

Federal Climate Action Plan Review

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Overview

On January 28, 2021, as directed by President Biden's Executive Order 14008, all major Federal agencies were required to develop an adaptation and resilience plan addressing their most significant climate risks and vulnerabilities. More than 20 Federal Agency Climate Adaptation and Resilience Plans were released by the Whitehouse on October 7, 2021. On December 8, 2021, President Biden's Executive Order 14057 and accompanying Federal Sustainability Plan, outlined how agencies will implement the actions identified in the Federal Climate Action Plans (CAPs).

The agency plans identify the biggest threats climate change poses to their operations and facilities, as well as identify how the agencies could handle these threats. A review of the CAPs reveals a number of recurring themes found throughout them. A closer look into these broader themes, resulted in several strategies that the agencies similarly plan to utilize. Implementing these strategies do not come without their challenges. These practical reports acknowledge the large amount of work to be done to achieve a higher level of climate change preparedness. The Interstate Council on Water Policy (ICWP) community should be aware of the resources highlighted in the CAPs that are available to support this body of work.



Recurring Themes

Throughout the CAPs there are six recurring themes that are present in many of the agency plans. These overarching themes are persistent through the plans. Though they are general

enough to apply to numerous Federal agencies, they are all key in supporting the work to become adaptive in the face of climate change. The recurring themes of the federal CAPs are as follows:

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- Promote climate resilient lands, water and cultural resources
 - Provide actionable data, information tools and projections
 - Promote climate adaptation and readiness through grants and other economic development programs
 - Foster and enhance the resilience of vulnerable communities as they will be most effected by climate change
 - Modernize existing and build new critical infrastructure to be “climate ready”
 - Increase “climate literacy” of the workforce and the stakeholders they serve

Strategies

In addition to the recurring themes throughout the CAPs there are five strategies that were common to all the plans. These common strategies are the base upon which more agency specific actions are built. They are the integral actions needed for success in the implementation of the climate action plans at large. The first strategy is to plan, prioritize and implement resilient solutions. Second, institutionalize climate adaptation across policies, directives, and processes. Climate adaptation must be integrated into all operations of Federal agencies. The third strategy is to provide and enhance climate adaptation tools, technical support, and climate science information. These tools must be comprehensive and accessible to their intended users. Fourth, advance climate equity by supporting tribal, insular, and underserved community resilience. There is a profound focus on this pivotal strategy. Climate adaption will only be successful if all communities are supported. The last common strategy found throughout the CAPs is to train and empower conservation and resilience workers. This includes educating the next generations as well as creating a climate literacy among the current workforces.

Challenges

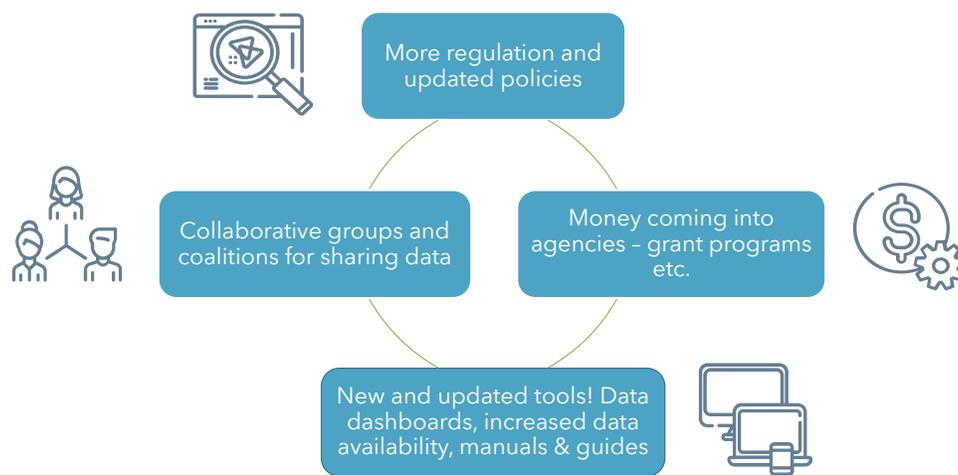
Though the strategies presented in the CAPs are a solid foundation upon which the agencies can build their resilience, they do not come without their challenges. Due to the number of agencies operating separately with their own objectives, but all with the common goal of climate resilience, there is a strong need for cooperation-cooperation among states, agencies, as well as between federal, local, and state governments. Avoiding duplicated efforts and maximizing the reach of research done and data collected will be most successful with full communication and cooperation among these groups. Incorporating the data available for science-based decision making is essential as is the need for meaningful engagement strategies of the communities the decision making is affecting. To accomplish the mammoth task of becoming a nation adaptive to climate change, staff available to carry out these goals is imperative. Funding has been identified to support the strategies recognized in the CAPs, but efficient use of this funding is crucial to success. Spending must be done thoughtfully. Rushing the allocation of funding can lead to inefficient use. Finally, the effects of climate change will continue to worsen and pose and increasingly greater challenges to the tasks at hand. Adaptive management must be present throughout this process.



