



Inflation Reduction Act

FLASH REPORT: THE BUREAU OF RECLAMATION'S DROUGHT MITIGATION PLANS AND ACTIVITIES

The President signed the Inflation Reduction Act (IRA), Pub. L. No. 117-169, into law on August 16, 2022. The IRA (§ 50233) authorizes \$4 billion in appropriations, through fiscal year (FY) 2026, for the U.S. Department of the Interior's (DOI's) Bureau of Reclamation (BOR) to mitigate drought in the Reclamation States.¹ Specifically, the IRA provided these funds to BOR for grants, contracts, or financial assistance agreements to mitigate drought, with priority given to the Colorado River Basin and other basins experiencing similar levels of long-term drought. Drought mitigation efforts include compensation for voluntary reduction of water consumption, system conservation projects that reduce water consumption or provide environmental benefits to the Lower or Upper Basins of the Colorado River, and ecosystem and habitat restoration projects.

We are issuing this flash report to provide information on BOR's use of IRA funding to mitigate drought. We describe risks, identify how BOR has stated it plans to use IRA funding to mitigate drought, and discuss BOR's oversight and reporting strategy for the funds.

Definitions

An **acre-foot** is the volume of water needed to cover 1 acre (43,560 square feet) at a depth of 1 foot, which is 325,851 gallons.

A **canal** is a channel, usually open, that conveys water by gravity to areas such as farms and municipalities.

Conservation is increasing the efficiency of energy use, water use, production, or distribution.

Consumptive water use is the total amount of water withdrawn by vegetation, human activities, and evaporation of surface water.

A **drainage basin** is an area of land that drains its water into a river.

Drought is a climate condition in which there is insufficient soil moisture available for normal vegetative growth and/or a prolonged period of below-average precipitation.

An **entitlement holder** has a right to divert and consumptively use water within apportionments of a basin.

Fallowing is a drought mitigation measure where land is plowed, tilled, and left unplanted.

Lining is any protective material used to line the interior surface of a conduit, pipe, or tunnel.

A **watermaster** contracts for water delivery in perpetuity, approves changes in the place and type of water use, schedules water releases, approves water orders, and accounts for water use.

Source: BOR.

¹The Reclamation States are Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.



Background

BOR manages, develops, and protects water and related resources for the American public. It is the Nation's largest wholesale water supplier, delivering approximately 10 trillion gallons of water to millions of people each year and operates 294 reservoirs with a total storage capacity of 140 million acre-feet. Further, BOR provides irrigation water for 140,000 farmers, totaling 10 million acres of farmland.²

The Reclamation States rely on BOR water deliveries to ensure water is available for agricultural, energy, and environmental needs. Adequate and safe water supplies are fundamental to the Nation's health and economy.

Long-Term Drought

The Reclamation States are experiencing a substantial and widespread drought. The Upper and Lower Colorado River Basins, shown in Figure 1,³ are particularly affected.

These drought conditions and reduced inflows from farm runoff also contribute to further issues in the Salton Sea, which is a large inland body of water in California that is currently shrinking largely due to reduced inflows from the Colorado River and is also increasing in salinity.

Figure 1: Map of the Upper and Lower Colorado River Basins



² BOR, Bureau of Reclamation – About Us, <https://www.usbr.gov/main/about/fact.html>.

³ The Upper Colorado River Basin includes areas where waters naturally drain into the Colorado River system north of Lees Ferry, including Lake Powell. The Lower Colorado River Basin includes areas where waters naturally drain into the Colorado River System south of Lees Ferry, including Lake Mead.



