

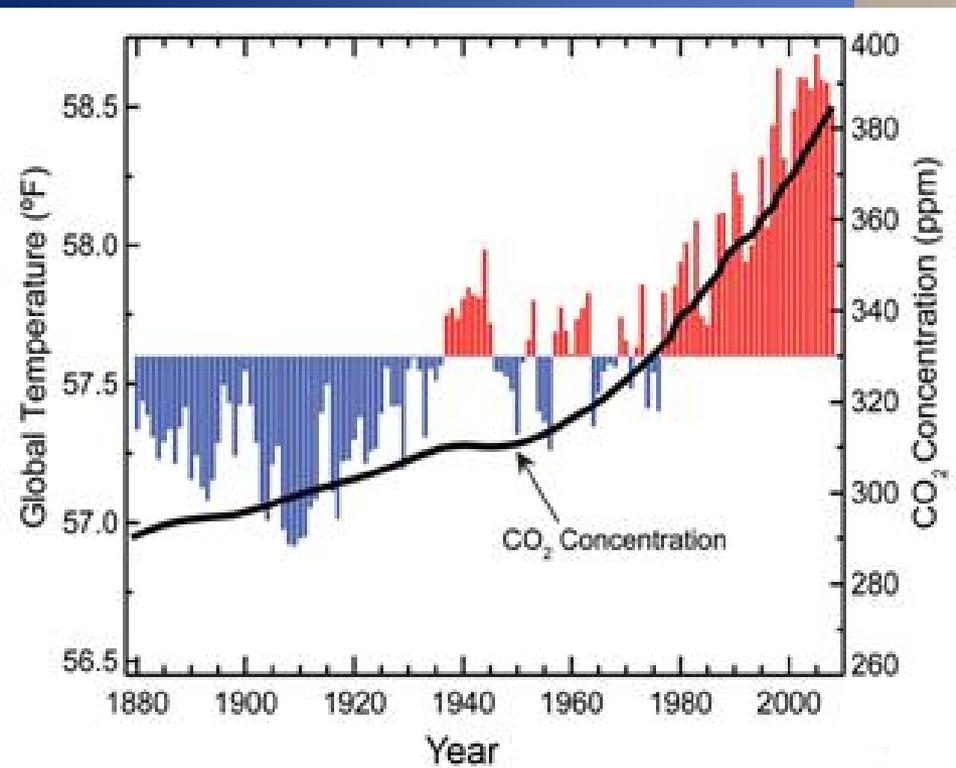
**National Action Plan:
Priorities for Managing Freshwater
Resources in a Changing Climate**

Proposed Update

**Presented to ACWI Subcommittee on Water
Resources Adaptation to Climate Change**

June 16, 2016

The climate is changing



- More variable weather patterns
- Extreme heat
- Intense storms
- Flooding
- Drought

Impacts on Water Resources

- ❖ Air and water temperatures increase
- ❖ Rainfall amounts decline in some areas and increase in other areas
- ❖ Declining portion of precipitation falling as snow
- ❖ Rainfall/storm events more intense
- ❖ Sea level rise and threats to coastal areas
- ❖ Changes to coastal and ocean waters

Historical Timeline: Priorities for Managing Freshwater Resources in a Changing Climate

- 2009 Executive Order establishes the *Interagency Adaptation Task Force*
- 2010 Water Workgroup formed
- 2011 National Action Plan (NAP) published
- 2012, 2013, 2014 Progress reports
- 2013 President's Climate Action Plan and Executive Order establishes the *Climate Preparedness and Resilience Council (CPRC)*

Recent Developments informing the 'Refresh'

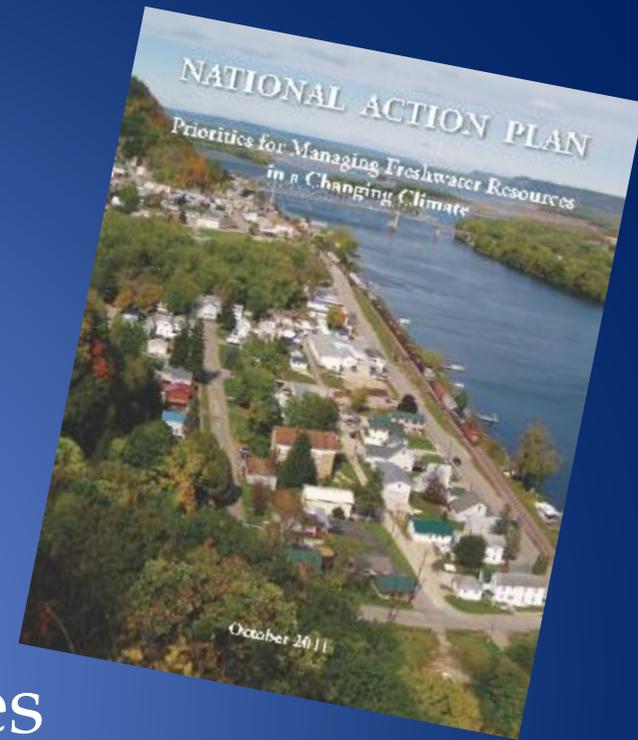
- 2013 Advisory Committee on Water Information (ACWI) establishes a Climate Subcommittee
 - *'Next Steps'* report to the Water Workgroup
- 2014 State, Local, and Tribal Leaders Task Force recommendations
- 2014 President's Climate and Natural Resources Workgroup *Priority Agenda*
- 2015 Public Listening Session