Resources to Look Out For

Though the challenges to implementing the proposed objectives laid out in the CAPs are great, there are many resources available to overcome these challenges. Additionally, these same resources can be utilized by the ICWP community for climate change adaptation and management of water resources at many scales.

As climate adaptation preparedness has been set forth in these executive orders, there will be more regulation and updated policies embodying the action that must be taken. The ICWP community should be anticipating changes to regulation and policy affecting their area of practice. With these orders has come more allocation of funding to achieve these pursuits. There will be additional funding coming into numerous federal agencies, and therefore more opportunity for various organization, projects, programs, and municipalities to take advantage of these opportunities to propel climate preparedness at their level. Supporting the big steps that all parties must take to develop adaptive climate strategies many different resources available for the ICWP community to tap into. These resources include collaborative groups and networks for sharing data and case studies, as well as numerous updated tools, knowledge products, dashboards, manuals, and guides.



Below is a chart of the resources highlighted in the Federal climate action plans. There is a wealth of data available to water resource managers, and through these resource that data is available through multiple avenues and platforms. The interfaces at which the water resource management community access this data are becoming more user-friendly and have greater and greater capabilities. A look through these resources can provide useful new tools for adaptation to climate change.

Climate Action Plan Resources

Tools, Dashboards and Funding Opportunities Highlighted in the Federal Climate Action Plans

