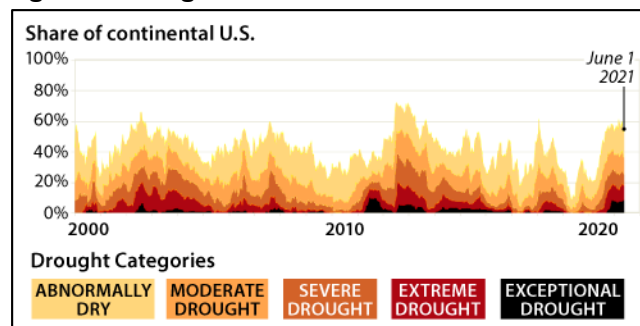


## Drought Response and Preparedness: Policy and Legislation

In recent years, large areas of the United States have been subject to drought. In addition to estimates of average annual losses from drought of \$9 billion for agriculture, the effects have included dwindling water supplies for rural households and water use restrictions in urban areas. As of mid-2021, the western United States is in the midst of its most severe drought since the early 2000s (see **Figure 1**), with some areas facing their driest years on record. Some experts have raised concerns about the availability of water supplies and the drought's impacts on forests and other flora and fauna. Congress and other policymakers are confronted with how to prepare for and monitor droughts, how to mitigate drought-related consequences, and who should bear responsibility for these actions. Historically, drought response and preparedness have been shaped by state and local actions, federal drought assistance, and federal dam operations, among other factors.

**Figure 1. Drought in 17 Western States**



**Source:** U.S. Drought Monitor, <https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>; <https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx>.

### State and Local Drought Preparedness

The federal government generally defers to state primacy in surface and groundwater allocation. States and local entities also typically lead efforts to prepare for drought. Most states have drought plans in some form, and some of these plans incorporate efforts to reduce drought vulnerabilities. Some states and communities have invested in reducing water demand and expanding drought-resilient supplies (e.g., wastewater reuse/recycling, desalination, and groundwater recharge and management) or have facilitated water banks and markets for water transfers. Community-level drought plans are less widespread than state plans, except in states that require or support this planning.

### Federal Drought Assistance Authorities

Coordination of federal drought research and monitoring occurs largely through the National Oceanic and Atmospheric Administration's (NOAA's) National Integrated Drought Information System (NIDIS) program (15 U.S.C. §313d). Pursuant to congressional direction, NIDIS supports and integrates interorganizational

information and research to support an "early warning system" for drought. NIDIS is authorized to receive appropriations through FY2023.

Most federal financial aid for drought addresses agricultural production loss and rural water supplies. The U.S. Department of Agriculture (USDA) administers several programs that can assist farmers and ranchers during a drought, including subsidized insurance; direct payments for crop, livestock, and feed loss; loans; and cost sharing to rehabilitate damaged lands or implement conservation practices related to drought preparedness. The USDA secretarial disaster designation for drought and some USDA programs are triggered by a county's drought-intensity level as published in the U.S. Drought Monitor, a weekly map of drought conditions created by NOAA, USDA, and the nonfederal National Drought Mitigation Center. Other nonagricultural USDA programs provide grants and loans to rural communities for drinking water or wastewater projects, which also may assist with drought preparedness.

Some federal authorities provide financial assistance with other aspects of drought, but these programs are limited in scope. For instance, the Bureau of Reclamation (Reclamation) operates a Drought Response Program, which provides limited funding for contingency planning, resiliency projects, and emergency response actions in the 17 arid and semiarid western states. Some Federal Emergency Management Agency (FEMA) programs for hazard mitigation, such as the Hazard Mitigation Grant Program and the Building Resilient Infrastructure and Communities (BRIC) program also may assist in preparing for and reducing drought risks. However, state and local entities retain most of the authority and resources for influencing water use.

Timely information, such as the U.S. Drought Monitor, relies on federal investment in remote observations (e.g., satellites); surface observations and monitoring (e.g., streamgages, soil moisture, precipitation measurements); complex hydrological models; and dissemination and research through NIDIS. Although understanding of drought frequency, intensity, and duration due to climate and weather conditions has improved, the current state of scientific understanding limits more accurate predictions beyond a two-week time frame (e.g., precipitation predictions at the sub-seasonal to seasonal timescale remain a challenge).