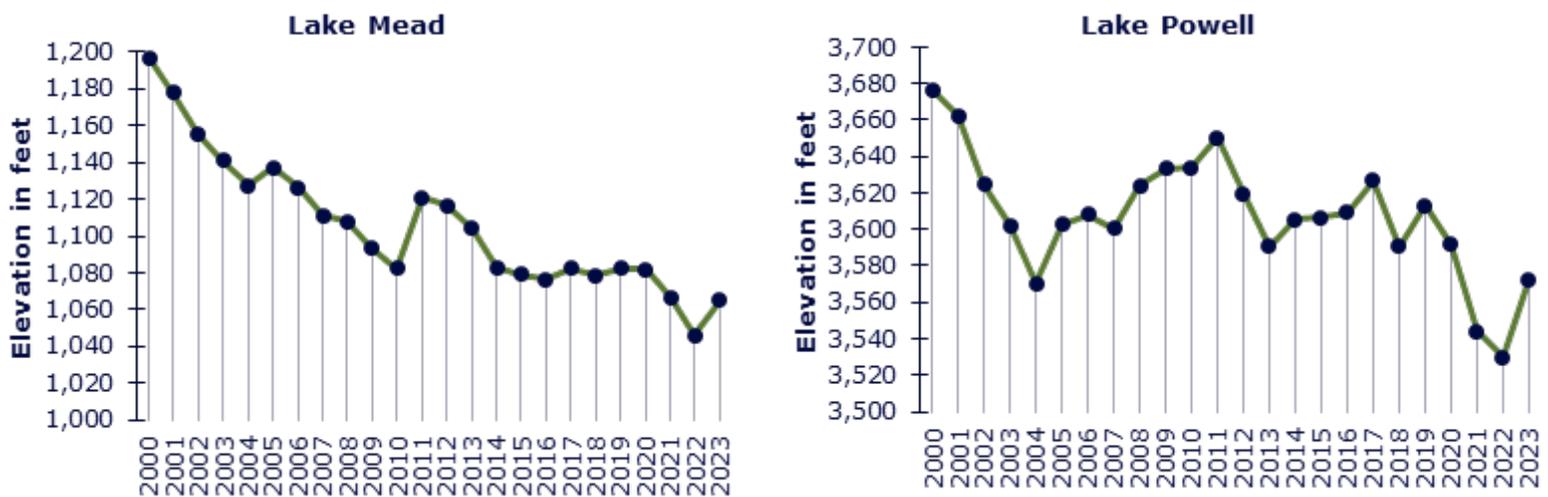
Background

Low natural flows due to drought have created the driest 23-year period on record for the Colorado River. According to BOR data, as of February 2024, Lake Mead’s and Lake Powell’s water levels were 36 percent full and 35 percent full, respectively.⁴ Further, BOR data shows Lake Mead’s water elevation level in October 2022 was 150 feet lower than it was in in October 2000, and Lake Powell’s water elevation level in October 2022 was 147 feet lower than in October 2000 (see Figure 2). While water levels rebounded later in 2023 due to above-average snowmelt, long-term drought remains a concern that has not abated.

Administrative Authority

Administrative authority for water use can vary depending on the location. The Upper and Lower Colorado River Basins are governed by different legislation and compacts, and different entities have authority over the water use in each basin. In particular, in the Lower Colorado River Basin, BOR carries out the Secretary of the Interior’s role as watermaster and administers water delivery contracts of entitlement holders.⁵ In the Upper Colorado River Basin, the States have authority for water rights and work through the Upper Colorado River Commission (UCRC), which is an interstate water administration agency created by the Upper Colorado River Basin Compact of 1948.⁶

Figure 2: Lake Mead and Lake Powell Water Elevation Levels, by Feet, 2000-2023*



* Water years begin on October 1.

⁴ BOR, *Lower Colorado Water Supply Report - Bureau of Reclamation*, www.usbr.gov/lc/region/g4000/weekly.pdf.

⁵ Cong. Rsch. Serv., *Management of the Colorado River: Water Allocations, Drought, and the Federal Role*, 2023. This authority includes contracting for water delivery for mainstream entitlement holders, approving changes to the place and type of water use, scheduling water releases, approving water orders, and accounting for water use. Tributary allocations are reserved to the States.

⁶ The UCRC consists of one State commissioner from each of the four Upper Colorado River Basin States (Colorado, New Mexico, Utah, and Wyoming) and one Federal appointee. The UCRC’s role is to ensure the appropriate allocation of water from the Colorado River to these States.



Types of Drought Mitigation

Before the IRA's enactment, BOR had historically contributed to projects that tested a wide range of short- and long-term measures to conserve water—especially for the Colorado River. For example, BOR has contributed to pilot programs for both the Upper and Lower Colorado River Basins in which water users were compensated for voluntary reductions in water use, including the fallowing of agricultural lands or increased water efficiency, which are short-term measures for water conservation.

