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Management of the Colorado River: Water Allocations, Drought, and the Federal Role

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SUMMARY

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Management of the Colorado River: Water Allocations, Drought, and the Federal Role

The Colorado River Basin covers more than 246,000 square miles in seven U.S. states and Mexico. Pursuant to federal law, the Bureau of Reclamation (Reclamation, part of the Department of the Interior) manages much of the basin's water supplies through a system of storage reservoirs. Colorado River water is used primarily for agricultural irrigation and municipal and industrial (M&I) purposes; it is also important for tribal uses, hydropower production, fish and wildlife, and recreational uses. Dating to the early 2000s, reservoir storage levels throughout the basin have fallen. Pursuant to existing authorities, the Secretary of the Interior, through Reclamation, went through a process to put in place "long-term" (post-2026) operational changes for the Colorado River system.

River Management

A collection of compacts, treaties, statutes, and other authorities govern Colorado River allocations and apportionments. The foundational management document, the Colorado River Compact of 1922, established a framework to apportion water supplies between the river's Upper and Lower Basins, divided at Lee Ferry, AZ. The compact allocated 7.5 million acre-feet (MAF) annually to each basin, and a 1944 treaty made an additional 1.5 MAF in annual flows available to Mexico. A Supreme Court case and related decrees inform the Secretary of the Interior's management of the delivery of all water below Hoover Dam.

Consumptive use plus other water losses (e.g., evaporation) on the Colorado River typically exceed the basin's flows. This imbalance, coupled with a long-term drought dating to 2000, has stressed basin water supplies. Reclamation closely tracks the status of two large reservoirs—Lake Powell in the Upper Basin and Lake Mead in the Lower Basin—as indicators of basin storage conditions. Since the onset of dry conditions in the early 2000s, storage levels at these reservoirs have fallen. To alleviate these trends, water releases from both lakes have been tied to specific water storage levels. Since 2020, Reclamation has conserved Lower Basin storage in Lake Mead through reduced water deliveries to Arizona, Nevada, and Mexico. In the Upper Basin, dwindling supplies in Lake Powell could jeopardize hydropower generation and Lower Basin releases from Glen Canyon Dam. As a result, Reclamation has transferred water from upstream reservoirs to Lake Powell while also reducing releases to the Lower Basin.

Efforts to Address Drought

The federal government has led multiple efforts to improve the basin's water supply outlook, resulting in agreements in 2003, 2007, 2019, and 2024 that reduced water use and increased operational flexibilities, among other things. In the most recent agreement, the three Lower Basin states agreed to conserve a total of 3.0 MAF from 2023 through 2026, much of which was compensated with funds approved by Congress in P.L. 117-169 (commonly referred to as the Inflation Reduction Act). Notwithstanding these efforts, hydrologic conditions throughout the basin continued to deteriorate through 2026.

With previous agreements set to expire at the end of 2026, Reclamation led an effort to study and implement operations that account for the realities of the basin's hydrology. Upper and Lower Basin state leaders proposed separate long-term plans in 2024 but could not agree on a basin-wide, long-term approach. On August 21, 2026, Reclamation finalized its action plan as laid out in an earlier environmental impact statement (EIS). Reclamation's new approach is to implement a 10-year framework with operational "guardrails," to be implemented in 2-year operations plans. It includes reductions to Lower Basin water supplies beyond current levels, potentially of as much as 3.6 MAF per year. It also allows Lake Powell releases to the Lower Basin as low as 5.0 MAF per year and allows the transfer of water from Upper Basin reservoirs to Lake Powell, among other things. The changes took effect in October 2026.

Congressional Role

Congress funds and oversees management of the basin's federal water and hydropower facilities and has previously approved legislation affecting water supplies and authorizing water shortage plans and drought mitigation funding. In considering basin operations, Congress may weigh whether to act on secretarial requests for new or modified authorities, or whether to issue other authorities and/or directives for river management. Congress may also be asked to enact new funding and authorities to mitigate the effect of cuts under the EIS, and/or to fund the construction of new or modified infrastructure (e.g., modifications to Glen Canyon Dam to facilitate Lower Basin water deliveries).

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Introduction

From its headwaters in Colorado and Wyoming to its terminus in the Gulf of California, the Colorado River Basin covers more than 246,000 square miles. The basin spans seven U.S. states (Wyoming, Colorado, Utah, New Mexico, Arizona, Nevada, and California) and two countries (the United States and Mexico). Pursuant to federal law, the Bureau of Reclamation (Reclamation), a component of the Department of the Interior (DOI), plays a prominent role in the management of the basin's waters. In the Lower Basin (i.e., Arizona, Nevada, and California), the Secretary of the Interior (Secretary), acting through Reclamation, also serves as *water master*, a role that elevates the status of the federal government in basin water management.[1] The federal role in managing Colorado River water is magnified by the multiple federally owned and operated water storage and conveyance facilities in the basin, which provide low-cost water and hydropower supplies, as well as the basin's numerous federally recognized Tribes.

Since the onset of dry conditions in the early 2000s, storage levels at the basin's federal reservoirs have fallen. Despite efforts to conserve water, storage levels throughout the basin have continued to fall, and most of the current agreements to conserve supplies expire in 2026. In August 2026, the Secretary finalized a 10-year framework (October 1, 2026, through 2036) for basin operations,[2] to be implemented in 2-year increments beginning with 2026-2028.

Congress has previously been interested in the Colorado River because of the multiple federally authorized facilities in the basin and the importance of basin water management to regional and national economies. Congress may consider issues related to basin water management under Reclamation's new operational regime, including mitigation for potential environmental and economic effects of actions identified in the 2026 record of decision (ROD), new and/or amended federal authorities (if needed), and conservation funding.

This report provides background on management of the Colorado River, with a focus on recent developments. It also discusses the congressional role in the management of basin waters, including current and potentially forthcoming issues facing Congress.

Basin Background

Colorado River water is used primarily for agricultural irrigation and municipal and industrial (M&I) purposes. The river's flow and stored water also are important for hydropower production, fish and wildlife, and recreation, among other uses. A majority of basin water supplies (70%) are used to irrigate 5.5 million acres of land; basin waters also provide M&I water supplies to nearly 40 million people.[3] Some of the area that depends on the river for its water supplies is outside of

[1] As discussed later in "Boulder Canyon Project Act," the Boulder Canyon Project Act of 1928 made the Secretary of the Interior responsible for the distribution (via contract) of all Colorado River water delivered below Hoover Dam (i.e., the Lower Basin), and authorized such regulations as necessary to enter into these contracts. Subsequent court decisions confirmed the Secretary's power to apportion surpluses and shortages among and within Lower Basin states; this forms the basis for the designation Lower Basin *water master*. No similar authorities or designations have been provided for the Upper Basin.

[2] Department of the Interior (DOI), *Record of Decision, Decision Framework for Colorado River Guidelines: Coordinated Operations of Lake Powell and Lake Mead (2027-2036)*, August 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/decision-doc/P26_RecordofDecision_Final.pdf (hereinafter DOI, *2026 ROD*). "Water year" refers to the period from October 1 through September 30 that is used for monitoring precipitation and generally accords with the supply and demand cycle for the river. Reclamation, "Reclamation Releases Draft Environmental Review for Post-2026 Colorado River Operations," press release, January 9, 2026, https://www.usbr.gov/newsroom/news-release/5263.