Other National Forums

- DOI Landscape Conservation Cooperatives
- DOI Climate Science Centers
- NOAA Regional Integrated Science Assessments (RISAs)
- USDA Climate Hubs
- Fish, Wildlife and Plants Climate Change Strategy
- National Ocean Policy climate chapter

Progress

- Most activities identified in 2011 NAP have been done
- Agencies undertaken a wide variety of new activities
 - Catalogued in annual progress reports
- Time to take stock and identify focus areas for this workgroup



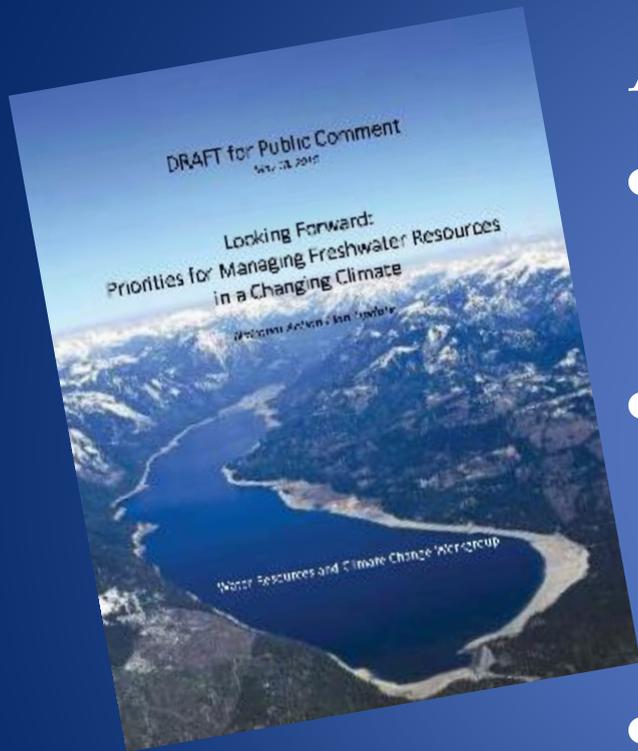
Highlights of Progress

- Vulnerability Assessments:
 - EPA Climate Ready Water Utilities CREAT software and technical assistance
 - US Forest Service Roadmap
- Training:
 - Bureau of Reclamation, Army Corps of Engineers, UCAR incorporating climate science into hydrologic assessments
 - NOAA monthly webinars “Climate Information for Managing Risks in Water Resources”
 - Fish and Wildlife Service climate training for conservation professionals

Highlights (continued)

- Data Availability:
 - CDC expanded waterborne disease reporting
 - DOI National Groundwater Network
 - NOAA Coastal LIDAR mapping
- Planning and Decision Support
 - EPA WaterSense
 - DOI WaterSmart
 - USGS: Advisory Committee on Water Information
 - Army Corps Integrated Water Resources Management pilots

2016 NAP Update



Approach:

- Streamlined, targeted, 'refreshed'
- Include only actions to fill a gap or to support a particular critical activity
- Not a catalogue of all climate and water-related adaptation activities in the Federal Government

2016 NAP Update

Four chapters:

1. Data and Research

- 4 Recommendations; 10 Strategic Actions

2. Planning and Decision Support

- 2 Recommendations; 8 Strategic Actions

3. Training and Outreach

- 2 Recommendations; 8 Strategic Actions

4. Workgroup Management

- 1 Recommendation; 2 Strategic Actions

Data and Research Team

Julie Kiang, USGS, Chair

Jeff Arnold, USACE

Veronica Blette, EPA

Levi Brekke, BuRec

Joan Brunkard, CDC

Jared Entin, NASA

Mike Strobel, NRCS

David Wells, EPA

Kate White, USACE

Scope

Data and Science to evaluate and forecast climate change impacts.