Resource Name	Affiliated Agency	Resource Type	Description	Link	Tools/Uses
The Aaptation Workbook	USDA	Knowledge Tool	The Adaptation Workbook is a climate change tool for land management and conservation, used to assess threats and document management choices to minimize climate change impacts to their operations. The workbook uses menus of adaptation strategies and approaches for forests, urban ecosystems, forested watershed and water resources management, agriculture and working lands, and recently published menus focusing on Tribal perspectives, forest carbon, and recreation. The workbook has been used to generate hundreds of adaptation demonstration projects using real-world examples of forest and farm management.	https://adaptationworkbook.org/	<ul style="list-style-type: none"> • Adaptation Workbook
(Southwest) Drought Learning Network (DLN)	USDA	Dashboard, Knowledge Tool, Collaboration Opportunity	Jointly developed by the Climate Hubs, NDMC, and NIDIS, and allows stakeholders to share experiences in preparing for, responding to, and recovering from drought. The Drought Learning Network is a peer-to-peer knowledge exchange between climate service providers and resource managers. The main goal of the DLN is to gather and share lessons learned from drought events to improve responses to future droughts. The DLN was conceptualized as a framework for stakeholders to share experiences in preparing for, responding to, and recovering from drought to inform current and future response and mitigation actions.	https://dln.swclimatehub.info/	<ul style="list-style-type: none"> • Ranch Drought Monitoring Dashboard: https://drought.unl.edu/ranchplan/Monitor.aspx • United State Drought Monitor: https://droughtmonitor.unl.edu/ • Grassland Productivity Forecast: https://grasscast.unl.edu/ • Drought Impacts Toolkit: https://droughtimpacts.unl.edu/ • Managing Drought Risk on the Ranch: https://drought.unl.edu/ranchplan/Overview.aspx • Community Collaborative Rain, Hail & Snow Network (CoCoRaHS): https://www.cocorahs.org/ • Vegetation Drought Response Index (VegDRI): https://veg dri.unl.edu/ • My RAINge Log: https://myrainge log.arizona.edu/
Better Assessment Science Integrating Point and Nonpoint Sources (BASINS)	EPA	Knowledge Tool	Better Assessment Science Integrating Point and Nonpoint Sources (BASINS) is a multipurpose environmental analysis system designed to help regional, state, and local agencies perform watershed- and water quality-based studies.	https://www.epa.gov/ceam/better-assessment-science-integrating-point-and-non-point-sources-basins	<ul style="list-style-type: none"> • BASINS watershed and water quality studies tool
Center for Exposure Assessment Modeling (CEAM)	EPA	Knowledge Tool	The EPA Center for Exposure Assessment Modeling (CEAM) provides proven predictive exposure assessment techniques for aquatic, terrestrial, and multimedia pathways for organic chemicals and metals.	https://www.epa.gov/ceam	<ul style="list-style-type: none"> • Groundwater Models • Surface Water Models • Food Chain Models • TMDL Models and Tools • Multimedia Model
Climate Change Resource Center (CCRC)	USDA, US Forest Service	Knowledge Tool, Dashboard	Online compendium of nearly 500 adaptation approaches with numerous associated examples.	https://www.fs.usda.gov/ccrc/	<ul style="list-style-type: none"> • Many! From erosion and water supply stress indices to climate change impact scenarios and fish passage learning: https://www.fs.usda.gov/ccrc/tools
Climate Change Water Working Group (CCAWWG)	USACE	Collaboration Opportunity	The federal Climate Change Water Working Group (CCAWWG) provides engineering and scientific collaborations in support of water management under a changing climate. It is an effective working-level forum that fosters communication and research partnerships around these needs across the water and science communities of practice.	https://www.usace.army.mil/corpsclimate/CCAWWG/about_ccawwg/	<ul style="list-style-type: none"> • Climate Change Water Working Group
Climate Hubs	Multiple	Collaboration Opportunity	USDA's Climate Hubs are a unique collaboration across the department's agencies. They are led and hosted by the Agricultural Research Service and Forest Service located at ten regional locations, with contributions from many agencies including the Natural Resources Conservation Service, Farm Service Agency, Animal and Plant Health Inspection Service, and the Risk Management Agency. The Climate Hubs link USDA research and program agencies in their regional delivery of timely and authoritative tools and information to agricultural producers and professionals.	https://www.climatehubs.usda.gov/	<ul style="list-style-type: none"> • Research and science information synthesis • Tool development, technology exchange, and implementation assistance • Stakeholder education, outreach, and engagement • National and regional governance
Disaster Risk Reduction Program	NASA	Knowledge Tools	The Disasters program area of NASA's Earth Science Applied Sciences Program uses Earth-observing data and applied research to improve the prediction of, preparation for, response to and recovery from hazards and disasters around the world.	https://appliedsciences.nasa.gov/what-we-do/disasters/practitioner-resources	<ul style="list-style-type: none"> • NASA Disasters Mapping Portal
Drought early warning systems (DEWS)	NOAA	Dashboard	Drought early warning systems (DEWS) use networks of federal, tribal, state, local, academic, and other partners to make climate and drought science accessible and useful for decision makers. These systems improve stakeholders' capacity to monitor, forecast, plan for, and cope with the impacts of drought.	https://www.drought.gov/dews	<ul style="list-style-type: none"> • Drought monitor
FS and NRCS's Joint Chiefs' Landscape Restoration Partnership	USDA	Funding Opportunity	The Joint Chiefs' Landscape Restoration Partnership enables NRCS and the Forest Service to collaborate with agricultural producers and forest landowners to invest in conservation and restoration at a big enough scale to make a difference. Working in partnership, and at this scale, helps reduce wildfire threats, protect water quality and supply, and improve wildlife habitat for at-risk species.	https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/newsroom/features/?cid=stelprdb1244394#:~:text=The%20joint%20Chiefs%20landscape%20Restoration%20scale%20to%20make%20a%20difference,	
National Integrated Drought Information System (NIDIS)	NOAA	Knowledge Tool	The National Integrated Drought Information System (NIDIS) is a multi-agency partnership that coordinates drought monitoring, forecasting, planning, and information at national, tribal, state, and local levels. The site includes information on droughts by sector, and by location, such as drought monitoring, drought indicators and droughts impacts.	https://www.drought.gov/	<ul style="list-style-type: none"> • Drought science information • Conditions and outlooks (by sector & locations)