In addition, according to BOR, the Bureau contributed to large infrastructure projects that mitigated drought on a long-term scale. These projects were intended to build drought resiliency by increasing the reliability of water supplies, improving water management, and providing benefits for fish and wildlife and the environment. According to the Congressional Research Service, long-term water supply projects

can be completed through traditional projects, such as water storage and conveyance projects, or alternative projects,⁷ such as the following examples:

- Recycling or reusing agricultural drainage water.
- Recycling or reusing wastewater, brackish surface and groundwater,⁸ and other types of contaminated water.
- Desalination projects.⁹
- Groundwater recharge.¹⁰

According to the Congressional Research Service, these alternative projects take time to develop and are more expensive than traditional water supplies, but they may sometimes be cost-competitive in light of their results.¹¹

⁷ *Short- and Long-Term Solutions to Extreme Drought in the Western United States: Hearing Before the S. Comm. On Energy and Nat. Res., 117th Cong. (2022)* (statement of Charles V. Stern, Specialist in Natural Res. Policy. Cong. Rsch. Serv.).

⁸ Brackish water is a mix of fresh and salt waters.

⁹ Desalination is the removal of salts from water by either natural means or by specific water treatment processes.

¹⁰ Recharge is an increase in groundwater storage due to precipitation, infiltration from streams, or human activity.

¹¹ *Short- and Long-Term Solutions to Extreme Drought in the Western United States: Hearing Before the S. Comm. On Energy and Nat. Res., 117th Cong. (2022)* (statement of Charles V. Stern, Specialist in Natural Res. Policy. Cong. Rsch. Serv.).



Use of Funds

BOR was appropriated \$4 billion in IRA funds for drought mitigation in the Reclamation States. Funds are projected to be allocated primarily to the Lower Colorado River Basin, with smaller amounts allocated to the Upper Colorado River Basin and other basins experiencing comparable levels of long-term drought. See Figure 3 for projected funds to each basin.¹² As of November 2023, approximately \$1.04 billion of the \$4 billion has been designated as “planned for use,” while \$500.4 million of funds have been obligated for use.

Figure 3: Reclamation Drought Planned Funding Breakdown as of November 2023

Basin	Project Type	Estimated Funding Allocated (\$)	Planned Amount (\$)	Obligated Amount (\$)
Lower Colorado River Basin	Short-Term	1,300,000,000	662,511,550	427,591,550
	Long-Term	1,450,000,000	0	0
	Salton Sea	250,000,000	250,000,000	51,981,124
Upper Colorado River Basin	Short-Term	125,000,000	125,000,000	19,100,000
	Long-Term	375,000,000	0	0
Other Basins	To Be Determined	500,000,000	0	0
Other Costs*				1,766,682
Totals		\$4,000,000,000	\$1,037,511,550	\$500,439,356

* “Other Costs” include administrative costs for DOI’s Program Management Office, used “to support the management, oversight, and execution of” IRA projects and programs, according to BOR.

Lower Colorado River Basin Projects

As shown in Figure 3, BOR expects to allocate approximately \$3 billion of IRA appropriations on drought mitigation projects in the Lower Colorado River Basin, with \$1.3 billion used for short-term projects, \$1.45 billion used for long-term projects, and \$250 million for funding related to the Salton Sea.

In October 2022, BOR began accepting proposals for the Lower Colorado Conservation and Efficiency Program (which was created as part of a commitment DOI made to address drought after the signing of the IRA) to address the immediate issue of water levels in Lake Mead while also improving system efficiency and promoting more durable long-term solutions for the basin. There are three components to BOR’s program: two that relate to short-term projects and one that relates to long-term projects.

¹² These figures include estimated funding to be allocated, already planned allocations, and obligated amounts. The estimated and planned funding are subject to change. For example, if \$125 million in funds are not spent on short-term projects in the Upper Colorado River Basin, the unused portion may be used for long-term projects in the Upper Colorado River Basin. In contrast, obligated amounts are legally binding commitments DOI has made through agreements.



