Western States Drought Coordinators and Emergency Managers Meeting

July 2015 - Seattle, Washington

Report and Next Steps

Introduction

Drought in the American West is nothing new, but unusually high temperatures during the winter of 2014-2015 resulted in record-low snow packs in the Cascade and Sierra Nevada mountain ranges and foreshadowed a difficult summer for decision makers across the region. While record-breaking precipitation in May 2015 brought some relief east of the Rocky Mountains in Colorado, Oklahoma and Texas, drought's grip on the rest of the region tightened as high temperatures and dry conditions intensified from the traditionally dry Southwest up through the coastal regions of the Pacific Northwest. California's record-breaking drought entered its fourth year. The depth of Lake Mead almost dropped below 1075', which would have triggered the first set of mandated water delivery curtailments set forth in the Bureau of Reclamation's Colorado River Interim Guidelines.

On July 21-22, 2015, state drought coordinators, emergency managers and state climatologists from across the West came together for the first time to discuss emerging best practices in forecasting, planning for and responding to drought, and recent lessons learned. The Western States Drought Coordinators and Emergency Managers Meeting (Meeting) was held in Seattle, WA, hosted by the National Oceanic and Atmospheric Administration's (NOAA) National Integrated Drought Information System (NIDIS) program, in partnership with the National Drought Mitigation Center (NDMC) and the Western Governors' Association (WGA). Representatives from 16 of the 19 states within WGA attended the Meeting.

The Meeting set these goals:

- ✦ Identifying and addressing cross-cutting drought–related issues
- ✦ Highlighting opportunities for interstate coordination and collaboration
- ✦ Sharing effective strategies, recent lessons learned and case studies of drought mitigation and response

While NIDIS is a NOAA program, it is tasked under the National Integrated Information System Act (Public Law 109-430) with an interagency mandate to coordinate and integrate drought research, and build upon existing federal, tribal, state, and local partnerships in support of creating a national drought early warning information system. As a result, while the Meeting's primary objective was to bring together state-level representatives, the Meeting was also an opportunity to establish and strengthen relationships between federal and state partners.

The Meeting highlighted the need for future collaborations and ongoing communication. Participants agreed they should continue to meet on a regular basis, and meeting discussions and post-meeting evaluations

STATES REPRESENTED AT THE MEETING

Alaska	Montana	South Dakota
Arizona	Nebraska	Texas
California	Nevada	Utah
Colorado	New Mexico	Washington
Idaho	Oklahoma	Wyoming
Kansas	Oregon	

FRONT AND BACK COVERS

Lawns in Seattle's Ballard neighborhood attest to the drought conditions prevalent in the Pacific Northwest during 2015. NIDIS photos.

identified a series of next steps and recommendations for future actions to foster the partnerships established at the Meeting.

The Next Steps were organized under four key themes:

I. Build a Network of Drought Professionals: Using future meetings and virtual collaboration tools, continue to develop this network at the local, state, tribal and federal levels.

II. Enhance Drought Mitigation and Planning: Support and improve access to relevant science and information for decision makers, including forecasts, drought response actions, and drought adaptation strategies.

III. Improve Drought Communication: Support coordinated stakeholder drought messaging at the state and regional level.

IV. Improve Monitoring and the Reporting of Drought Impacts: Continue to support drought research and the subsequent development and improvement of tools and resources for improved drought monitoring and impact reporting.

SNOW DROUGHT

Compare the snow depth (or lack of) between June 2014 (top photo) and June 2015 (bottom photo) on Bogachiel Peak in Washington's Olympic Mountain Range. Much of the West relies on winter snowpack accumulation to feed its water needs during the summer months. Lack of snow in winter 2015 contributed significantly to the drought in the Pacific Northwest.

Washington State Department of Ecology photo.

