Building U.S. national capabilities for long-term drought resilience: The National Drought Resilience Partnership

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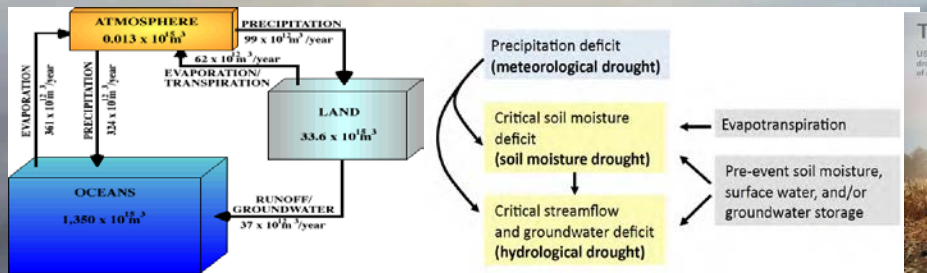
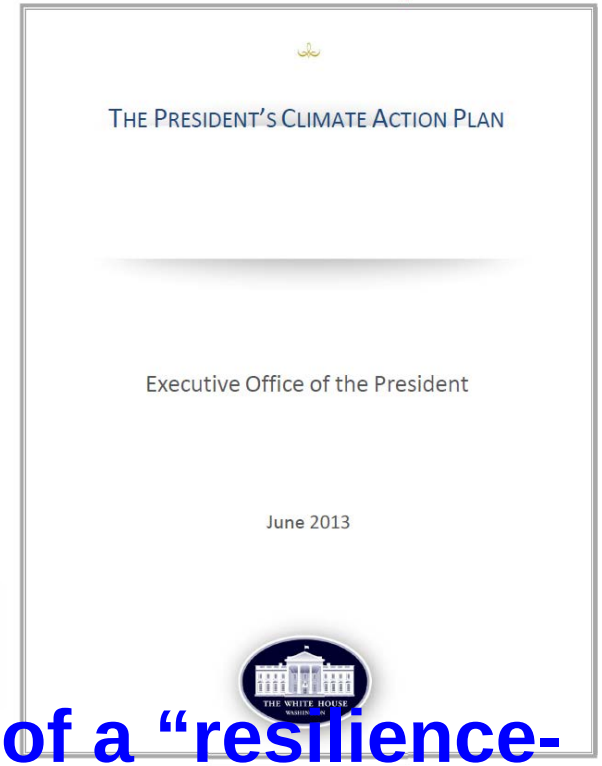
Co-chair National Integrated Drought Information System Council. NOAA
(and a lot of of other people!)



"Today, I signed the National Integrated Drought Information System Reauthorization Act into law…. ***to help communities better prepare for droughts in the long term, and prevent the worst impacts on families and businesses"*** ***<u>March 6, 2014.</u> President Obama***

"To complement the NIDIS, as part of my Climate Action Plan, federal agencies have also formed a National Drought Resilience Partnership to help communities better prepare for droughts in the long term, and prevent the worst impacts on families and businesses"

Barack Obama



What has influenced the creation of a "resilience-based approach?

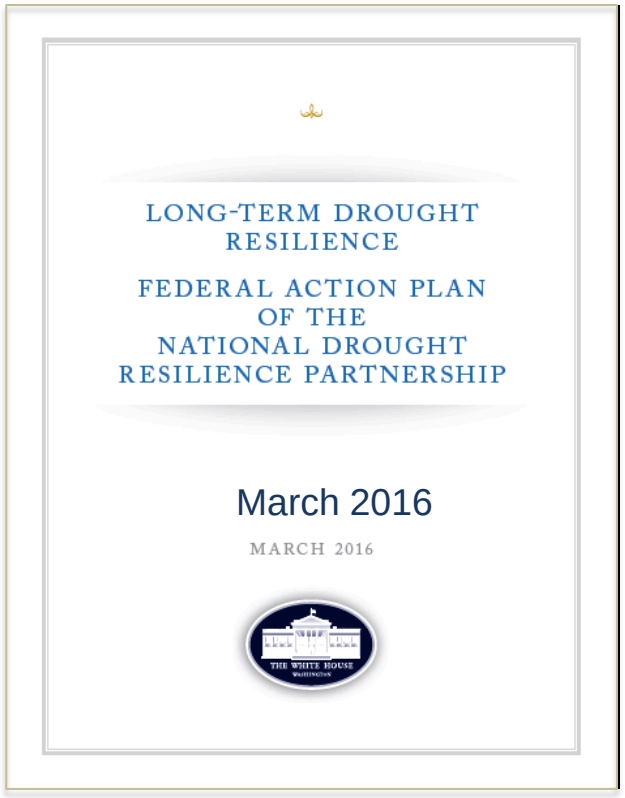
What is the message……..
……..in the context of a changing climate?