Use of Funds

Short-Term Projects

The first component of this program involves proposals that have a short-term or immediate goal of retaining higher water volumes in Lake Mead. Specifically, BOR enters into agreements with water delivery contract or entitlement holders.¹³ Pursuant to these agreements, BOR will pay these entities to fallow farmland and thereby conserve water per acre-foot for the following set prices, dependent on the length of the agreement:

- 1-year agreement: \$330 per acre-foot saved.
- 2-year agreement: \$365 per acre-foot saved.
- 3-year agreement: \$400 per acre-foot saved.¹⁴

As of October 2023, BOR had entered into 17 agreements with water delivery contract or entitlement holders under this component; 16 of the 17 agreements are 3-year agreements and 1 is a 1-year agreement.

Under the second component of the plan, water entitlement holders will submit water conservation plans that can be implemented to reduce lower Colorado River water use. Unlike the agreements under the first component, which has set prices for each acre-foot conserved, agreements under this component would not have a set price. Instead, the entitlement holder will propose prices and provide an economic explanation justifying the proposal. BOR officials told us in September 2023 that two agreements were in process but were not yet completed as of November 2023.

The City of Phoenix – Short-Term Lower Colorado River Basin Project

BOR entered into a 3-year agreement with the city of Phoenix in which BOR will pay the city \$400 dollars per acre-foot saved each year. Under this agreement, the city is to conserve up to 50,000 acre-feet of water per year in exchange for up to \$20 million per year. One BOR official told us, “We are successful if that water stays in the system, and the elevation builds.”



Photo of low water elevation levels at Lake Mead, 2021.

Long-Term Projects

The third component of the Lower Colorado Conservation and Efficiency Program involves long-term system efficiency improvements with the goal of resulting in additional system conservation, typically associated with construction and infrastructure projects. In May 2023, BOR requested proposals for projects from water delivery contract holders or entitlement holders and Central Arizona Project¹⁵ water delivery contract holders or subcontract holders.¹⁶

¹³ Only Lower Colorado River water delivery contract or entitlement holders and Central Arizona Project water contract or entitlement holders are eligible to participate and submit proposals.

¹⁴ BOR determined these prices through discussions and calculations with BOR economists, who evaluated the prices that two prior programs paid per acre-foot and how successful they were in conserving water. BOR also considered input from water entitlement holders.

¹⁵ The Central Arizona Project is designed to deliver Colorado River water to central and southern areas of the State and includes a water district that was formed to contract with DOI to deliver this water.

¹⁶ BOR’s request for proposals stated that projects must result in quantifiable, verifiable water savings in Lake Mead based on a consumptive use reduction and recent history of use; add new water to the applicant’s water supply enabling a consumptive use reduction of Colorado River water; and provide for monitoring to ensure the proposed benefits to the system are realized. Proposals were also required to include information such as project budget, a description and location of the project, and expected amount of water saved by acre-foot.



Use of Funds

BOR received 84 project proposals from entities, including Tribes, within California, Nevada, and Arizona. These proposals include a wide variety of system conservation, including, for example, canal linings, desalination projects, landscape conversion, and irrigation efficiency. These proposals also have a wide range of potential cost, ranging from \$100,000 to more than \$1 billion per project.

Salton Sea Management Program Projects

The Salton Sea is a large inland body of water located in the Southern California area of BOR's Lower Colorado Region. It is experiencing extreme levels of drought and is currently shrinking in large part due to reduced inflows from the Colorado River, resulting in exposed lakebed and a higher salinity concentration; this, in turn worsens air quality in the region and degrades the habitat of fish and bird species.



Photo of the Salton Sea.

California's Salton Sea Management Program establishes projects to improve air quality and habitat restoration. In an agreement signed in December 2022, BOR pledged to contribute to support these projects, and California committed

to voluntarily conserve 400,000 acre-feet annually and strongly encourage Colorado River users to conserve water. Since then, BOR has allocated \$250 million to support Salton Sea projects and technical capacity, primarily through California's Salton Sea Management Program. As of October 2023, approximately \$52 million of this \$250 million has been obligated to support implementation of those projects, including through funds provided to both California and the Torres Martinez Desert Cahuilla Indian Tribe.

Upper Colorado River Basin Projects

As shown in Figure 3, BOR expects to allocate approximately \$500 million for drought mitigation projects in the Upper Colorado River Basin. According to BOR, it expects to complete these projects in two components: short-term projects and long-term projects.