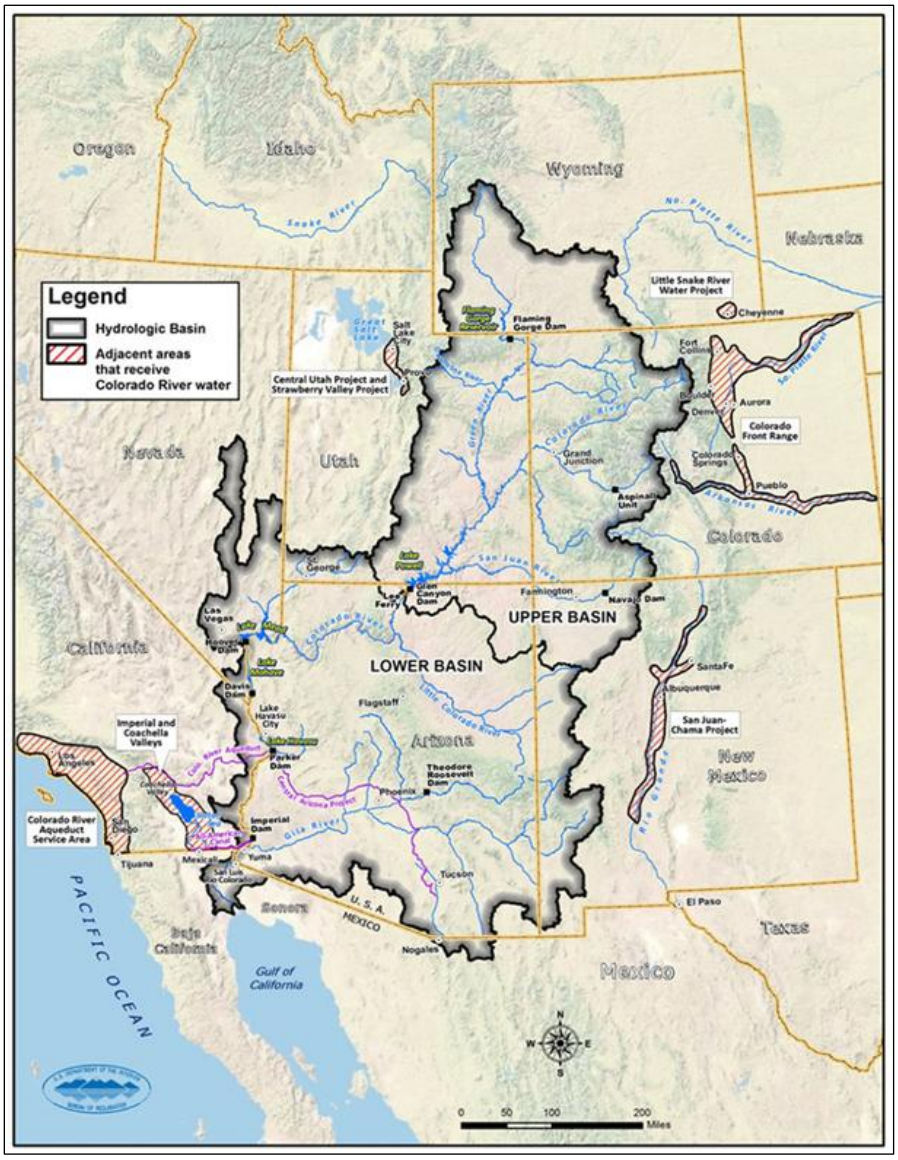
[3] DOI, *2026 ROD*, p. 5.

the drainage area of the Colorado River Basin. Storage and conveyance facilities on the Colorado River provide trans-basin diversions that serve areas such as Cheyenne, WY; multiple cities in Colorado's Front Range (e.g., Fort Collins, Denver, Boulder, and Colorado Springs, CO); Provo, UT; Albuquerque and Santa Fe, NM; and Los Angeles, San Diego, and the Imperial Valley in Southern California (**Figure 1**). Colorado River hydropower facilities can provide up to 4,200 megawatts of electrical power per year.[4] The river also provides habitat for a wide range of species, including several species listed under the federal Endangered Species Act (ESA; 16 U.S.C. §§1531-1544). It flows through seven national wildlife refuges and 11 National Park Service (NPS) units; these and other areas of the river support important recreational opportunities.[5]

[4] Reclamation, *Colorado River Basin Water Supply and Demand Study*, December 2012, https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html, p. 3 (hereinafter Reclamation, *Colorado River Basin Water Supply and Demand Study*).

[5] Reclamation, *Colorado River Basin Water Supply and Demand Study*.

Figure 1. Colorado River Basin and U.S. Areas That Import Colorado River Water



Source: Bureau of Reclamation, *Colorado River Basin Water Supply and Demand Study*, 2012.

Precipitation and runoff in the basin are highly variable. Water conditions on the river depend largely on snowmelt in the basin's northern areas. From 1906 to 2024, natural flows in the Colorado River Basin averaged about 14.6 million acre-feet (MAF) annually.[6] Flows have dipped significantly since 2000; annual natural flows from 2000 to 2024 averaged approximately 12.4 MAF per year.[7] Climate change impacts, including warmer temperatures, may further increase the

[6] CRS analysis of Reclamation, "Provisional Natural Flow Data, 1906-2024," https://www.usbr.gov/lc/region/g4000/NaturalFlow/LFnatFlow1906-2024.2024.9.12.xlsx. Hereinafter, "Reclamation Flow Data."

[7] CRS analysis of Reclamation Flow Data.

likelihood of prolonged dry conditions in the basin.[8] In most years, consumptive use of basin waters is considerably more than flows, resulting in drawdown of basin storage.

Congress plays a prominent role in the management of the Colorado River. Congress created Reclamation's unique Colorado River authorities, and authorizes, funds, and oversees Reclamation's management of Colorado River Basin facilities (including facility operations and programs to protect and restore endangered and threatened species). Congress also approved and continues to consider Indian water rights settlements involving Colorado River waters, and development of new and expanded water storage in the basin. Congress has also approved funding in addition to annual appropriations to mitigate drought and stretch basin water supplies and added new authorities for Reclamation to combat the basin's dry conditions and enter into agreements with Colorado River water users (i.e., contractors).

The Law of the River refers to a collection of compacts, treaties, statutes, and other authorities that govern Colorado River allocations and apportionments.[9] In the latter part of the 19th century, interested parties in the Colorado River Basin began to recognize that local interests alone could not solve the challenges associated with development of the Colorado River. Plans conceived by parties in California's Imperial Valley to divert water from the mainstream of the Colorado River were thwarted because these proposals were subject to the sovereignty of both the United States and Mexico.[10] The river also presented engineering challenges, such as deep canyons and erratic water flows, and economic hurdles that prevented local or state groups from building the necessary storage facilities and canals to provide an adequate water supply. In part because local or state groups could not resolve these "national problems," Congress considered options to control the Colorado River and resolve potential conflicts between the states.[11] In an effort to resolve these conflicts and avoid litigation, Congress gave its consent for the basin states to enter into an agreement to apportion Colorado River water supplies between the river's Upper and Lower Basins in 1921.[12]

The below sections discuss the resulting agreement, the Colorado River Compact, as well as key statutory authorities, the Supreme Court's decision in *Arizona v. California*, and other documents and agreements that form the basis of the Law of the River.