FEDERAL PARTICIPANTS

Speakers and attendees from the following agencies and departments participated in the meeting:

U.S. Bureau of Reclamation (BOR)

Federal Emergency Management Agency (FEMA)

U.S. Geological Survey (USGS)

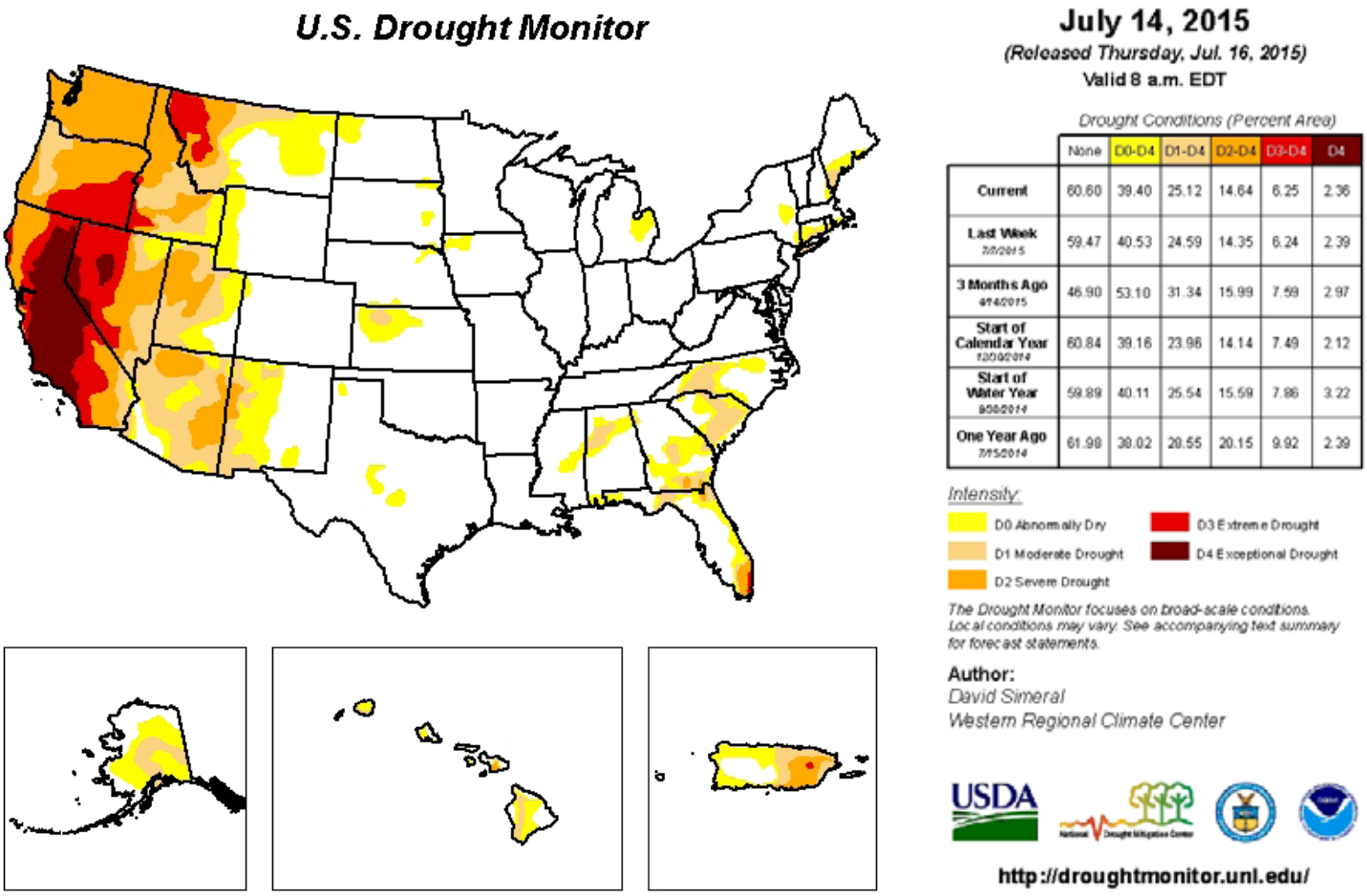
Natural Resource Conservation Service (NRCS)

NOAA, through:

- National Integrated Drought Information System (NIDIS)
- National Weather Service (NWS)
- Northwest River Forecast Center (NWRFC)
- Western Regional Climate Center (WRCC)
- Western Regional Climate Services Director (RCSD)

WHAT IS A REGIONAL DROUGHT EARLY WARNING SYSTEM (DEWS)?