Short-Term Projects

For the short-term project phase, BOR is investing \$125 million to support the System Conservation Pilot Program in the basin, which would generate temporary, voluntary, and compensated water conservation to improve water efficiency and mitigate the impacts of drought. This program is cooperatively managed by BOR and the Upper Colorado River Basin States, which act through the UCRC. Specifically, in January 2023, BOR entered an agreement with the UCRC through which BOR provides the funding for this pilot program, while UCRC facilitates agreements with Upper Basin water users.

According to BOR, most of these short-term projects involve fallowing, in which an applicant may either receive \$150 per acre-foot of water saved, or a different amount that can be economically justified to BOR and the UCRC. As of September 2023, BOR reported that they had spent \$15.8 million on 64 short-term projects, resulting in 38,000 acre-feet of water saved in 2023.



Use of Funds

A Southwestern Wyoming Ranch—Short-Term Upper Colorado River Basin Project

A ranch in southwestern Wyoming joined the System Conservation Pilot Program and is under a full-season fallow for both 2023 and 2024, resulting in 310 acre-feet of water being conserved on the fallowed land. The rancher stated that drought conditions strongly affect his land and noted, “If we didn’t have the [Upper Colorado River Basin] water, we would have been gone a long time ago.”

Photo of a creek on fallowed land, southwestern Wyoming.



Long-Term Projects

For the long-term project phase, BOR will use the remaining \$375 million in IRA funding to focus on projects that fall into three general categories as requested:

- System conservation and efficiency projects that achieve verifiable, multiyear reductions in use of or demand for water supplies.
- Demonstration projects that spur advances in water conservation and efficiency using innovative techniques.
- Ecosystem and habitat restoration projects that address issues directly caused by drought.

BOR requested input for these types of long-term projects in June 2023, and it received suggestions from groups such as State water districts, farmers, and conservation groups. BOR stated that it is reviewing these suggestions to determine what project types and criteria BOR should consider when distributing funds. BOR is currently developing further criteria for long-term projects related to ecosystem and habitat restoration.

Other Basins

As shown in Figure 3, BOR expects to allocate approximately \$500 million on drought mitigation projects in other river basins with comparable levels of drought to the Colorado River Basin. In August 2023, BOR regional offices sent a presolicitation memorandum asking for suggestions from stakeholders regarding program design, project selection, or other information relevant to developing the program for the IRA. As of October 2023, BOR received 130 recommendations or plans for 14 river or lake basins in the Reclamation States. These recommendations include long-term conservation projects such as canal linings, groundwater recharge, and updated pipelines.

BOR has stated that it will make selections for these basins using a merit-based approach, which will be dependent on funding, and consistent with the methodology applied to Colorado River Basin projects.



Reporting and Oversight

Oversight of Funds

With \$4 billion in funds appropriated to BOR through FY 2026 to address drought mitigation in the Reclamation States, BOR must effectively oversee these funds to ensure that they are used appropriately and effectively.

BOR is the watermaster in the Lower Colorado River Basin. BOR’s Lower Colorado Regional Director is responsible for project oversight. For short-term projects (for example, agreements to fallow land), the regional office is responsible for quantifying water conservation and confirming that fallowing is actually occurring using land satellite imagery and analysis on the ground. Further, the agreements include terms and conditions that allow BOR to monitor and track water use to ensure water saved is not ordered or used by any other Colorado River water entitlement holder.

BOR is not the watermaster in the Upper Colorado River Basin; rather, the individual Upper Basin States

have responsibility for water rights administration. As a result, BOR entered into an agreement with UCRC, which has direct responsibility for internal oversight under the agreement. BOR reviews and provides final approval to UCRC for each funding agreement for the short-term projects (most of which are to fallow land), but those agreements are between the UCRC and individual water users. UCRC hired a contractor to work with the Upper Colorado River Basin States to verify water conservation through on-site visits and remote analyses and consolidates these verification reports into a final report. The UCRC and BOR review the final verification reports, and once water conservation is confirmed, UCRC disburses payment.

BOR officials identified a number of risk areas for oversight and related mitigation strategies, specifically involving the Upper and Lower Colorado River basins, shown in Figure 4.