Colorado River Compact

The Colorado River Compact of 1922, negotiated by the seven basin states and the federal government, was initially signed by all but one basin state (Arizona).[13] Under the compact, the

[8] Bradley Udall and Jonathan Overpeck, "The Twenty-First Century Colorado River Hot Drought and Implications for the Future," *Water Resources Research*, vol. 53, no. 3 (March 2017), pp. 2404-2418.

[9] For an example of how courts characterize the Law of the River, see Navajo Nation v. Dep't of the Interior, 26 F.4th 794, 800 (9th Cir. 2022), *rev'd on other grounds*, Arizona v. Navajo Nation, 599 U.S. 555 (2023).

[10] Arizona v. California, 373 U.S. 546 (1963).

[11] S. Doc. No. 67-142 (1922). For example, the states in the Upper Basin (Colorado, Wyoming, Utah, and New Mexico), where the majority of the river's runoff originates, feared that a storage facility making water available downstream might form a basis for claims to priority access to basin waters by Lower Basin states before Upper Basin states could develop means to access their share.

[12] Ch. 72, 42 Stat. 171 (1921). In lieu of litigation, interstate compacts have historically been a preferred means of allocating water among states, among other uses. Pursuant to the U.S. Constitution, Article I, Section 10, Clause 3, no such compacts can be entered into without the consent of Congress. In 2024, the Supreme Court ruled that litigation involving an interstate compact in which the United States intervenes with particular claims cannot be settled without the United States' consent. Texas v. New Mexico, 602 U.S. 943 (2024).

[13] Because the Colorado River Compact of 1922 did not specify the apportionments for individual states, Arizona (continued...)

states established a framework to apportion the water supplies between the Upper Basin and the Lower Basin, with the dividing line between the two basins located at Lee Ferry, AZ,[14] below the confluence of the Colorado and Paria Rivers near the Utah border.[15] Each basin was apportioned 7.5 MAF annually for beneficial consumptive use, and the Lower Basin was given the right to increase its beneficial consumptive use by an additional 1 MAF annually. The agreement also required that Upper Basin states release (i.e., not deplete) at least 75 MAF to the Lower Basin over any 10-year period, thus allowing for averaging over the period to make up for low-flow years.[16] The compact did not address allocations within states, or between states (i.e., inter- or intrastate allocations of water, which it left to future agreements and legislation), nor did it address tribal rights or other rights that existed at the time the compact was finalized.[17] The compact also contemplated how the basins could share the burden of provisioning water to Mexico, the river's natural terminus, the details of which were addressed in subsequent international agreements.[18] The compact was not to become binding until it had been approved by the legislatures of each of the signatory states and by Congress.

Boulder Canyon Project Act

Congress approved and modified the Colorado River Compact in the Boulder Canyon Project Act (BCPA) of 1928.[19] The BCPA ratified the compact, and authorized the construction of a federal facility to impound water in the Lower Basin (Boulder Dam, later renamed Hoover Dam) and of related facilities to deliver water in Southern California (e.g., the All-American Canal, which delivers Colorado River water to California's Imperial Valley). The BCPA apportioned the Lower Basin's 7.5 MAF per year among the three Lower Basin states: 4.4 MAF per year to California, 2.8 MAF to Arizona, and 300,000 acre-feet (AF) to Nevada, with the states to divide any surplus waters among them. It also directed the Secretary of the Interior to serve as the sole contracting authority for Colorado River water use in the Lower Basin and authorized several storage projects for study in the Upper Basin.

Congress's approval of the compact in the BCPA was conditioned on a number of factors, including ratification of the compact by California and five other states (thereby allowing the compact to become effective without Arizona's concurrence), and California agreeing by act of its legislature to limit its water use to 4.4 MAF per year and not more than half of any surplus

initially refused to sign and ratify the agreement out of concern that rapidly growing California would lay claim to most of the Lower Basin's share of water. Arizona signed and ratified the compact in 1944.

[14] *Lee Ferry* is the dividing line between basins designated in the compact. *Lees Ferry* (or *Lee's Ferry*), approximately 1 mile upstream from that point, is the location of the USGS streamgage that has measured flows dating to 1921. After the compact was signed, the Lees Ferry streamgage, along with a gage on the Paria River, became the source of measurements used to determine compliance with the compact.

[15] Arizona receives water under both the Upper and the Lower Basin apportionments, because parts of the state are in both basins.

[16] Pursuant to later agreements (i.e., the U.S.-Mexico Water Treaty) and operating criteria (the Long-Term River Operating Criteria, or LROC), the Upper Basin is to release water to the Lower Basin at a rate of 8.23 million acre-feet (MAF) per year under most circumstances. For more information, see below section, "Colorado River Basin Project Act of 1968."

[17] Boulder Canyon Project Act (BCPA), 45 Stat. 64-65, as codified in 43 U.S.C. §617lq; cf. Boulder Canyon Project Adjustment Act, 54 Stat. 799, as codified in 43 U.S.C. §618m (containing similar savings clause language).

[18] Colorado River Compact Art. III(c). See below section, "1944 U.S.-Mexico Water Treaty."

[19] BCPA, Ch. 42, 45 Stat. 1057 (1928), codified as amended at 43 U.S.C. §§617t et seq.

waters. California met this requirement by passing the California Limitation Act of March 4, 1929, and the compact became effective on that date.[20]

1944 U.S.-Mexico Water Treaty[21]

As stated above, the Compact anticipated the potential need to share Colorado River waters with Mexico. In 1944, the United States signed a water treaty with Mexico to guide how the two countries share the waters of the Colorado River, among other purposes.[22] The treaty divided Colorado River waters among the two countries and created a governance framework with a binational body (the International Boundary and Water Commission, or IBWC) that would resolve disputes arising from the treaty's execution. The treaty requires the United States to provide Mexico with 1.5 MAF of Colorado River water annually, plus an additional 200,000 AF when a surplus is declared. It also provides that during extraordinary drought conditions, the United States may reduce deliveries to Mexico in similar proportion to reductions of U.S. consumptive uses.[23] The treaty has been supplemented by additional agreements between the United States and Mexico, known as *minutes*, regarding matters related to the treaty's execution and interpretation.[24]

Arizona v. California

Arizona ratified the Colorado River Compact in 1944, at which time the state began to pursue a federal project (later named the Central Arizona Project, or CAP) to bring Colorado River water to its primary population centers in Phoenix and Tucson. California opposed the project, claiming it had senior water rights based on its "first in time" use under the doctrine of prior appropriation and that any diversions from Colorado River *tributaries* should be included in Arizona's allotted 2.8 MAF under the Colorado River Compact.[25] In 1952, Arizona filed suit against California in the U.S. Supreme Court to settle these and other issues.[26]

[20] DOI also requested that California prioritize its Colorado River rights among users before the Colorado River Compact became effective; the state established priority among these users for water in both "normal" and "surplus" years in the California Seven-Party Agreement, signed in August 1931.

[21] For more information on the 1944 U.S.-Mexico Water Treaty and Colorado River water sharing issues with Mexico, see CRS In Focus IF12976, *1944 U.S.-Mexico Water Treaty: Issues in the 119th Congress*, by Elena H. Humphreys, Nicole T. Carter, and Charles V. Stern.