Regional DEWS, developed by NIDIS, explore and demonstrate a variety of early warning and drought risk reduction strategies within a particular area. They incorporate drought monitoring and prediction information in partnership with federal, state, tribal and local agencies, organizations and other users. Located throughout the contiguous U.S., DEWS help regions plan for and establish best practices in drought-stressed times, and share this with other regions of the country.



THE PLANNING TEAM

The Meeting Steering Committee assisted in planning, developing the meeting's goals, objectives and agenda, indentifying speakers and participants, and preparing for the event. Members included :

Mark Svoboda, NDMC

Deborah Bathke, NDMC

Carlee Brown, WGA

Jeff Marti, Washington Department of Ecology

Taryn Finnessy, Colorado Water Conservation Board

Kirsten Lackstrom, Carolinas Integrated Sciences and Assessments (CISA)

Sam Rickets, Office of Gov. Jay Inslee (Washington)

Kathy Bogan, NIDIS

Courtney Black, NIDIS

Chad McNutt, NIDIS

Veva Deheza, NIDIS

Alicia Marrs, NIDIS

Meeting Context

Holding the drought meeting in typically rainy Seattle, WA, might have seemed counterintuitive in another year, but the unusually warm winter of 2014-2015 and the resulting "snow drought" in the Pacific Northwest set the stage well. With more than 98% of Washington State in severe drought according to that week's U.S. Drought Monitor (USDM), Maia Bellon, Director of Washington's Department of Ecology said in her opening remarks, "We have never experienced a drought like this."

Director Bellon said that by May 2015, 48 of 62 watersheds (85 percent of Washington state's area) were expected to fall below the state's threshold for drought declaration, triggered by 75 percent or less availability of normal water supply and determination of hardships resulting from these shortages. On May 15 Washington's Governor Jay Inslee declared the first statewide drought emergency in a decade, forcing state officials to reexamine how Washington responds to drought.

Eight other western states were experiencing severe drought conditions or worse (U.S. Drought Monitor classification D3-D4) at the time of the meeting in addition to Washingon. Governors in California, Nevada, and Oregon had all officially declared state drought emergencies. In response to record-breaking low snowpack in the Sierra Nevada mountain range, Gov. Jerry

Brown of California had announced the state's first statewide mandatory water restrictions on April 1.

In addition to addressing the current drought, the timing of the Western States Drought Coordinators and Emergency Managers Meeting served as a capstone to the Western Governors' Association's Drought Forum, which fostered a regional dialogue among states to share best practices on drought policy, preparedness and management through meetings organized by sector. The Meeting also brought together representatives from NIDIS Regional Drought Early Warning Systems (DEWS) in areas outside the West, giving participants an opportunity to connect with and learn from stakeholders in regions with existing DEWS.

"Is the current Southwest drought a once-or-twice a century drought like those of the past 500 years? Or a harbinger of things to come, a different type of drought that we have not observed before?"

Kelly Redmond, Western Regional Climate Center and the Desert Research Institute

Meeting Summary

The Meeting began with western climate, drought, and fire outlooks followed by an overview of the current conditions in Washington State. After the outlooks, panels of experts discussed a range of issues, including the use of monitoring to inform drought response; state perspectives in compiling the U.S. Drought Monitor; when and how states declare drought; communications challenges surrounding drought and the El Niño Southern Oscillation (ENSO); how drought has driven institutional, policy and regulatory changes at the state level; and tools and simulations available to inform drought planning.

Key highlights that emerged from the Meeting:

Observations and Research

- ✦ Establishing and recognizing indicators and monitoring are key components in early warning and response to drought.
- ✦ Operationalizing new tools and research products in NIDIS DEWS gives stakeholders access to cutting edge technology and information, and provides the research community real-time feedback from users.
- ✦ The Upper Colorado River Basin DEWS incorporates the Evaporative Demand Drought Index (EDDI) into its "Weekly Climate, Water and Drought Assessment for Colorado and the Upper Colorado River Region."
- ✦ The NIDIS Coastal Carolinas DEWS is developing a salinity drought index as an indicator for coastal droughts that could be useful to the West Coast.
- ✦ Regional tools use information collected by "citizen scientists" through the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) to build data and improve the understanding of drought impacts.