### Drought and Federal Dam Operations

Reservoirs and dams operated by Reclamation and the U.S. Army Corps of Engineers (USACE) store water for irrigation and for municipal and industrial uses, among other purposes. The Water Supply Act of 1958 (72 Stat. 320; 43 U.S.C. §390b) states that Congress recognizes "the

primary responsibilities of the States and local interests in developing water supplies for domestic, municipal, industrial, and other purposes” and that the federal government should participate and cooperate in developing these supplies at federal flood-control, navigation, and irrigation projects. How some of the more than 1,000 federal dams and related infrastructure are operated under drought conditions can be contentious. Dam operations also must comply with federal laws aimed at protecting species and other factors unrelated to water supply and irrigation. Operational challenges have increased where water demand has grown, creating conflicts among water users. There is also some congressional interest in determining whether operations of existing infrastructure can be changed to capture more water for use during dry months or for releases to facilitate downstream activities, such as aquifer recharge. For multipurpose reservoirs, a policy challenge is identifying operational changes that provide drought resilience while considering the effects such changes may have on flood control, hydropower, and aquatic ecosystems.

## Federal Drought Response

A widespread drought in 2012 in the contiguous United States resulted in new executive branch drought initiatives. In 2013, the Obama Administration assembled a National Drought Resilience Partnership (NDRP). The NDRP aimed to coordinate federal drought policies, facilitate access to drought assistance, and improve information-sharing to help with drought preparedness. In 2016, the Obama Administration issued a memorandum listing six goals for drought resilience and formalizing the NDRP. It also issued a Long-Term Drought Resilience Federal Action Plan.

FEMA and the Department of Homeland Security have been involved in interagency drought efforts but generally have not played leadership roles. Requests since the 1980s that the President declare a drought disaster or emergency under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 U.S.C. §§5121 et seq.) have been denied, generally in deference to USDA authorities. A major declaration that a drought has overwhelmed state or local resources would trigger federal aid beyond agricultural disaster assistance.

## Federal Legislation: Recent Actions and Proposals

Recent Congresses have acted to address drought. In 2015, Congress enacted P.L. 114-322 (Water Infrastructure Improvements for the Nation Act, or WIIN Act), which, among other things, expanded Reclamation’s support for water storage projects and made changes to operations of the California Central Valley Project. Congress also enacted USACE authorities to assess reservoir operations during drought (P.L. 113-121, §1046), investigate forecast-informed reservoir operations (P.L. 115-270, §1222), and expand water-conservation opportunities at its projects (P.L. 114-322, §§1116-1117). Congress expanded Environmental Protection Agency loan eligibility under its Water Infrastructure Finance and Innovation Act (WIFIA) program to include drought-related projects (P.L. 114-322, §5008). Under the 2018 farm bill (P.L. 115-334, Title II), Congress amended several USDA programs to address drought resilience and water conservation.

Some bills introduced in the 117<sup>th</sup> Congress (e.g., H.R. 737, H.R. 1563) would extend Reclamation’s WIIN Act authorities for water storage projects and operations; others would facilitate alternative water supply projects for water reuse and recycling and desalination (e.g., H.R. 1015). Other legislation (e.g., S. 953) aims to address multiple areas to improve drought resiliency, including water infrastructure development and ecosystem restoration.

## Drought Policy: Next Steps

The need for and benefits of drought preparedness may be growing. The 2018 Fourth National Climate Assessment indicated that rising air temperatures and hydrologic changes are intensifying droughts in some regions, such as California, the Colorado River Basin, and the Rio Grande. The assessment also noted that groundwater depletion in many U.S. regions is exacerbating drought risk, including in the Southwest and Southern Great Plains.

Broadly at issue are the overall federal role and the adequacy of current federal efforts to mitigate drought. Some in Congress may question federal programs’ effectiveness in addressing drought, as well as the drought preparedness of federal facilities and emergency-response entities. Other potential areas of focus include the adequacy of—and accountability for—state and local drought planning and resilience efforts. Federal assistance in augmenting water supplies and constructing new water storage projects (including groundwater recharge) also may be of interest. Finally, the specter of multiyear or multi-decadal disruptive droughts (i.e., *megadroughts*), or of a change in drought frequency or intensity, raises specific considerations about how to use limited federal resources to prepare for and respond to drought. These considerations may include the question of what congressional authorities and funding are necessary to support contingency planning and emergency simulation efforts for drought preparedness by state, local, and federal governments and whether broader federal infrastructure initiatives should prioritize drought resilience and related considerations.

## Further Reading

CRS Insight IN11684, *Federal Agricultural Recovery Resources for Drought-Related Losses*; CRS Report R46471, *Federally Supported Projects and Programs for Wastewater, Drinking Water, and Water Supply Infrastructure*; CRS Report R45259, *The Federal Role in Groundwater Supply*; CRS Report R45546, *Management of the Colorado River: Water Allocations, Drought, and the Federal Role*; CRS Report R45342, *Central Valley Project: Issues and Legislation*. CRS Insight IN11187, *Federal Emergency Management Agency (FEMA) Hazard Mitigation Assistance*; CRS Insight IN11515, *FEMA Pre-Disaster Mitigation: The Building Resilient Infrastructure and Communities (BRIC) Program*,

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