[22] The treaty also included water-sharing provisions relating to the Lower Rio Grande and Tijuana Rivers. See Treaty Between the United States of America and Mexico Respecting Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, U.S.-Mex., February 3, 1944, 59 Stat. 1219, https://www.usbr.gov/lc/region/pao/pdfiles/mextrety.pdf. Hereinafter "U.S.-Mexico Water Treaty." Mexico ratified the treaty on October 16, 1945, and the United States ratified the treaty on November 1, 1945. It became effective on November 8, 1945.

[23] U.S.-Mexico Water Treaty, Section III, Article 10

[24] International Boundary and Water Commission (IBWC), "Minutes Between the United States and Mexican Sections of the IBWC," https://www.ibwc.gov/minutes/. For more information on recent minutes, see section, "Agreements with Mexico."

[25] Historically, water in the western United States (versus riparian rights in the eastern portion) has been governed by some form of the *rule of prior appropriation*. Under this rule, the party that first appropriates water and puts it to *beneficial use* thereby acquires a vested right to continue to divert and use that quantity of water against claimants junior in time.

[26] Article III of the Constitution states that in all cases in which a state shall be a party, the Supreme Court has original jurisdiction. U.S. Constitution, Article III, §2, cl. 2. In original jurisdiction cases, the Supreme Court issues detailed decrees that are more akin to trial court judgments than the Supreme Court's usual appellate decisions.

Eleven years later, in the 1963 *Arizona v. California* decision, the Supreme Court ruled in favor of Arizona.[27] The ruling was notable in forgoing typical Reclamation deference to state law under the Reclamation Act of 1902 and formed the basis for the Secretary of the Interior's role as *water master* for the Lower Basin.[28] The Court determined that the BCPA serves as the framework for apportioning the Lower Basin's share of the mainstream waters of the Colorado River, neither the BCPA nor water contracts require any specific formula for apportioning shortages, and the Secretary of the Interior exercises considerable control in managing the delivery of water from Lake Mead to the Lower Basin. The Court determined that the Colorado River Compact guides resolution of disputes regarding allocations between basins, that statutory authority—in this case the BCPA—guides Lower Basin water allocations originating from the mainstream of the river, and that tributary allocations are reserved to the states.[29] Although California argued its historical use of the river trumped Arizona's rights to the Arizona allotment, the Court rejected this argument because Congress had spoken definitively to the contrary.[30]

A key element of the suit concerned the extent to which Arizona's Gila River diversions should count toward its allocation in the Colorado River Compact and BCPA. The Supreme Court concluded that the BCPA and compact's 7.5 MAF allocations within and between basins apply only to the mainstream of the Colorado River.[31] Tributary allocations, such as from Arizona's diversion of water from the Gila River, are governed under separate authorities.[32]

As detailed in the Supreme Court's opinion, Congress granted the Secretary of the Interior the exclusive authority to enter into contracts with Lower Basin users to apportion stored water pursuant to BCPA Section 5.[33] The resulting contracts determine how mainstream water is delivered to Lower Basin users. In the event of shortages, the Secretary of the Interior has discretion to determine how to divide the burden of shortages in the Lower Basin among the three states, within the parameters of the BCPA and water contracts.[34] The Court clarified that DOI is not bound by a single approach to addressing shortages and acknowledged that one valid option could be to reduce Lower Basin deliveries proportionally to statutory allocations of the first 7.5

[27] The 1963 Supreme Court decision in *Arizona v. California* is the first in a line of Supreme Court decisions and orders in the same litigation that address water allocation disputes within the Lower Basin. 373 U.S. 546, 601 (1963), 376 U.S. 340 (1964) (order issued), 383 U.S. 268 (1966) (amending judgment), 466 U.S. 144 (1984) (amending order), 530 U.S. 392 (2000) (subsequent determination), 531 U.S. 1 (2000) (supplemented), 547 U.S. 150 (2006) (consolidated decree); cf. California v. United States, 438 U.S. 645 (1978).

[28] Pursuant to Section 8 of the Reclamation Act of 1902 (32 Stat. 388), Reclamation is not to interfere with state laws "relating to the control, appropriation, use, or distribution of water used in irrigation," and "the Secretary of the Interior, in carrying out provisions of the Act, shall proceed in conformance with such laws." However, the Court in *Arizona v. California* noted that the Secretary must be able to manage the projects of the Colorado River Basin without being subject to "the varying, possibly inconsistent, commands of the different state legislatures." The Court therefore construed the Secretary's authority "to permit him, within the boundaries set down in the Act, to allocate and distribute the waters of the mainstream of the Colorado River." Arizona v. California, 373 U.S. at 587, 589-590 (1963).

[29] Arizona v. California, 373 U.S. at 564-165 (1963).

[30] Arizona v. California, 373 U.S. at 593 (1963).

[31] Arizona v. California, 547 U.S. at 161-166 (2006).

[32] Arizona v. California, 547 U.S. at 161-166 (2006). In addition to the Central Arizona Project legislation discussed in the next section, *Arizona v. California* also addressed Gila River disputes between Arizona and New Mexico prior to reaching the mainstream, which are beyond the scope of this report.

[33] 43 U.S.C. §617(d) and Arizona v. California, 373 U.S. at 593-594 (1963). As the Court explained, §5 of BCPA, which provides that "no person shall have or be entitled to have the use for any purpose of the water stored as aforesaid except by contract made as herein stated," serves as the basis for DOI's authority over all Lower Basin water deliveries.

[34] Arizona v. California, 373 U.S. at 594 (1963) (allowing the Secretary, "in case of shortage," to "adopt a method of proration" and to consider "priority of use, local laws and customs, or any other factors that might be helpful in reaching an informed judgment in harmony with the Act, the best interests of the Basin States, and the welfare of the Nation").

MAF (California 4.4/7.5, Arizona 2.8/7.5, and Nevada 0.3/7.5). DOI also has the authority and discretion to elect an alternate basis for apportioning shortages, subject to statutory constraints.[35] These constraints include the congressionally directed priorities for uses of the dam and reservoir, as well as limitations reflected in statute or the Colorado River Compact.[36]

In 1964, the Supreme Court issued a decree implementing its opinion in *Arizona v. California*.[37] The decree has been updated multiple times since, most recently in 2006.[38] The decree requires the United States to follow specific priorities for managing water flows from federal structures based on the BCPA.[39] In the event flows are insufficient to provide 7.5 MAF per year to the Lower Basin, the decree instructs DOI to account for *present perfected rights* (i.e., water rights already in place at the time the Colorado River Compact became effective) in order of their priority dates.[40] Additionally, the decree quantified water rights for five Tribes, although it did not address any rights or priorities of any additional Indian reservation.[41] After consulting with states and "major" contracting parties, DOI has the authority to apportion flows pursuant to the BCPA and other statutes based on the following priority use order: (1) river regulation, navigation improvements, and flood control; (2) irrigation and domestic uses, including the satisfaction of present perfected rights; and (3) hydroelectric power.[42] The decree also identifies specific quantities of present perfected rights and their date of recognition.[43]

Arizona v. California continues to play a significant role in Colorado River allocations. Multiple federal statutes pertaining to Colorado River Basin management refer to the *Arizona v. California*

[35] Arizona v. California, 373 U.S. at 592-593 (1963).