MEETING AGENDA

Session 1: Meeting goals, objectives, and desired outcomes

- Carlee Brown, Western Governors' Association; Veva Deheza, NIDIS
- Maia Bellon, Washington Department of Ecology

Session 2: Drought & Fire Outlook

Drought in the West is a persistent issue, particularly in California over the last four years and more recently in Oregon and Washington. This session discussed the status and expected evolution of drought and fire conditions across the West, as well as the potential impact of El Niño. Washington will present information on its response to the drought.

- Overview of historic and current conditions: Kelly Redmond, Western Regional Climate Center; Desert Research Institute
- Climate Prediction Center's Seasonal Forecast and El Niño Southern Oscillation (ENSO): David DeWitt, NOAA's Climate Prediction Center
- Wildland Fire Potential Outlook: Tim Brown, Western Regional Climate Center; Desert Research Institute
- Washington State Drought Response: Jeff Marti, State of Washington Department of Ecology

Session 3, Part I: Monitoring to Inform Drought Response

Drought is a slow-onset disaster and as such requires consistent monitoring for early detection and response. This session focused on some of the latest drought indicators and monitoring processes such as the state drought monitoring groups that provide input in the U.S. Drought Monitor.

- Before, During, After: Identifying Triggers and Indices: Mark Svoboda, NDMC
- Evaporative Demand Drought Index: Nolan Doesken, Colorado State Climatologist
- Coordinated National Soil Network: Jessica Lucido, U.S. Geological Survey
- Southern Climate Impact Planning Program (SCIPP) Photo Project: Mark Shafer, Associate State Climatologist for Oklahoma
- CoCoRaHS in the Carolinas, and Drought Salinity Index: Kirsten Lackstrom, Carolinas Integrated Sciences and Assessments
- National Multi-Model Esemble Forecast: David DeWitt, NOAA's Climate Prediction Center

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Bare ground dominated the Lost Horse snowpack monitoring site southwest of Yakima in February 2015. Department of Ecology; State of Washington http://waecy.maps.arcgis.com/apps/MapTour/index.

Session 3, Part II: State Views on Compiling the U.S. Drought Monitor

- Texas perspective: John Nielsen-Gammon, Texas State Climatologist
- Oregon perspective: Kathie Dello, Oregon Climate Change Research Institute
- Colorado perspective: Nolan Doesken, Colorado State Climatologist

Session 4: When and How States Declare Drought

Some Western states declare drought at a state level while in others, drought declaration responsibilities are appointed to the local counties. This session addressed these approaches along with the scientific, political and

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Drought Declarations and Decision Making

- Soliciting input from local stakeholders can be challenging when compiling state-based recommendations for the U.S. Drought Monitor. However, disagreement between what stakeholders see on the weekly map and what they're experiencing locally can motivate participation.
- California has a complex, highly managed water system that usually allows the state to postpone drought declarations in terms of water supply until ecological systems are threatened.
- The state of Washington relies upon a legal definition of drought for its declaration process. The definition requires that the geographic area in question has received or is projected to receive less than 75% of its normal water supply, together with a demonstration of hardship, which can be represented by agricultural, fisheries or public health interests.
- The fast tracking of disaster assistance funds from U.S. Department of Agriculture triggered by the U.S. Drought Monitor has helped depoliticize the drought declaration process in some states.

Communicating Drought

- States have struggled to develop consistent and effective statewide drought messaging that resonates with a diverse group of water users and interests.

- Emergency management offices are often tasked with coordinating responses to drought emergencies but rarely have robust communications budgets.
- "First responders" or emergency managers seldom respond to drought in the same way they do for other sudden-onset disasters like earthquakes, floods and hurricanes.
- California, Colorado, Oregon and Texas find it important to communicate with the public and media regardless of the skill of the forecast, especially regarding complex climate events like El Niño.
- California, Colorado and Oregon have found that establishing productive relationships between state agencies/decision makers and the media helps manage expectations and control messaging.
- The Southern Climate Impacts Planning Program (SCIPP), a NOAA Regional Integrated Sciences and Applications (RISA) team serving Oklahoma, Texas, Arkansas, Louisiana, Tennessee, and Mississippi, launched a "field photos" project to match photos from citizen scientists to the U.S. Drought Monitor map, creating a visual interpretation of the impacts of drought.