NRCS's Conservation Innovation Grants (CIG)	USDA	Funding Opportunity	Conservation Innovation Grants (CIG) is a competitive program that supports the development of new tools, approaches, practices, and technologies to further natural resource conservation on private lands. Through creative problem solving and innovation, CIG partners work to address our nation's water quality, air quality, soil health and wildlife habitat challenges, all while improving agricultural operations.	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/cig/	*Funding
Regional Actions to Address Climate Change Impacts on Water	EPA	Knowledge Tool	This page breaks down the EPA's efforts to address climate change impacts on water in the 10 EPA regions of the US.	https://www.epa.gov/climate-change-water-sector/regional-actions-address-climate-change-impacts-water	*Many! Partnerships and resources by region
Regional Conservation Partnership Program (RCPP)	USDA	Funding Opportunity	The Regional Conservation Partnership Program (RCPP) promotes coordination of Natural Resource Conservation Service (NRCS) conservation activities with partners that offer value-added contributions to expand our collective ability to address on-farm, watershed, and regional natural resource concerns. Through RCPP, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address.	https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/rcpp/	*Adaptation Workbook
Resist-Accept-Direct (RAD) Framework	Multiple	Knowledge Tools	Preparing and Managing for Ecological Transformation – A consortium of Federal agencies including the NPS, USFWS, USGS, BLM, USFS, and NOAA, as well as States, non-governmental organizations and academia, developed a decision framework to help resource managers prepare for and manage ecosystems undergoing ecological transformation. The Resist-Accept-Direct (RAD) framework is a decision-making tool that helps resource managers make informed strategies for responding to ecological changes resulting from climate change.	https://www.nps.gov/subjects/climatechange/radframework.htm	*Resist-Accept-Direct (RAD) report
Sea Level Change Program	NASA	Knowledge Tools	NASA Sea Level Science and Interdisciplinary Research	https://sealevel.nasa.gov/	*Climate tools *Data and Analysis Tools
Southeast FireMap	N/A	Dashboard	Develop a cohesive system using remote sensing to track both prescribed fires and wildfires across the Southeast, providing significantly improved resolution over other regional and national systems currently in use. Fire mapping tool enables resource managers to improve their approaches to managing wildfire risk and fire management needs through targeted prescribed burns and training.	https://www.landscapepartnership.org/key-issues/wildland-fire/fire-mapping/regional-fire-mapping/se-firemap	*SE FireMap dashboard
The Office of Energy Efficiency and Renewable Energy's 3rd Water Power Technologies Office (WPTO) Assessment	DOE	Knowledge Tool	Look out for 3rd WPTO national wide assessment-to effectively develop tools that bridge climate science to actionable system intelligence. This study aims to assess future vulnerability and risk from drought, decreased snowpack, elevated river temperatures, and flooding. In the future, this work will form a baseline climate assessment to inform climate resilient Federal hydropower.	https://www.energy.gov/eere/water/water-power-technologies-office	*Climate action tool in development
USACE Access to Water Resources Data	USACE	Knowledge Tools	The United States Army Corps of Engineers (USACE) is responsible for operating and maintaining more than 700 lock and dam projects nationwide. The Access to Water Resources Data - Corps Water Management System (CWMS) Data Dissemination tool supports the USACE water control management mission by utilizing visualizations and reports to provide continuous assessment, awareness, and effective decision support of lock and dam projects, which in turn reduces risks to people, property, and the environment.	https://water.usace.army.mil/a2w/?p=100:1.....	*WM Data Dissemination
USACE Climate Preparedness and Resilience Activities	USACE	Knowledge Tools	USACE continues its efforts with other agencies to develop the science and engineering research on climate change information into the actionable basis for adapting to climate change impacts. USACE Climate Change Adaptation resources are available for water management activities.	https://www.usace.army.mil/corpsclimate/Climate_Preparedness_and_Resilience/	*Coastal Risk Reduction and Resilience *Application of Flood Risk Reduction Standard for Sandy Rebuilding Projects *Comprehensive Evaluation of Projects with Respect to Sea-Level Change *Hydrology to Support Adaptation *Update Drought Contingency Plans *Update Reservoir Sediment Information *Pilot and Demonstrations *Regional Climate Impact Assessments *Ecosystem Adaptation *Greenhouse Gas Accounting
USACE Climate-Impacted Hydrology Tools	USACE	Knowledge Tools	Hydrological tools and methods supporting climate change adaptation planning and implementation.	https://www.usace.army.mil/corpsclimate/Public_Tools_Dev_by_USACE/Climate-Impacted_Hydrology.aspx	*Time Series Toolbox: https://climate.sec.usace.army.mil/tst_app/ *Nonstationarity Detection Tool: https://climate.sec.usace.army.mil/nsd/ *Climate Hydrology Assessment Tool: https://climate.sec.usace.army.mil/chat/
USACE Planning Community Toolbox	USACE	Knowledge Tools	Planning plays a vital role in supporting the Corps of Engineers Civil Works water resources development mission. Through planning activities, including feasibility studies, Continuing Authorities Program studies, watershed studies, comprehensive/large scale studies, general reevaluation studies, validation studies and other post-authorization change studies - and more, Corps planners help decision-makers identify water resources problems, conceive solutions to them, and compare the importance of the inevitable conflicting values inherent in any solution. The Planning Community Toolbox includes a wealth of information for planners and project delivery teams, including the policy, guidance, processes, and tools that are used every day in planning.	https://planning.erdc.dren.mil/toolbox/index.cfm	*Planners Library *Various tools including : Risk-Informed Decision Making and Planning Support Tools, Planning Models, Software, Collaboration and Productivity Tools, Templates and Checklists, Planning Data Sets and Mapping Resources
USACE Sea-Level Change Tools	USACE	Knowledge Tools	Web-based tools developed to automate the computation of sea level change scenarios and provide consistency with repeatable analytical results.	https://www.usace.army.mil/corpsclimate/Public_Tools_Dev_by_USACE/sea_level_change/	*Sea Level Change Calculator: https://cwbi-app.sec.usace.army.mil/rcscic/slcc_calc.html *Sea Level Tracker: https://climate.sec.usace.army.mil/slr_app/