[36] Arizona v. California, 373 U.S. at 584 (1963) (referencing BCPA contract authority limitations including that irrigation and domestic uses are for "permanent service," that nothing should disrupt compact-designated allocations between basins, and that reclamation law provisions generally apply unless Congress explicitly provides otherwise); cf. BCPA, see footnote 19.

[37] Arizona v. California, 376 U.S. 340 (1964). The 1964 decree determined, among other things, that all water in the mainstream of the Colorado River below Lee Ferry and within the United States would be "water controlled by the United States" and that the Secretary would release water under only three types of designations for a year: "normal, surplus, and shortage."

[38] The Supreme Court supplemented the 1964 decree in 1966, 1979, 1984, and 2000; in 2006 it issued a consolidated decree incorporating the 1964 decree and supplements. See footnote 27. Among other things, the decrees set forth tribal water rights and present perfected rights of various parties in the Lower Basin.

[39] Arizona v. California, 376 U.S. 340 (1964); 547 U.S. 150 (2006) (allowing for Colorado River water releases to satisfy Mexico treaty obligations "without regard" to the priorities specified in the BCPA as referenced in subdivision II(A) of the decree).

[40] Arizona v. California, 547 U.S. 150 (2006), 154-155, 166. Present perfected rights are those existing as of June 25, 1929, in accordance with state law and exercised by actually diverting a specific quantity of water and/or reservation of water rights for federal use. Arizona v. California, 547 U.S. at 154.

[41] Arizona v. California. 373 U.S. at 598-602. Indian reserved water rights were first recognized by the Supreme Court in Winters v. United States, 207 U.S. 564, 575-577 (1908). Under the Winters doctrine, when Congress or the executive branch reserves land (i.e., for an Indian reservation), it implicitly reserves water sufficient to fulfill the purpose of the reservation. Because the establishment of Indian reservations (and, therefore, of Indian water rights) generally predated large-scale development of water resources for non-Indian users, the water rights of tribes often are senior to those of non-Indian water rights. For more information on the resulting settlements, see below section, "Tribal Water Rights" and CRS Report R44148, *Indian Water Rights Settlements*, by Charles V. Stern and Mariel J. Murray.

[42] Arizona v. California, 547 U.S. 150 at 154-156 (2006). The Court did not clarify what a constituted "major delivery contract." Arizona v. California, 547 U.S. at 155.

[43] Arizona v. California, 547 U.S. at 167-181 (2006). In sum, California, including tribal uses within the state, is entitled to approximately 3 MAF based on present perfected rights. Present perfected rights total approximately 1.05 MAF in Arizona and .000013 MAF in Nevada. California's rights include Imperial Irrigation District rights to 2.6 MAF (priority date of 1901), Palo Verde Irrigation District rights to 0.2 MAF (priority date of 1877), tribal rights totaling approximately 0.16 MAF with priority dates ranging from 1873 to 1903, and an additional 0.04 MAF from other uses.

decree and codify its requirements.[44] Following the decree, Arizona sought congressional authorization of a new project to access and convey its Colorado River supplies as provided for in the Supreme Court's decree. Congress authorized that project in 1968, on the condition that California's and Nevada's water deliveries receive priority over Arizona's during times of drought (see below, "Colorado River Basin Project Act of 1968").

Upper Basin Compact and Colorado River Storage Project Authorizations

Congress did not allow projects originally authorized for study in the Upper Basin under BCPA to move forward with federally funded construction until the Upper Basin states determined their individual water allocations, which occurred under the Upper Colorado River Basin Compact of 1948 (ratified by Congress in 1949).[45] Because there was some uncertainty as to the exact amount of water that would remain in the system after Lower Basin obligations were met, the Upper Basin Compact established state allocations in terms of percentage: Colorado (where the largest share of runoff to the river originates) is the largest entitlement holder in the Upper Basin, with rights to 51.75% of any Upper Basin flows after Colorado River Compact obligations to the Lower Basin have been met. Other states also received percentage-based allocations, including Wyoming (14%), New Mexico (11.25%), and Utah (23%). Arizona was allocated 50,000 AF in addition to its Lower Basin apportionment, in recognition of the portion of the state in the Upper Basin. **Figure 2** shows basin allocations by state following approval of the Upper Basin Compact (i.e., the allocations that generally guide current water deliveries). The Upper Basin Compact also established the Upper Colorado River Commission, an interstate administrative water agency composed of representatives from the Upper Basin states and a federal appointee, which is charged with administering the provisions of the Upper Basin Compact.[46]

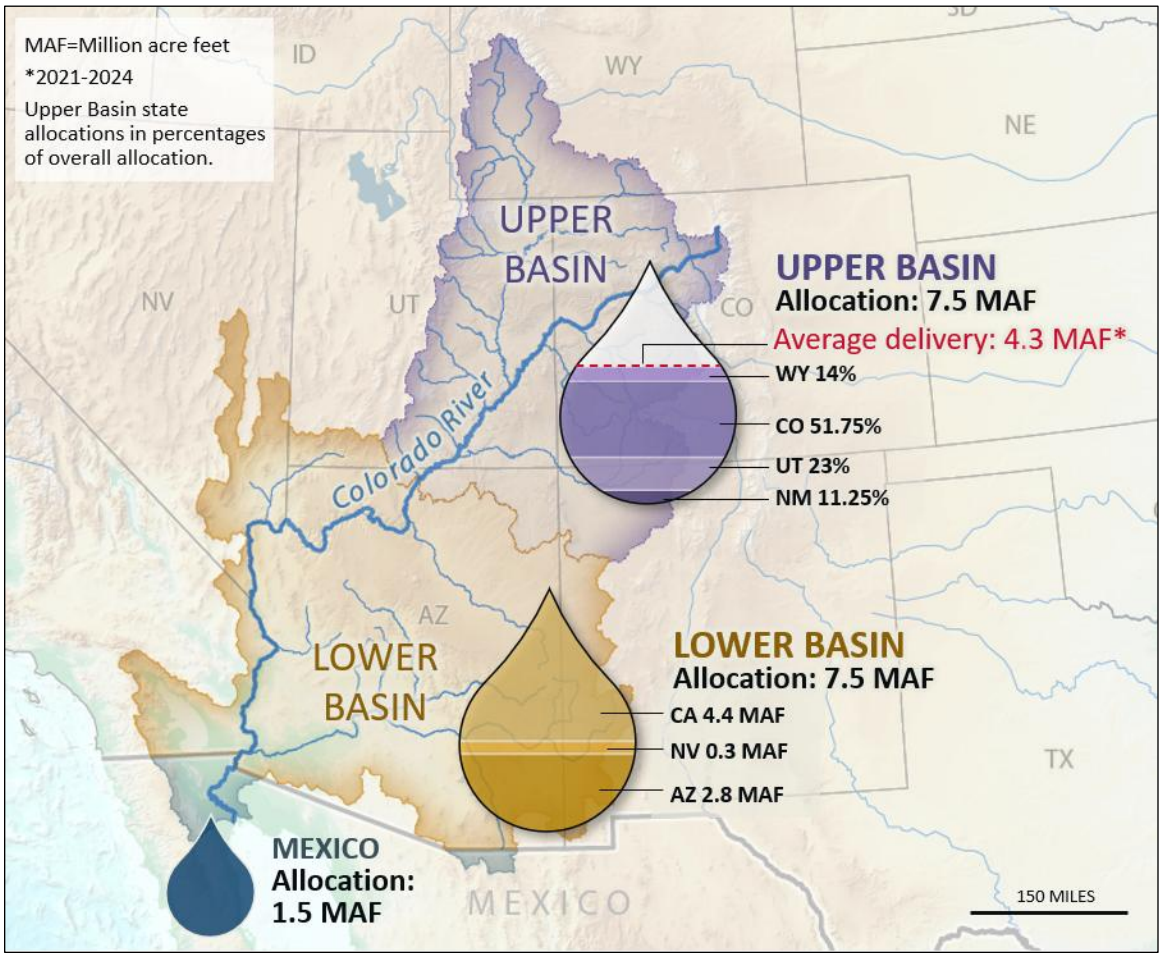
[44] See, for example, 43 U.S.C. §§1521, 1525.