- Despite advances to date, predicting the future hydro-
  precisely will remain a major challenge

Factoring in Resiliency in water resources system's design and planning is still the safest approach!

- ***Long-term and***
  critical, especially for model
  some degree of verifiability, hard to expect the

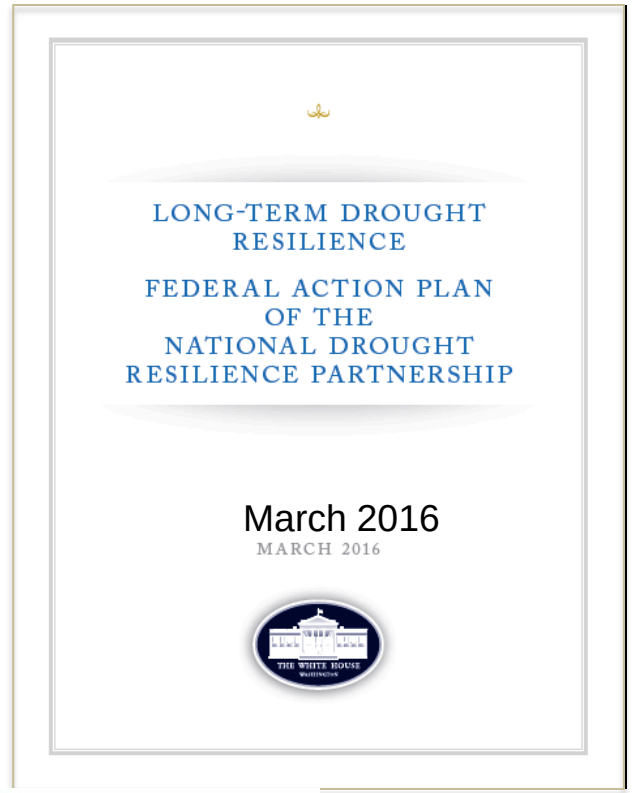
Sorooshian and others…..



March 21, 2016. President Obama signed a Presidential Memorandum directing Federal agencies to build national capabilities for long-term drought resilience

The President tasked the National Drought Resilience Partnership (NDRP) to work collaboratively to deliver on a Federal Action Plan including six goals and 27 associated actions to promote drought resilience nationwide.

……to complement state, regional, tribal and local drought preparedness, planning and implementation efforts.



National Drought Resilience Partnership Goals

Goal 1: Data Collection and Integration – key data platforms, modeling and prediction

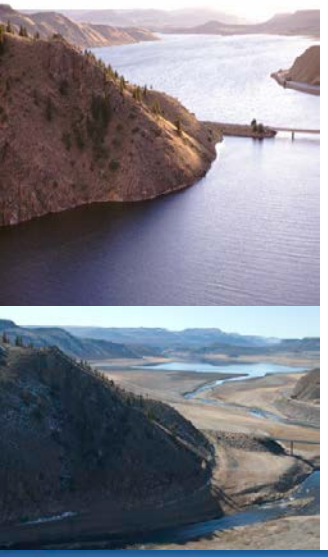
Goal 2: Communicating "Drought Risk on Critical Infrastructure"