USACE Web Portal for Enhancing Reservoir Sedimentation Information for Climate Preparedness and Resilience	USACE	Knowledge Tools	Knowledge of reservoir sediment is essential for climate preparedness and resilience. The Enhancing Reservoir Sedimentation Information for Climate Preparedness and Resilience (RSI) system, developed by the U.S Army Corps of Engineers (USACE), provides a comprehensive summary of USACE reservoir conditions. The intent of this system is to store and display reservoir information to help USACE evaluate aggregation trends, life expectancy and reservoir vulnerabilities to climate change.	https://cwbi-app.sec.usace.army.mil/ords/f?p=303:1:::	•Reservoir Sedimentation Information Data
USDA Conservation Programs	USDA	Funding Opportunities	The United States Department of Agriculture Farm Service Agency (FSA) oversees a number of voluntary conservation-related programs. These programs work to address a large number of farming and ranching related conservation issues including: Drinking water protection, Reducing soil erosion, Wildlife habitat preservation, Preservation and restoration of forests and wetlands, Aiding farmers whose farms are damaged by natural disasters.	https://www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/	<ul style="list-style-type: none"> •The Conservation Reserve Program (CRP) •The Conservation Reserve Enhancement Program (CREP) •The Emergency Conservation Program (ECP) •The Emergency Forest Restoration Program (EFRP) •The Farmable Wetlands Program (FWP) •The Grassland Reserve Program (GRP) •The Source Water Protection Program (SWPP)
USGS National Water Data - National Water Information System Web (NWISWeb)	USGS	Dashboard	Water-resources data is collected at approximately 1.9 million sites in all 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, American Samoa and the Commonwealth of the Northern Mariana Islands. The USGS investigates the occurrence, quantity, quality, distribution, and movement of surface and underground waters and disseminates the data to the public, State and local governments, public and private utilities, and other Federal agencies involved with managing our water resources.	https://dashboard.waterdata.usgs.gov/app/nwd/?region=lower48&aqi=default	<ul style="list-style-type: none"> •USGS Stations •Weather Conditions •Hydrology
U.S. Geological Survey's (USGS) water use reports	USGS	Knowledge Tool	The USGS works in cooperation with local, State, and Federal agencies to collect water-use information, then compiles these data to produce water-use information aggregated at the county, state, and national levels. Every five years, data at the county level are compiled into a national water-use data system and State-level data are published in a national circular, Estimated Use of Water in the United States. Reports released at 5-year intervals, serve as a useful tool to measure changes in water use over time.	https://waterdata.usgs.gov/nwis/wu	•Water use data