[45] Upper Colorado River Basin Compact, 1948. 63 Stat. 31 (April 6, 1949).

[46] For more information, see Upper Colorado River Commission, "About the UCRC," http://www.ucrcommission.com/about-us/.

Figure 2. Colorado River Basin Allocations

(shown as percentage of allocation or million acre-feet [MAF])



Source: CRS, based on *Law of the River* documents at https://www.usbr.gov/lc/region/pao/lawofrvr.html, Upper Colorado River Basin Consumptive Use and Loss reporting at https://www.usbr.gov/uc/DocLibrary/reports.html, and data from U.S. Geological Survey Esri Data & Maps, 2017, Central Arizona Project, and Esri World Shaded Relief Map.

Note: Due to uncertainty about how much water would remain after meeting obligations to the Lower Basin and Mexico, most Upper Basin compact apportionments are in terms of percentages. For Upper Basin deliveries, 2021-2024 is the most recent reporting available.

Subsequent federal legislation paved the way for development of Upper Basin waters. The Colorado River Storage Project (CRSP) Act of 1956 (P.L. 84-485) authorized CRSP *initial unit* facilities of Glen Canyon, Flaming Gorge, Navajo, and Aspinall in the Upper Basin. The act also established the Upper Colorado River Basin Fund (Upper Basin Fund), which receives revenues collected in connection with the projects, to be made available for defraying project costs for operation, maintenance, and emergency expenditures.

Colorado River Basin Project Act of 1968

The Colorado River Basin Project Act (CRBPA), enacted in 1968, authorized additional projects in both the Upper and Lower Basins and made other changes to basin management. In the CRBPA, Congress authorized a major new water conveyance project in Arizona, the Central

Arizona Project (CAP),[47] as well as several other Upper Basin projects (e.g., the Animas La Plata and Central Utah projects). The CRBPA also established mechanisms for revenues from power generation from relevant Upper and Lower Basin facilities to be used to fund specific expenses in each respective basin, and provided direction on how to address shortages in the Lower Basin when the Colorado River cannot supply annual consumptive use of 7.5 MAF in Arizona, California, and Nevada.

The CRBPA represented a legislative compromise between the interests of California and Arizona. The act authorized the CAP but provides that, in the event of shortage conditions, California's 4.4 MAF allocation would have priority over CAP water supplies.[48] Specifically, when there are shortages, the CRBPA directs that diversions to the CAP are to be limited to ensure sufficient consumptive use for certain California and Nevada users whose water rights predate the CAP, consistent with the 1964 *Arizona v. California* decree.[49]

The CRBPA directed the Secretary of the Interior to develop a plan for meeting future water needs, develop criteria for operating federally authorized reservoirs in the basin to ensure that the reservoirs satisfy existing needs and legal obligations, and report annually on implementation of the plan.[50] Specifically, Section 602 of the CRBPA directed the Secretary of the Interior to consultatively develop operational criteria—known as *Long-Range Operating Criteria* (LROC)—for federally authorized Colorado River reservoirs in the following order of priority: (1) treaty obligations to Mexico, (2) the Colorado River Compact requirement for the Upper Basin to not deplete more than 75 MAF to Lower Basin states over any 10-year period, and (3) carryover storage to meet these needs.[51] The Secretary of the Interior may modify the criteria based on "actual operating experience or unforeseen circumstances" after correspondence and consultation with representatives of the basin states.[52] The Secretary of the Interior first adopted LROC in 1970 and last amended the criteria in 2005.[53] The LROC provides for coordinated Lake Mead and Lake Powell operations and, among other things, required that the Upper Basin release waters to the Lower Basin at an annual rate of at least 8.23 MAF under most circumstances (i.e., 7.5 MAF for the compact's nondepletion obligation, plus 750,000 AF [50%] for the Upper Basin's portion

[47] See 43 U.S.C. §§1501-1556. The Central Arizona Project was authorized in 43 U.S.C. §1521. Some portions of the Colorado River Basin Project Act (CRBPA) were codified as amendments to the CRSP Act. 43 U.S.C. §§620a, 620a-1.

[48] 43 U.S.C. §1521.

[49] See 43 U.S.C. §1525 (allowing for limitations to Arizona supplies sufficient to enable 4.4 MAF of annual consumption "by holders of present perfected rights, by other users in the State of California served under existing contracts with the United States by diversion works heretofore constructed, and by other existing Federal reservations in that State, and by users of the same character in Arizona and Nevada"). The legislation references Section II(B)(1) of the *Arizona v. California* 1964 Supreme Court decree, 376 U.S. 340, which is associated with the 1963 opinion Section III, Apportionment and Contracts in Time of Shortage, 373 U.S. 546, 592-594. See also 43 U.S.C. §1521(b) (allowing modifications to Central Arizona Project diversions).

[50] 43 U.S.C. §§1501(b), 1552.

[51] 43 U.S.C. §1552(a)-(b). The Grand Canyon Protection Act (P.L. 102-575) directs DOI to operate Glen Canyon Dam in a specific manner. In addition to compliance with laws governing Colorado River water apportionment, DOI must adopt criteria and operating plans separate from and in addition to the ones specified in Section 602 of the CRBPA consistent with Grand Canyon National Park values. However, the legislation states that the provisions are not intended to affect state water rights to Colorado River allocations that have been secured by "any compact, law, or decree." P.L. 102-575, §1802, 106 Stat. 4669 (1992). The CRBPA provides that if the federal government fails to comply with applicable law in operating Glen Canyon Dam, any affected state can sue to enforce its provisions in the Supreme Court. 43 U.S.C. §1551(c).

[52] 43 U.S.C. §1552(b).

[53] Operating Criteria, 70 *Federal Register* 15873 (March 29, 2005); Colorado River Reservoirs, Coordinated Long-Range Operations, 35 *Federal Register* 8951 (June 10, 1970). Through later legislation, Congress required that, in preparing the LROC and Annual Operating Plan, the Secretary of the Interior must consult the governors of the basin states and with the public, see Grand Canyon Protection Act of 1992, P.L. 102-575, §1804(c)(3), 106 Stat. 4669.

of U.S.-Mexico Water Treaty obligations). The LROC did not provide specific guidelines for annual operations; Reclamation eventually pursued these criteria in the 2007 Interim Guidelines. As discussed below, the 2007 guidelines and related supplemental agreements are set to expire at the end of 2026.[54]

Federal Water Storage and Operations

The Colorado River Basin's large surface water storage projects can store as much as 60 MAF, or about four times the Colorado River's annual flows, to help insulate water users from annual variability in flows. Thus, storage and operations in the basin receive considerable attention, particularly at the basin's two largest dams and their storage reservoirs: Glen Canyon Dam/Lake Powell in the Upper Basin (26.2 MAF of storage capacity) and Hoover Dam/Lake Mead in the Lower Basin (26.1 MAF of storage capacity). Reclamation and interested stakeholders closely monitor the status of these projects as an indicator of basin water supplies.