Implications on Policy, Water Rights Administration, and Regulations

- The U.S. Bureau of Reclamation (BOR) and the Washington Department of Ecology used the Secure Waters Act of 2008 to authorize federal water and science agencies to work together with state and local water managers to plan for climate change and other threats to water supplies, and take actions to secure water resources for Yakima River Basin communities, economies and ecosystems.
- Some decision makers consider the drought in the Pacific Northwest to be a "dress rehearsal" for conditions expected under climate change scenarios, and an opportunity to operationalize the Yakima River Basin Integrated Water Resource Management Plan.
- Recent devastating wildfire seasons in Colorado inspired the passage of a bill (CO HB 15-1129) authorizing funds to operationalize innovative research from the National Center for Atmospheric Research to develop a science-based wildfire prediction and decision support system that could give responders insight into a fire's expected movements 12 hours before they occur.
- Colorado's Gov. John Hickenlooper signed legislation in 2014 requiring the phase-out of all non-WaterSense® labeled plumbing products from retail store shelves within the state by September 2016.
- California enacted the Sustainable Groundwater Management Act in 2014 to empower local water agencies to establish and adopt groundwater management plans addressing the needs of their communities.

Tools & Information to Inform Drought Planning & Mitigation

- NDMC's Drought Risk Atlas gives decision makers access to historical

communication considerations of declaring drought.

■ Panel: Role of State Drought Task Forces in Drought Response and Declarations: Jeanine Jones, California Department of Water Resources; Jeff Marti, State of Washington Department of Ecology; Diane Knowles, Kansas Water Office

■ Panel: How States Communicate About Drought: Kathie Dello, Oregon Climate Change Research Institute; Ginny Stern, Washington State Department of Health; Christina Curry, California Department of Emergency Services

■ Panel: Communicating About the El Niño Southern Oscillation (ENSO) phenomena and its potential for informing state drought risk management: Jeanine Jones, California Department of Water Resources; John Nielsen-Gammon, Texas State Climatologist

DAY 2: WEDNESDAY, JULY 22, 2015

Session 5: Drought and Water Rights Implications

Administration of water rights provides a structured framework for allocating water supplies, particularly when supplies are limited during drought. Junior water rights holders are often the first to legally be "shut-off," however, water rights of more senior priority can also be affected, depending on drought severity. This session presented three case studies where water users were curtailed, and discusses future implications.

■ Panel: Impacts and challenges encountered; management of stakeholder and public outreach; adaptive strategies that have been used to minimize/avoid impacts (i.e. voluntary conservation activities); potential legal outcomes and future implications. Kevin Rein, Colorado Division of Water Resources; Molly Magnuson, New Mexico Office of the State Engineer; Kelsey Collins, Washington Department of Ecology.

Session 6: How Drought Initiates Institutional, Policy, Regulatory Change

State drought response and mitigation plans have been activated and tested over the past five years. Opportunities and limitations posed by existing institutional and policy frameworks to cope with and mitigate for drought and water

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supply shortages have been revealed. This session explored innovations in these frameworks that have come about as a result of the drought in the West. Discussion focused on the role drought has had in driving innovative policies in the following areas:
■ Wildland Fire: Tim Brown, Western Regional Climate Center; Desert Research Institute; Melissa Lineberger, Center of Excellence for Advanced Technology Aerial Firefighting
■ Fisheries: Teresa Scott, Washington Department of Fish and Wildlife
■ Water Efficiency: Kevin Reidy, Colorado Water Conservation Board; Jon Culp, Washington State Conservation Commission
■ Groundwater: David Gutierrez, California Department of Water Resources

Session 7: Drought Tools and Simulations to Inform Planning

NDMC's Drought Risk Atlas puts an ongoing drought into context with an area's drought history, thereby helping the user visualize and assess risk related to drought. Drought simulations and tabletop exercises have been used to test drought plans, identifying possible gaps and trade-offs in terms of response and mitigation actions.
■ Drought Risk Atlas: Mark Svoboda, NDMC
■ New Drought Plan Analysis Tool: Kelly Smith, NDMC
■ Drought simulations, roles and importance of using them in planning, and communicating lessons learned: Courtney Black, NIDIS; Taryn Finnessey, Colorado Water Conservation Board; Jim Reese, Secretary of Agriculture, State of Oklahoma
■ Group discussion: What additional tools and resources do state coordinators want and need?