Figure 4: BOR Risks and Stated Mitigation Strategies

Risk	Mitigation Strategy
Lack of Experience	According to BOR, although its IRA-funded Colorado River Basin Conservation programs are a new concept, it has several years of awarding agreements through drought contingency plans, and experience implementing those programs minimizes risk in the current activity.
Financial Standing of Recipients	According to BOR, agreements will include a reporting process that allows it to validate the recipient’s obligation before payments are made to the recipient. Further, the implementing office will be required to validate and verify the accuracy of a payment request against the agreement before sending payment. For the Upper Colorado River Basin, verification plans are required for each recipient and must be met before receiving final payment from UCRC.
Verifying Conserved Amounts	According to BOR, when submitting an application for funding, entities must identify their methodology for reduction in water use, include providing supporting information that documents the estimate of water saved, and provide a description of how they will verify and document reduction of water usage. For the Upper Colorado River Basin, projects must include a verification plan and will be reviewed by the State where the project is located.



Reporting and Oversight

Although BOR identified these three risks, we note that there is a potential for additional risks. For example, because funds must be obligated by FY 2026, funding for specific long-term projects may not be obligated by that point and projects may accordingly not be initiated.

In the past, our work has identified circumstances in which BOR did not properly oversee contracts, grants and cooperative agreements. For example, in a 2016 report, we found that BOR did not have the legal authority to enter into a cooperative agreement with a Klamath River basin water authority to mitigate water use.¹⁷ In another report, we identified areas where BOR could improve oversight of construction projects using proper tracking and documentation.¹⁸

Reporting

The IRA (§ 50233(c)) requires the Secretary of the Interior to submit an annual report to Congress that describes any funds expended from the \$4 billion appropriated for drought mitigation. The first annual report was required to be submitted no later than 1 year after the IRA's enactment, making it due in August 2023. An internal memorandum dated November 7, 2023, stated that the "initial report to Congress has been completed by [BOR] and it is currently in routing to Congress." In February 2024, a BOR official told us it is their understanding that this report is with the Office of Management and Budget.

¹⁷ *Audit of the Bureau of Reclamation's Klamath Basin Water User Mitigation Program* (Report No. 2015-WR-080), issued October 2016, <https://www.doi.gov/reports/audit/audit-bureau-reclamations-klamath-basin-water-user-mitigation-program-0>.

¹⁸ See *Improvements Needed in the Bureau of Reclamation's Oversight of Tribal Rural Water Projects* (Report No. 2016-WR-026) issued July 2017, <https://www.doi.gov/reports/inspection-evaluation/improvements-needed-bureau-reclamations-oversight-tribal-rural-water>.



Scope and Methodology

We conducted our inspection in accordance with the *Quality of Standards for Inspection and Evaluation* as put forth by the Council of the Inspectors General on Integrity and Efficiency. To accomplish our objectives, we obtained background information on the current drought and drought mitigation programs; obtained prior and current work related to BOR; gathered data about drought mitigation programs (IRA or otherwise); and discussed details with BOR's leadership to determine how it plans to spend funds, manage oversight, and reduce risk. Information in this flash report has been gathered directly from BOR or from publicly available sources.

LOOKING AHEAD

Our planned oversight efforts of BOR's drought mitigation strategies and activities related to the IRA include the following:

- We will review program information and plans related to the IRA.
- We will review BOR and its partners' actions intended to protect the Colorado River System, specifically efforts by funding recipients in the Lower Colorado River Basin and the Upper Colorado River Commission, as well as State and Tribal partners working to restore the Salton Sea.

To prevent fraud, waste, and abuse, our office anticipates that we will regularly:

- Host discussions and provide training to DOI employees, grant recipients, and contractors.
- Enhance detection through data analysis and the development of sources of investigative information.
- Improve oversight through focused training of investigators, auditors, and inspectors.
- Coordinate oversight efforts throughout the Inspector General community and share results, trends, and best practices.

Photo Sources

p. 1: OIG, p. 2: U.S. Geological Survey and MNStudio/stock.adobe.com, p. 4: Rawpixel.com/stock.adobe.com, p. 6: NPS, p. 7: BOR, p. 8: OIG, p. 10: ryan/stock.adobe.com, p. 11: Mindscape studio/shutterstock.com.



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