10:30 am: Drought & Climate Update & Outlook - Michael Anderson (CA State Climate Office, CA Dept of Water Resources)
- 10:40 am: U.S. Bureau of Reclamation - Ken Nowak (U.S. Bureau of Reclamation) (remote)
- 10:55 am: Experimental River Forecast Center - Peter Gibson (NASA Jet Propulsion Laboratory)
- 11:10 am: Sierra Water Management - Don McGivney (Western Regional Climate Center)
- 11:25 am: Q&A Discussion on Current Conditions & Outlook

**Tuesday, November 19**

- 8:30 am: Light Breakfast (provided)
- 9:00 am: Welcome & Recap Day 1/Overview Day 2
- 9:15 am: Headwater Hydrology in Context of Climate Change: Severe Droughts and Wildfires
- 10:30 am: U.S. Drought Monitor Process & Successes & Challenges in Colorado
- 11:15 am: Recent Advances in Drought Impact Reporting
- 11:30 am: UC Rangelands & Reservoir Impact Reporting
- 11:45 am: Facilitated Discussion
- 12:30 pm: Working Lunch (provided)
- 1:30 pm: Advancing Drought Early Warning in California-Nevada - "Stakeholders' vision of the 2021-2022 CA NV DEWS Regional Implementation Plan Discussion"
California-Nevada Drought Early Warning System Partner Meeting

Sacramento, CA | November 18-19, 2019

Thank you to our meeting planning partners!
NIDIS
California-Nevada Drought Early Warning System Update

CA-NV DEWS Partner Meeting
Amanda Sheffield | November 18-19, 2019
Mission + Activities

- Regional Drought Early Warning Systems
- Prediction and Forecasting
- Integrated Research and Monitoring
- Drought Planning and Preparedness
- Collaboration with Existing Programs and Partners
- The U.S. Drought Portal (www.drought.gov)
Reauthorization

On January 7, 2019, the President signed S.2200 into law, the National Integrated Drought Information System (NIDIS) Reauthorization Act (Pub. L. 115-423):

• Authorizes funding for NIDIS to increase from $13.5 million in fiscal year 2019 to $14.5 million in fiscal year 2023

• Authorizes NIDIS to engage in partnerships with the private sector, academic institutions, and citizen scientists

• NIDIS will provide timely data, information, and products that reflect watershed differences in drought conditions

• Calls for NIDIS to support improvements in seasonal, sub-seasonal, and low flow water prediction

• Directs NOAA to develop a strategy for a national soil moisture monitoring network.
A Drought Early Warning System (DEWS) utilizes new and existing networks of federal, tribal, state, local and academic partners to make climate and drought science accessible and useful for decision makers.
Drought Early Warning

“A 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
To assess the status of national drought readiness, to take stock of progress since the 2012 National Drought Forum, and to help provide new information and guidance for coordination to improve the nation's preparedness to drought.
Panels and Keynotes

Day 1

- Linking National Security and Drought
- Drought Conditions: Past, Present, and Forecasted
- Drought Decisions around the New (Ab)Normal: Water Scarcity, Drought, and Aridity
- Keynote by Joaquin Esquivel, California Water Resources Control Board Chair
- Economics of Drought Part I: Understanding the Cost of Drought

Day 2

- Keynote by Neil Jacobs, Acting Administrator, NOAA
- Economics of Drought Part II: Risk Analysis and Investments that Drive Innovation
- Drought Policies: Congressional Perspectives
- Drought Coordination: Federal Water Officials and the National Drought Resilience Partnership
- Monitoring and Forecasting of Drought
Strategize Effective Ways to Approach Complex Topics Across Regions

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM (NIDIS)

Drought & Public Health
Drought & Wildfire
Drought Impact Reporting & Analysis
Drought Indicators & Triggers
To improve the utilization of drought information in wildland fire management for ecological health, public health, and firefighter safety.
2018-2020 Activities:
- Form a National Drought & Public Health Working Group
- Host a series of Regional Drought & Public Health Workshops
- Hold a 2019 Public Health Summit (completed)
- Support research & communication of linkages
- Create a public health sector space on the U.S. drought portal
- 2020 NIDIS Drought & Public Health Strategy

Better Prepare Public Health Professionals

- Assess State of the Science
- Establish Drought & PH Linkages
- Engage the international community
- Develop a Robust, Engaged Science to Action Network
- Create Forums for Knowledge Sharing
- Identify Gaps & Needs

IMPROVING DROUGHT EARLY WARNING

Drought & Public Health Linkages
Discuss ways to better prepare our public health agencies and organizations for the health hazards associated with drought

- 54 attendees from local, state, federal, tribal, non-profit, and academic partners

Example Key Priority Actions:

- Technical meeting on public health and drought indicators
- Research needs, e.g., human health costs of drought; mental health impacts of drought
- Communication materials
- Integration of the public health sector into the regional NIDIS DEWS

https://www.drought.gov/drought/calendar/events/national-drought-public-health-summit
Regional Drought & Public Health Workshops

- Build on Summit Outcomes, Share Information, Connect Drought and Health Communities
- Tailored around regional drought-related public health impacts
- 6 workshops from 2019-2021
- Next Workshop:
  November 2019 St. Paul, MN

Goals

- **Integrate** soil moisture data from in-situ monitoring networks, and merge with remotely sensed and modeled soil moisture products.

