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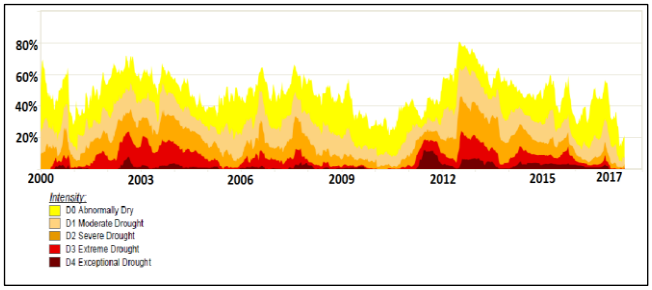
August 14, 2017

Drought Response and Preparedness: Policy and Legislation

In recent years, large areas of the United States have been subject to drought (see **Figure 1**). Congress and other policymakers are confronted with how to monitor and prepare for droughts and reduce their economic and environmental consequences. At issue in selecting drought-related actions and determining responsibilities is who bears the costs of drought impacts, disaster response, and long-term adjustments to changes in water conditions and temperatures. Drought response and preparedness are shaped by state and local actions, federal drought assistance, and federal dam operations, among other factors.

Figure 1. Drought in the United States, 2000-2017
(percentage of lower 48 states with abnormally dry or drought conditions)



Source: U.S. Drought Monitor.

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. As of mid-2017, all but two states had drought plans or were developing such plans. Although most plans center on reacting to drought conditions, 13 state plans incorporate efforts to reduce drought vulnerabilities. Some states and communities have invested in reducing water demand and expanding drought-resilient supplies (e.g., reuse/recycling of wastewater, desalination, and groundwater recharge and management). California, Idaho, and Arizona are among the states that 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 local drought planning, such as Texas.

Research shows that, although most U.S. cities are relatively drought resilient, some are vulnerable because of factors such as low water storage per capita, water sources that are shared with other cities or large users, or arid locations. Among cities regularly identified as being at risk of water supply challenges are Atlanta, GA; El Paso, TX; Lincoln, NE; Los Angeles, CA; Miami, FL; San Antonio, TX; and Salt Lake City, UT. Some of these cities are leaders in new water supply development and demand management.

Federal Drought Assistance

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, authorized in 2006 (P.L. 109-430) and 2016 (P.L. 113-86). Pursuant to congressional direction, NIDIS integrates drought research and builds forecasting and assessment capacity to help provide an "early warning system" for drought. NIDIS is authorized to receive appropriations through FY2018.

Most federal financial aid for drought assists agriculture and rural water supplies. Under the 2014 farm bill (P.L. 113-79), nearly all segments of the farm sector are covered by either federal crop insurance or a disaster program administered by the U.S. Department of Agriculture (USDA). (See CRS Report RS21212, *Agricultural Disaster Assistance*.) Both of these programs can assist farmers during a drought. For example, Livestock Forage Program payments to producers 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 multiple entities and led by NOAA through NIDIS. Other USDA conservation programs (discussed in CRS Report R40763, *Agricultural Conservation: A Guide to Programs*) also may assist with drought preparedness.

Federal authorities for emergency community water supplies exist but are limited in scope and funding. Some federal agencies have programs to promote water efficiency, which may reduce demand for water during droughts. These include water-efficient product labeling by the Environmental Protection Agency (EPA) and water-efficiency grants for certain nonfederal entities by the Bureau of Reclamation (Reclamation). However, state and local entities retain most of the authority and resources for influencing municipal and industrial (M&I) 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 and precipitation measurements), complex models, and dissemination and research through NIDIS. Improved monitoring technologies and better modeling have resulted in a better understanding of drought frequency, intensity, and duration due to climate and weather conditions, but more precise long-term assessments remain difficult to formulate.