Session 8: Drought Mitigation Planning and Funding

Three major components of an effective Drought Plan include mitigation, response and vulnerability assessment. Optimal statewide mitigation planning coordinates the efforts of state agencies and organizations, and local jurisdictions. The Disaster Mitigation Act of 2000 and FEMA-associated guidance for state hazard mitigation plans lays out this important planning process. Adequate funding sources are necessary to support such planning processes, as well as the flexibility to leverage them.

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data enabling them to compare current conditions to past events and help identify potential actions needed to reduce impacts and future risk.

- ✦ Colorado, Iowa, Oklahoma and Texas have used drought simulations (similar to FEMA table-top disaster exercises) as interactive activities to educate decision makers on the multidisciplinary impacts of drought and to help develop awareness of the factors driving their own decisions.
- ✦ South Dakota completed a vulnerability assessment and will incorporate it into their drought plan.
- ✦ Colorado completed the nation's first qualitative and quantitative drought vulnerability assessment, providing insight into existing knowledge gaps. The assessment is included in the state's drought plan, and has helped the state better direct available resources.

Federal Resources for Planning and Mitigation

A panel of federal agency representatives discussed tools, resources, and funding available from their respective agencies to support drought mitigation planning and adaptation.

Kenneth Murphy, Regional Administrator for the FEMA Region X (AK, ID, OR, and WA) said that FEMA's authorizing legislation, the Stafford Disaster Relief and Emergency Assistance Act, was designed for immediate threats to life, health and safety, making it difficult for FEMA to provide assistance for long-term events like drought. Under a new initiative in 2016, FEMA plans to investigate and evaluate opportunities to incorporate drought into its pre-disaster mitigation programs.

- ✦ The BOR reconfigured its Drought Response Program to support pre-drought planning and mitigation by providing financial assistance for developing and updating drought contingency plans and implementing resiliency projects.
- ✦ BOR's WaterSMART Program awards grants for projects that conserve and use water more efficiently, increase the use of renewable energy or increase energy efficiency in water management or delivery.
- ✦ The Environmental Protections Agency's (EPA) WaterSense program provides technical specifications, best management practices, and outreach and marketing tools to its partners in support of creating and promoting water-efficient plumbing products, buildings and practices.
- ✦ EPA developed resources to assist water utilities in preparing for and responding to drought. A new "Drought Response and Recovery Guide" was expected to be available Fall 2015.

Next Steps and Priority Actions

NOTE: Next Steps resulting from the Western States Drought Coordinators and Emergency Managers Meeting do not necessarily represent official policies or positions of the individual organizations represented at the Meeting.

The following topics were identified in discussions and post-meeting evaluations as priority areas for western U.S. DEWS and continuing NIDIS's

THE MEETING

More than sixty participants from throughout the West attended the two-day meeting. NIDIS photo.

partnerships with the states, tribes, and local governments and their drought coordinators:

Build a Network of Drought Professionals:

The Meeting provided a networking opportunity for state-level decision makers to learn from their peers and explore different ways of handling similar issues. These connections can help to improve how participants handle future transboundary events. Participants expressed their desire to maintain and expand this network of local, state, tribal and federal drought professionals through future meetings and virtual collaboration tools.

- ✦ NIDIS will use its "Engaging Preparedness Communities" working group to explore holding similar meetings of state drought coordinators and emergency managers at the national and regional levels.

Enhance Drought Mitigation and Planning:

Understanding how current conditions compare to past events can help bridge the gap between monitoring and prediction with early warning and preparedness. Efforts should be made to improve access to relevant science and information and build the capacity of decision makers to use that science.