Goal 3: Drought Planning and Capacity Building

Goal 4: Coordination of Federal Drought Activity

Goal 5: Market-Based Approaches for Infrastructure and Efficiency

Goal 6: Innovative Water Use, Efficiency, and Technology



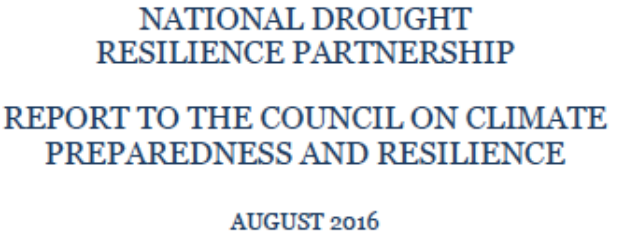
National Drought Resilience Partnership

On March 21, 2016, President Obama signed a **Presidential Memorandum** directing Federal agencies to build national capabilities for long-term drought resilience. The President tasked the National Drought Resilience Partnership (NDRP) to work collaboratively to deliver on a **Federal Action Plan** including six goals and 27 associated actions to promote drought resilience nationwide. Importantly, these goals reflect many of the priorities identified by the on-the-ground leaders and experts who work daily to build a more resilient future for their communities. The actions are designed to complement state, regional, tribal and local drought preparedness, planning and implementation efforts.

The Memorandum and the Action Plan elucidate the role of the NDRP, a team of federal agencies, in helping communities manage the impact of drought by linking information, such as forecasts and early warnings, with drought preparedness strategies in critical sectors like agriculture, municipal water systems, tourism and transportation.

REPORT HIGHLIGHTS FEDERAL DROUGHT RESILIENCE ACTIVITIES THROUGH AUGUST 2016

The **Report to the Council on Climate Preparedness and Resilience**, published August 31, 2016, highlights accomplishments to date against the President's Action Plan and provides an overview of some of the Administration's work on drought response since 2009. It is the first of what will be regular updates on the NDRP's commitment to work across federal agencies to deliver on-the-ground results.



https://www.drought.gov/drought/what-nidis/national-drought-resilience-partnership

https://www.drought.gov/drought/documents/national-drought-resilience-partnership-report-council-climate-preparedness-and-resilience

Drought Risk Management Research Center:
June 2015, NOAA/NIDIS announced the creation of the Drought Risk Management Research Center (DRMRC) at the National Drought Mitigation Center (NDMC) at the University of Nebraska-Lincoln.

USDA and NASA Innovative Partnership:
USDA and NASA are partnering to protect America's working lands and inspire young people to pursue STEM and agriculture careers.

California Headwaters Partnership:
USDA, DOI, NOAA and the state of California created a partnership to invest in forest restoration and headwater protection in the Sierra-Cascade headwater region. (Sierra-Cascade watersheds provide drinking water almost two-thirds of the California population, and the majority of water for irrigated agriculture)

Goal 4: Coordination of Federal Drought Activity

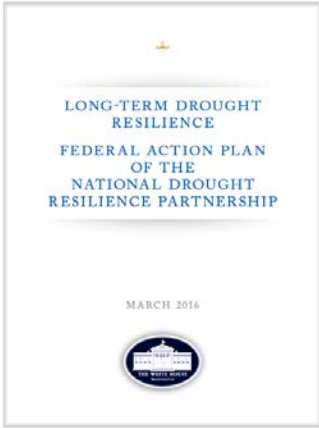
Actions:

- ***Drive Coordination and Sharing of Information Related to Federal Investments in Water Infrastructure***

  Extend Best Practices of USDA EQIP, DOI-Bureau of Reclamation WATERSMART and Water Census

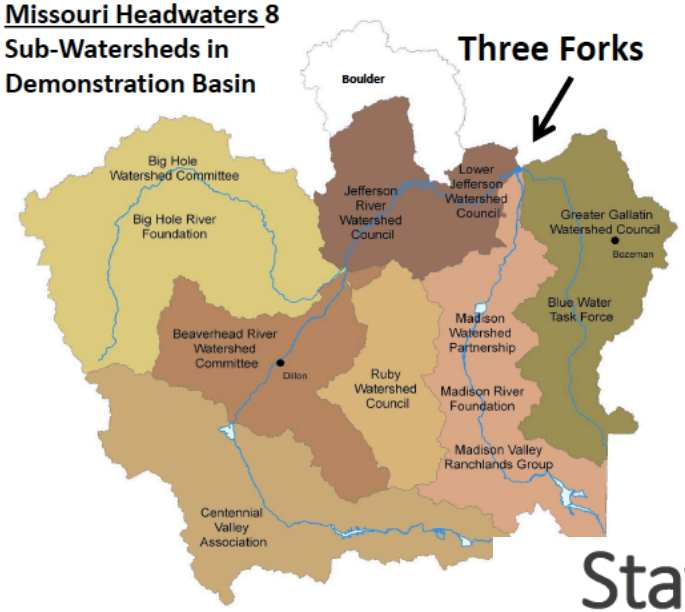
- ***Launch a Competition Challenge/Prize***
  Incentivize new technologies or scale up existing methods of water-use innovation