Drought and Federal Dam Operations

Reservoirs and dams operated by Reclamation and the U.S. Army Corps of Engineers (Corps) store water for irrigation and for M&I 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. For several of the more than 1,000 federal dams and related infrastructure, drought operations can be contentious. These federal dams often serve multiple sectors that depend on river flows. Dam operations also must comply with federal laws aimed at protecting species and other environmental factors. Operational challenges have increased as water demand has grown, creating conflicts among water users. There is also 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 opportunities that provide drought-resilience benefits while also considering the effect that such changes may have on flood control, hydropower, and aquatic ecosystems.

Status of Federal Drought Response

A widespread drought in 2012 in the contiguous United States resulted in the activation of a national drought-resilience framework. In 2013, the Obama Administration assembled a National Drought Resilience Partnership (NDRP). The partnership 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. The Trump Administration has not addressed the status of these actions.

The Federal Emergency Management Agency (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.

The economic cost of a disaster is often seen as a measure of its significance and an indicator of the level of policy response and attention provided, but there is no standard, widely accepted methodology used by the federal government to capture a drought's national impact. Accounting for agricultural impacts—such as the effect of regional crop loss on the nation's food supply or the costs and benefits associated with federal agriculture programs—is not straightforward. Identifying and quantifying nonagricultural impacts would require broad assessments of drought effects that typically have not been conducted (e.g., impacts on rangelands, wildfire, navigation, tourism, recreation, utilities, industrial operations, species, environmental quality, and public health). Some droughts—especially multiyear droughts or those affecting critical infrastructure or critical water supplies—can have cascading impacts.

Federal Legislation: Recent Actions and Proposals

Drought and water supply issues, particularly in California, prompted legislative proposals in recent Congresses to address drought. Some of these proposals were enacted, including Subtitle J of P.L. 114-322, which, among other things, expanded Reclamation's support for water storage projects to include certain nonfederal projects and made changes to its operations of the California Central Valley Project in times of drought. Congress provided the Corps with authorities to assess its reservoir operations during drought and to expand water-conservation opportunities at its projects (P.L. 113-121 and Title I of P.L. 114-322). Congress also expanded EPA loan and loan-guarantee opportunities and eligibility for water supply systems under those bills. Appropriations decisions in the 115th Congress may determine the extent to which federal agencies are able to implement many of the enacted provisions.

Bills introduced in the 115th Congress would address water operations at Reclamation facilities and federal approval of nonfederal water storage facilities on federal lands (e.g., H.R. 23; see CRS Report R44889, *H.R. 23, the Gaining Responsibility on Water Act of 2017 (GROW Act)*). Other bills would authorize federal activities related to alternative supplies (e.g., H.R. 2799 authorizing assistance to wastewater reuse projects) or water conservation or efficiency efforts (e.g., WaterSense provisions in S. 1460).

Drought Policy: Next Steps?

At issue is the adequacy of current efforts to mitigate the impacts of drought conditions. Some may question the effectiveness of federal programs (including coordination efforts such as NIDIS and NDRP or drought-assistance programs) in addressing drought and promoting drought resilience. Others may question the preparedness of federal facilities (e.g., dams, lands, military bases) and emergency-response entities to drought. Similarly, the adequacy of, and accountability for, state and local drought-planning and resilience efforts is another potential focus of discussion. Additional issues involve the costs and benefits of state and local drought planning, federal assistance in augmenting water supplies, and construction of new or expanded water storage projects, including groundwater recharge.

The specter of multiyear or multi-decadal disruptive droughts (sometimes called *megadroughts*) or of a change in drought frequency or the intensity of short-term droughts raises questions about how to use limited federal resources to efficiently and effectively prepare for and respond to drought. For instance, what contingency planning and emergency simulation efforts have been performed to gauge local, state, and federal drought disaster-response preparedness? More fundamentally, what is the appropriate federal role? Might anticipated infrastructure investment initiatives include or prioritize proposals that may foster drought resilience and preparedness?

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