- ✦ NIDIS, WGA and NDMC will continue to support the integration and operationalization of the latest research and tools into NIDIS DEWS and other regional, state, and local level planning and monitoring activities.
- ✦ NDMC will continue to build a robust web-based clearinghouse for

Session 8, continued from previous page

- ■ Benefits of linking local and state-level planning: Kelly Smith, NDMC
- ■ FEMA technical resources for linking statewide drought plans with natural multi-hazard mitigation plans: Ken Murphy, FEMA Region 10
- ■ How to incorporate vulnerability assessments in statewide drought planning: Taryn Finnessey, Colorado Water Conservation Board; Mark Rath, South Dakota Department of Environment and Natural Resources
- ■ Available federal resources for drought planning, mitigation and response funding: Owen Walker, U.S. Bureau of Reclamation; Alicia Marrs, NIDIS

The "bathtub ring' around Lake Mead shows previous water levels, illustrating its loss of water volume as of March 29, 2015.
Photo by Kelly Redmond/DRI

PRESENTATIONS FROM THE EVENT

Links to slide decks from panelists and presenters are here:

http://www.drought.gov/drought/news/western-states-drought-coordinators-and-emergency-managers-meeting-2015

drought planning resources and tools.

- ✦ NIDIS and BOR should coordinate to identify funding opportunities to support the development of state and local drought simulations and plans.
- ✦ NIDIS, BOR, FEMA and other federal and state agencies should coordinate to identify potential funding mechanisms to support the development of state level vulnerability and risk assessments.
- ✦ FEMA will examine ways drought can be better integrated into its existing pre-disaster mitigation programs.

Improve Drought Communication:

Drought outreach can be difficult when water users in the same media market or region are experiencing drought in different ways, but decision makers may still need the public to take mitigating actions to help those most severely impacted. Many participants at the meeting expressed a desire for improved and better coordinated drought messaging at the state and regional levels.

- ✦ Drought professionals can leverage federal and state resources (financial and technical) to support the creation of state or region-wide drought outreach and messaging campaigns.
- ✦ NOAA/NIDIS will work with states to develop communication strategies that improve the understanding of ENSO.
- ✦ NIDIS will solicit input from state and federal partners to tailor regional and national drought communications via the U.S. Drought Portal (drought.gov).
- ✦ NIDIS will continue to develop drought.gov as the primary information portal for national drought information.

Improve Monitoring of Drought Conditions and Impacts:

Establishing and recognizing drought indicators and monitoring are key to early detection of and response to drought. The Meeting highlighted new and innovative tools and products that are being operationalized to assist in drought monitoring and impact reporting. Some of these tools are being tested and utilized in NIDIS DEWS and other forums to give stakeholders access to innovative technology and research, and the research community the opportunity for real-time feedback from users. Further efforts should be made to continue to support drought research, the subsequent development and improvement of drought indicators, response and management triggers, tools and resources, and their integration into NIDIS DEWS and other decision-making frameworks.

✦ Federal and state agencies will continue to support research to improve monitoring and the understanding and relevance of drought impacts to inform decisions for response, mitigation and long-term adaptation.

✦ NIDIS will continue to expand the use of the DEWS as a testing ground for new indicators and monitoring approaches.

✦ NDMC will investigate how state, tribal, local and federal agencies, media, and public stakeholders are using the U.S. Drought Monitor. Areas to be investigated include, but are not limited to:

- States and other federal agencies will work in cooperation with NIDIS and NDMC to enhance the U.S. Drought Monitor community.
- How are decision makers using the U.S. Drought Monitor?
- What is the impact of U.S. Drought Monitor designations on drought relief funding?

RESOURCES

The U.S. Drought Portal	http://www.drought.gov/drought/
The National Integrated Drought Information System	http://www.drought.gov/drought/
National Drought Mitigation Center	http://drought.unl.edu/
Western Governors Association Drought Forum	http://www.westgov.org/component/content/category/320-drought-forum
State of Washington Department of Ecology	http://www.ecy.wa.gov/
Northwest River Forecast Center	http://www.nwrfc.noaa.gov/rfc/
Desert Research Institute	http://www.dri.edu/
California Department of Water Resources	http://www.water.ca.gov/
Oregon Climate Change Research Institute	http://occri.net/
National Weather Service Climate Prediction Center	http://www.cpc.ncep.noaa.gov/
Colorado Climate Center	http://climate.atmos.colostate.edu/
Arizona Department of Water Resources	http://www.azwater.gov/azdwr/
Idaho Department of Water Resources	https://www.idwr.idaho.gov/
Carolinas Integrated Sciences & Assessments	http://www.cisa.sc.edu/
Oregon Water Resources Department	http://www.oregon.gov/OWRD/pages/index.aspx
Alaska State Climate Center	http://climate.uaa.alaska.edu/
South Dakota Department of Environment and Natural Resources	http://denr.sd.gov/
Western Regional Climate Center	http://www.wrcc.dri.edu/
Colorado Water Conservation Board	http://cwcb.state.co.us/Pages/CWCBHome.aspx
Colorado Division of Water Resources	http://water.state.co.us/Home/Pages/default.aspx
Nebraska Department of Natural Resources	http://www.dnr.nebraska.gov/
Southern Climate Impacts Planning Program	http://www.southernclimate.org/
Utah Division of Water Resources	http://www.water.utah.gov/
USDA Natural Resources Conservation Service	http://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/
NRCS Snow Survey and Water Supply	http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/water/snowsurvey/