Reclamation's Glen Canyon Dam, completed in 1963 at the southern end of the Upper Basin, serves as the linchpin for Upper Basin storage and regulates flows from the Upper Basin to the Lower Basin, pursuant to the Colorado River Compact. From 2000 to 2020, it generated an average of approximately 3.8 billion kilowatt-hours (kWh) of electricity per year, which the Western Area Power Administration (WAPA) supplies to 5.8 million customers in Upper Basin states.[55] Other significant federal storage in the Upper Basin includes Reclamation's *initial units*: the Aspinall Unit in Colorado (including Blue Mesa, Crystal, and Morrow Point dams on the Gunnison River, with combined storage capacity of more than 1 MAF),[56] the Flaming Gorge Unit in Utah (including Flaming Gorge Dam on the Green River, with a capacity of 3.8 MAF), and the Navajo Unit in New Mexico (including Navajo Dam on the San Juan River, with a capacity of 1 MAF). The Upper Basin also contains 16 active *participating projects.* These reclamation projects were authorized under CRSP and subsequent legislation and were developed to use Colorado River Basin water for irrigation, M&I uses, and other purposes. Pursuant to the CRBPA, they also receive access to balances in the Upper Basin Fund to help defray the costs of project features that are beyond the ability of users to pay and receive access to low-cost hydropower generated elsewhere in the Upper Basin.[57]

Reclamation's Hoover Dam, completed in 1936, provides the majority of the Lower Basin's storage and generates on average about 4 billion kWh of electricity per year for customers in California, Arizona, and Nevada.[58] Also important for Lower Basin operations are Davis Dam/Lake Mohave, which regulates flows to Mexico under the 1944 Treaty, and Parker Dam/Lake Havasu, which impounds water for diversion into the Colorado River Aqueduct (thereby allowing for deliveries to urban areas in Southern California) and CAP (allowing for diversion to users in central Arizona). Further downstream on the Arizona/California border,

[54] See below section, "Recent Developments and Agreements."

[55] Statement of Reclamation Commissioner Camille Calimlim Touton in U.S. Congress, Senate Committee on Energy and Natural Resources, Subcommittee on Water and Power, 117th Cong., 2nd sess., May 25, 2022. For a more detailed discussion of the effects of long-term drought on Glen Canyon Dam, see CRS Report R47497, *Long-Term Drought and Glen Canyon Dam: Potential Effects on Water Deliveries and Hydropower*, by Charles V. Stern and Ashley J. Lawson.

[56] The Curecanti Unit was renamed the Aspinall Unit in 1980 in honor of U.S. Rep. Wayne N. Aspinall of Colorado.

[57] In total, 16 of the 22 Upper Basin projects authorized as part of CRSP have been developed. (Of the six remaining projects, five were determined by Reclamation to be infeasible, and Congress deauthorized the Pine River Extension Project.) For a complete list of projects, see Reclamation, "Colorado River Storage Project," https://www.usbr.gov/uc/rm/crsp/.

[58] Reclamation, "Hoover Dam Frequently Asked Questions and Answers," accessed October 30, 2023, https://www.usbr.gov/lc/hooverdam/faqs/powerfaq.html.

Imperial Dam (a diversion dam) diverts Colorado River water to the All-American Canal for use in some of the basin's largest agricultural areas in California's Imperial and Coachella Valleys.

Groundwater storage in the Colorado River Basin is generally regulated by individual basin states and constitutes an important related source of water often drawn upon by users as a complement or alternative to surface water supplies. Groundwater accounts for a large portion of basin supplies, and reliance on the source is expected to increase with surface water storage declines. Recent studies have indicated that groundwater storage levels in the basin have been declining more rapidly than levels of surface water and may further jeopardize the basin's water supply outlook.[59]

Annual Operations

Reclamation monitors Colorado River reservoir levels and projects them 24 months into the future in monthly studies (called *24-month studies*).[60] The studies take into account forecasted hydrology, reservoir operations, and diversion and consumptive use schedules to model a single scenario of reservoir conditions. The studies inform operating decisions by Reclamation looking one to two years into the future. They express water storage conditions at Lake Mead and Lake Powell in terms of elevation, as feet above mean sea level.

In addition to the 24-month studies, the CRBPA requires the Secretary of the Interior to transmit to Congress and the governors of the basin states, by January 1 of each year, an *Annual Operating Plan* (AOP).[61] In the AOP, Reclamation describes the actual operation for the preceding operating year and the projected operation for the coming year.[62] The AOP's projected January 1 water conditions for the upcoming calendar year establish a baseline for future annual operations.[63]

Compared to storage levels in 2000, combined storage at Lake Mead and Lake Powell has dropped significantly (**Figure 3**). Dating to the adoption of operational guidelines in 2007 (see below section, "2007 Interim Guidelines/Coordinated Operations for Lake Powell and Lake Mead"), Reclamation has tied operations of Hoover and Glen Canyon Dams to specific storage pool elevations at Lake Mead and Lake Powell. These efforts are discussed more in the below section "Recent Developments and Agreements."

[59] For example, see Karem Abdelmohsen et al., "Declining Freshwater Availability in the Colorado River Basin Threatens Sustainability of Its Critical Groundwater Supplies," *Geophysical Research Letters*, vol. 52, no. 10 (May 2025), https://doi.org/10.1029/2025GL115593.