Develop a Federal pilot on interagency coordination



NDRP Demonstration Project

Missouri Headwaters 8 Sub-Watersheds in Demonstration Basin



This area selected by DNRC for the Demonstration Project

State has a number of outreach and drought related activities ongoing in these watersheds

Workplan Gc

1. Provide Tools for Drought
2. Develop Local and Regiona
3. Implement Local Projects

State and Federal Partners

- FEMA
- NOAA-NIDIS
- Office of Climate Change Policy
- BOR
- US Fish and Wildlife
- EPA
- BIA
- NRCS
- USFS
- BLM
- MT DEQ
- MT DNRC
- MT FWP
- MACD
- Center for Large Landscape
- Great Northern Landscape Conservation Cooperative
- Big Sky Watershed Corps

Challenges/ Opportunities

Challenges:

- Basin mostly closed to new surface water appropriations
- Persistent drought
- Large mostly rural landscape
- Rapid growth and changing land use
- Improved real time measurement
- Data integration and resolution

Opportunities and Partnerships:

- Strong core of Watershed groups and Conservation Districts
- Big Sky Watershed Corps/capacity
- State agencies, Basin water planning and water quality
- Great interest in the area

Goal 6 Action 7
NDRP International:Maximize Use of Existing Diplomatic Engagement Structures to Advance International Drought-Related Research and Collaboration

- Engage with key countries and multilateral institutions to share best practices and research on drought-technical exchanges, and/or joint research

- Initial bilateral engagement under the auspices of the Joint Commissions on Science and Technology.

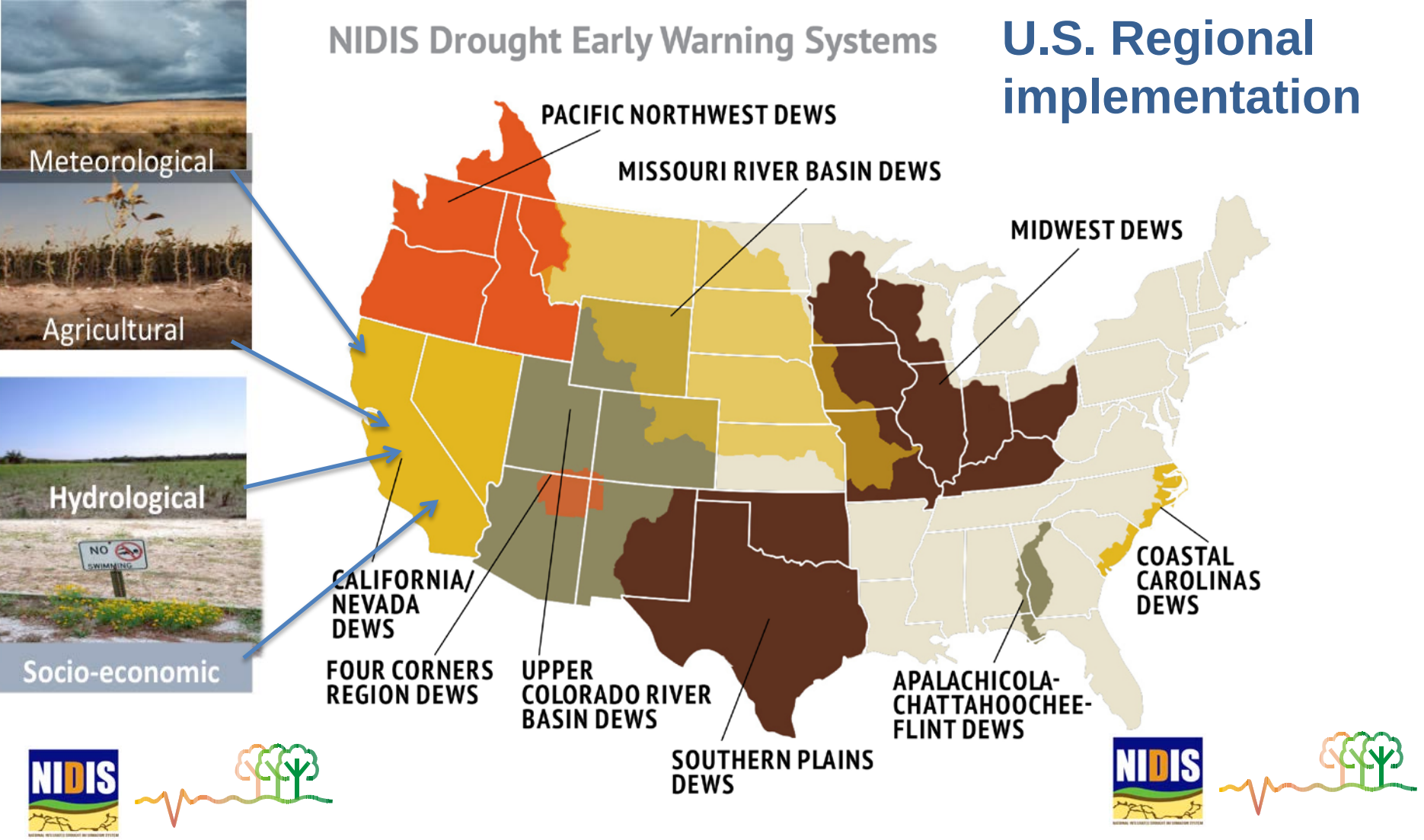
- Share with relevant experts through existing platforms such as the U.S. Water Partnership, the Global Water Research Coalition, and the National Integrated Drought Information System.