- Develop **real-time, high-resolution, gridded national maps**, and other products.

- Identify **strategies to expand** soil moisture monitoring across the U.S.
National Soil Moisture Network (NSMN)

- Coordinated NSMN Strategy
  - In development - called for in 2018 NIDIS Reauthorization
  - Identifies a roadmap forward and resources needed for implementing a coordinated network.
  - Overall 200 people involved in this initiative
Drought Scenario/Drought Tournaments

Drought Scenario-Based Exercises

The Drought Scenario-Based Exercises reference document provides planners and other professionals involved in drought risk management with a tool to learn about scenario-based exercises and how to select one suited to their needs.

Managing Drought Risk on the Ranch

This comprehensive drought planning guide for ranchers was developed with support from the U.S. Department of Agriculture’s Risk Management Agency.

Planning and Drought


https://drought.unl.edu/droughtplanning/AboutPlanning/PlanningProcesses.aspx
Drought.gov Redesign

- Improved site navigation
- Enhanced mobile experience
- New sector pages
- New up-to-date drought statistics
- Updated content
- U.S. Web Design Standards

Launch: Spring 2020
Kicked off in 2010-2012 in California with regional meetings and pilots and a 2014 California Drought Forum meeting.

Following the Nevada Drought Forum, Nevada was integrated in 2016.

CA-NV DEWS first Strategic Plan released in 2017 with a partner meeting in June 2017 in Reno, NV.
First CA-NV DEWS Strategic Plan 2017-2018

Priority 1 – Optimize the Collaborative DEWS Network

Priority 2 – Develop Drought Monitoring and Research

Priority 3 – Develop Forecast and Decision Support Tools for Resource Managers

Priority 4 – Improve Drought Early Warning Communication and Outreach

First CA-NV DEWS Strategic Plan
2017-2018

✓ Quarterly Partner Calls
✓ Place Based Decision Making & Cloud Computing & Trainings
✓ Integrate Drought & Climate Science into Wildfire Management & Develop a Wildfire Component for the CA-NV DEWS
✓ Evaporative Demand forecasts
✓ NOAA Drought Amelioration Tool & CPC Drought Outlooks
✓ CA-NV Drought & Climate Outlook Webinar Series & In Person Meetings
✓ Communication of water supply status and snow
✓ Regional project such as groundwater monitoring modeling with USGS in the Central Valley, Russian River valley drought risk & best practices on landscape, water resource management in southern Nevada

Example activities that are continuing:

Matrix of Drought Related Activities and Resources
Strengthen the USDM process
Support Drought Planning
Communication Framework

Gaps/Need

June 2017 CA-NV DEWS Partner Meeting

Drought Monitoring opportunities:
• Create opportunities for integration and assessment of monitoring across agencies and sectors as pertains to drought.
• Support a collaborative monitoring organization.
• Facilitate one stop shop for info and standardizing/integrating data sets.
• Facilitate the correlation between measured drought parameters and regional/sector specific impacts.
• Standardize and motivate regional impact reporting.

Forecasting opportunities:
• Coordination of stakeholder forecasting tools needs and comprehension.
• Develop accessible skill assessments of seasonal forecasts, including of streams, groundwater, ET, soil moisture.
• Hydrological forecasting products for variables such as snow and soil moisture.
• Examine applications of historical performance of forecasts to drought scenario planning.
• Advocacy for more parameter availability for expanded forecast analysis.
Communication & capacity building opportunities:

- Communicate best available tools and how can be used for informed decision making.
- Develop sector based communication approaches, including engaging sector leaders so they can communicate sector impacts.
- Create communication networks that move from the drought upwards.
- Facilitate communication and integration of risk and uncertainty information for better decision making.
- Facilitate understanding of how drought information (such as U.S. Drought Monitor) feeds into state and local decision making.
- Facilitate “common ground” between information development and consumer.
- Develop dedicated trainings and education for agency staff on best practices for how to use existing tools, as well as new.
- Local annotation of the USDM.
June 2017 CA-NV DEWS Partner Meeting

Gaps/Need

- Timely sharing of ongoing research and innovations
- Identifying redundancy of tools and information
- Regional database of research and stakeholders
- Connecting local and national efforts
- Better connecting observations with social impacts
- Explore planning and preparedness activities and post drought assessments
- New Partners: public health, NGOs, private sector, tribes, and economists.
National Integrated Drought Information System
Drought.gov

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https://www.drought.gov/drought/dews/california-nevada