Challenges

More data and science and greater certainty is always wanted

How to understand changing trends and how to use future projections are both a subject of study

There will always be a certain amount of uncertainty – how to manage risk

Moving Forward

1. Sustain and expand existing monitoring and data networks
2. Modernize statistical analyses of historical records to understand *nonstationary* trends
3. Improve access to future projections
4. Manage risk to water supply – R&D on innovative technologies

1. Sustain existing monitoring networks

- ID and address data gaps
- Expand reference monitoring networks

2. Modernize statistical analyses

- Precipitation, Flood Frequency, Streamflow

3. Improve access to future projections

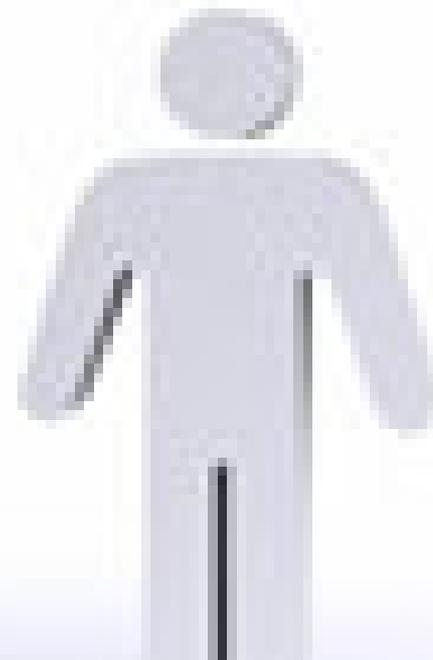
- Guidance on use of water-related projections
- Evaluate future water temperatures
- Evaluate integrating hydrology and land use

4. Water supply innovative technologies

- Invest in energy-water technologies
- Improve water efficiency in Agriculture



**Questions: Data
and Research**



Planning and Decision Support Team

Rachel Grandpre, ACoE, Chair

Kate White, ACoE

Nancy Beller-Simms, NOAA

Karen Metchis, EPA

Mark Kodak, DOD

Laura Montoya, DOD

Richard Volk, USAID

Curt Baranowski, EPA

Scope

Information, tools, and guidance that support planners, policy makers, and decision makers to manage freshwater resources in a changing climate



Challenges

- Decision makers may not know how to find/understand/correctly select/use the existing tools
- There are lots of tools out there and it can be overwhelming
- Agencies need to improve the curation of tools
- Guidance on use of downscaling AND decision processes that understand and embrace uncertainty

Moving Forward on Planning and Decision Support

1. Advance regional coordination among federal agencies
2. Develop guidance on use of climate change information and provide tools for assessing vulnerability and building resilience

1. Advance regional coordination

- New Federal Agency Support Teams (X-FAST)
- Expand engagement in regional cooperatives.
- Incorporate supply chain/water vulnerability
- Case studies on restoring resilient wetlands

2. Guidance on assessing vulnerability

- Online dashboard for water information
- Streamline access in Climate Resilience Toolkit.
- Advance peer-to-peer learning.
- Improve guidance on using downscaled projections
- Evaluate use of FEMA Community Rating System to manage flooding

Questions: Planning and Decision Support



Training and Outreach Team

Nancy Beller-Simms, NOAA, Chair

Levi Brekke, BuRec

David Levinson, USFS

Karen Metchis, EPA

Jeff Peterson, EPA

Challenges

- Different levels of training are needed for various types of users.
- Diversity of skill levels and preferences

Moving Forward on Training and Outreach

1. U.S. Climate Resilience Toolkit – Water Theme
2. Climate Change and Water Working Group Professional Development Series



1. U.S. Climate Resilience Toolkit – Water

- Learning progressions
- New training opportunities
- Technical expertise available on request
- Stakeholder partnerships to improve delivery of training and ID needs.
- Outreach to expand awareness of the Toolkit

2. Climate Change and Water Working Group Professional Development Series

- Add new content
- ID gaps and broaden offerings.
- Sustain series and expand the student base

Questions: Training & Outreach



Workgroup Management And Coordination

- Maintain continuity of interagency collaboration and leadership among
 - Rotate workgroup leadership among member agencies
 - Strengthen Workgroup staffing



Your Comments and Discussion



Reiteration: Next Steps

- Public comments due July 15, 2016 to:
Water_Climate_Change@epa.gov



- Anticipate final NAP by Fall 2016
- Will be posted on ACWI web site

<http://acwi.gov/>

Thank you for Participating!

- Army Corps of Engineers
- Centers for Disease Control and Prevention
- Department of Agriculture
- Department of Energy
- Environmental Protection Agency
- National Aeronautics and Space Administration
- U.S. Geological Survey
- Bureau of Reclamation
- Council on Environmental Quality
- Department of the Army
- Department of the Interior
- Forest Service
- National Oceanic and Atmospheric Administration