Focus on a subset of selected key watersheds and/or regions where the IDMP and IHP, among others, have been engaged, such as:

- Murray-Darling River Basin (Australia)
- Eastern Mediterranean Region
- South Africa
- Iberian Peninsula: Spain and Portugal
- Nile River Basin
- Mekong River Basin
- Parana-Paraguay watershed (Southern South America)

Foster linkages between drought and disaster risk reduction with long term planning, adaptation, and resilience through supporting integrated approaches in drying climates……

IDMP, (UNESCO-IHP), other relevant multilateral organizations, and pre-existing bilateral Science and Technology and other agreements,



Governance Attributes: Agility, Alignment, Adaptability

Network coordination, **Integrated Information** (monitoring/forecasting, risk assessment/gaming scenarios),
Drought risk management (capacity, outlook fora and planning)

Challenge:

Sustaining collaborative networks across research, observations, services and decision-making

Thank you!

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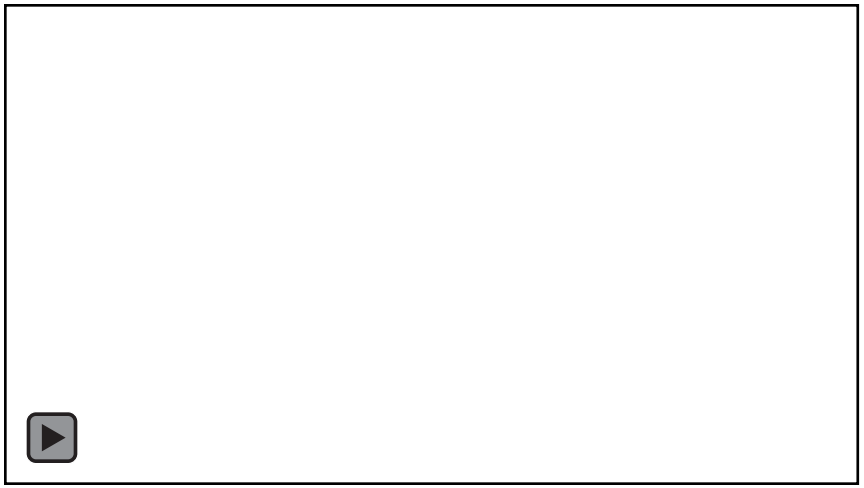

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Indigenous Knowledge Fighting Drought in South Africa

Are we better off? NIDIS goals

- The number of states, communities, and institutions with improved capacity to inform risk management and reduce exposure to climatic risks (compared to previous droughts)

- The number of staff in or working with those institutions trained to develop and communicate local drought information and help reduce impacts

- The number of research-based projects that conduct and update drought impacts and user needs assessments in drought-sensitive parts of the US and communicate the results to the public