Attendees

Aber, Jess	State of Montana DNRC
Anderson, Mark	Washington Department of Commerce
Bellon, Maia	Washington Department of Ecology
Berghoff, Kevin	NWS/Northwest River Forecast Center
Black, Courtney	NOAA/NIDIS
Bogan, Kathy	NOAA/NIDIS
Bond, Nicholas	University of Washington
Bower, Brent	NOAA
Brown, Carlee	Western Governors' Association
Brown, Timothy	Desert Research Institute
Collins, Kelsey	Washington Department of Ecology
Croyle, Bill	California Department of Water Resources
Culp, Jon	Washington State Conservation Commission
Curry, Tina	California Office of Emergency Services
Deheza, Veva	NOAA/NIDIS
Dello, Kathie	Oregon Climate Change Research Institute
DeWitt, David	Climate Prediction Center/NWS
Doesken, Nolan	Colorado Climate Center
Everett, Aaron	Washington Department of Natural Resources
Evetts, David	USGS/Idaho Water Science Center
Finnessey, Taryn	Colorado Water Conservation Board
Gutierrez, David	California Departmentof Water Resources
Hancock, Jaclyn	Washington State Department of Agriculture
Hayes, Corina	Washington Department of Health - Office of Drinking Water
Henenson, Einav	Arizona Deptartment of Water Resources
Hoekema, David	Idaho Department of Water Resources
Intermill, Joe	National Weather Service - Northwest River Forecast Center
Jones, Jeanine	California Department of Water Resources
Kaplan, Alysha	Washington Military Department's Emergency Management Division
Knapp, Mary	Kansas State University, Dept. of Agronomy
Knowles, Diane	Kansas Water Office
Kriz-Wickham, Bobbie	Nebraska Department of Agriculture
Lackstrom, Kirsten	Carolinas Integrated Sciences & Assessments
Lineberger, Melissa	Colorado Center of Excellence for Advanced Technology Aerial Firefighting
Lucido, Jessica	USGS
Magnuson, Molly	New Mexico Office of the State Engineer
Marrs, Alicia	NOAA/NIDIS
Marti, Jeff	Washington Department of Ecology
McNutt, Chad	NOAA
Mucken, Alyssa	Oregon Water Resources Department
Munn, Mark	USGS
Murphy, Kenneth	FEMA
Nielsen-Gammon, John	Texas A&M University
Norris, Rachael	FEMA
Olsson, Peter	Alaska State Climate Center/ U of Alaska
Quinn, Loretta	UCAR
Rath, Mark	South Dakota Department of Environment and Natural Resources
Redmond, Kelly	Desert Research Institute / Western Regional Climate Center
Reese, James	Oklahoma Department of Agriculture, Food & Forestry
Reidy, Kevin	Colorado Water Conservation Board
Rein, Kevin	Colorado Division of Water Resources
Schellpeper, Jennifer	Nebraska Department of Natural Resources
Scott, Teresa	Washington Department of Fish and Wildlife
Seville, Steve	ICF International
Shafer, Mark	Southern Climate Impacts Planning Program
Smith, Kelly	National Drought Mitigation Center
Spindler, Dana	ICF International
Stern, Ginny	Washington Department of Health
Stonely, Todd	Utah Division of Water Resources
Strobel, Michael	USDA/NRCS
Svoboda, Mark	National Drought Mitigation Center
Van Heeswijk, Marijke	USGS
Vann, Timi	NOAA
Walker, Owen	U.S. Bureau of Reclamation
Werner, Kevin	NOAA
Willardson, Tony	Western States Water Council