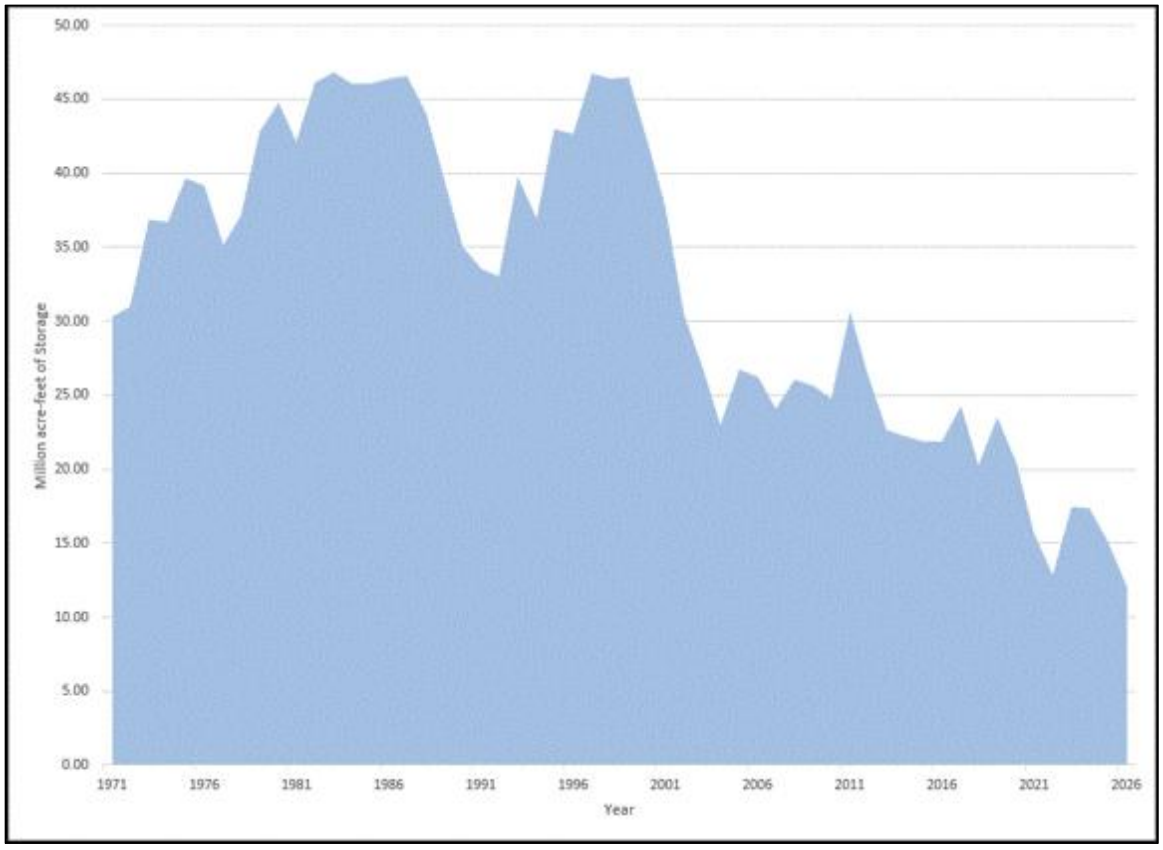
[60] Current 24-month studies, as well as two- and five-year probable projections of Lakes Mead and Powell elevations, are available at Reclamation, "Colorado River System Projections Overview," https://www.usbr.gov/lc/region/g4000/riverops/coriver-projections.html.

[61] P.L. 90-537, §404.

[62] The operating year for Glen Canyon Dam runs from October 1 through September 30; the operating year for Hoover Dam runs from January 1 through December 31.

[63] Current and historical AOPs are available at Reclamation, "Annual Operating Plan for Colorado River Reservoirs," https://www.usbr.gov/uc/water/rsvrs/ops/aop/.

Figure 3. Combined Storage at Lakes Mead and Powell, 1971-2026



Source: Congressional Research Service, using Bureau of Reclamation data at https://data.usbr.gov/visualizations/reservoir-conditions/.

Recent Conditions

In summer 2026, Lake Mead and Lake Powell reached record low storage levels. To prevent Lake Powell falling below "minimum power pool" (i.e., 3,490 feet, or the minimum elevation needed to run the dam's hydroelectric plant),[64] in 2026 Reclamation transferred 1.0 MAF from Flaming Gorge Reservoir to Lake Powell and reduced releases to the Lower Basin from Glen Canyon Dam by up to 1.48 MAF, to 6.0 MAF per year (**Figure 4**).[65] The latter release reductions are expected to result in additional storage losses downstream at Lake Mead (**Figure 5**). These and other previous release reductions could lead to the basin's first ever *compact call* (a term referring to enforcement of compact requirements by which the Lower Basin states attempt to force deliveries of Colorado River water by Upper Basin states pursuant to compact terms).[66] Reclamation is mitigating water supply conditions in the Lower Basin by implementing mandatory delivery curtailments for Arizona and Nevada, in accordance with previous plans, and

[64] For more on these conditions, see CRS Report R47497, *Long-Term Drought and Glen Canyon Dam: Potential Effects on Water Deliveries and Hydropower*, by Charles V. Stern and Ashley J. Lawson.

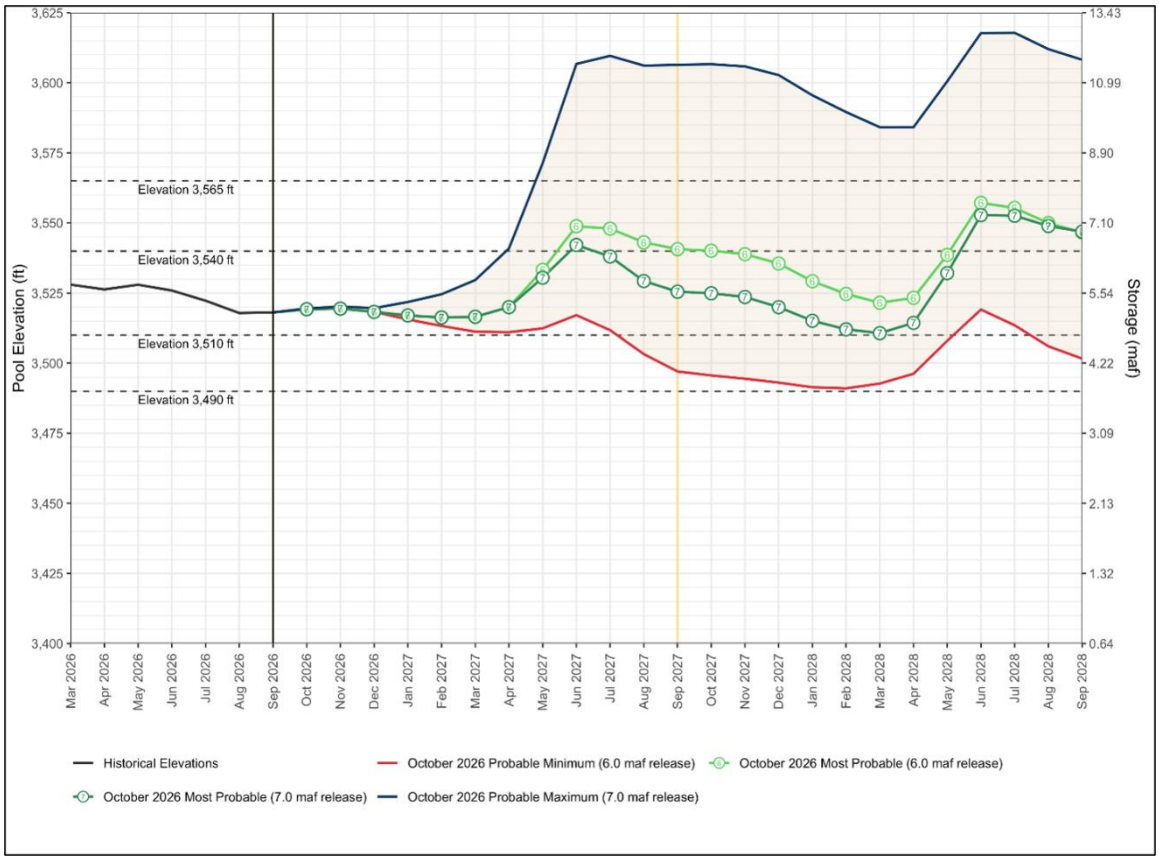
[65] Reclamation, "Reclamation Acts to Protect Colorado River System During Historic Drought," press release, April 17, 2026, https://www.usbr.gov/newsroom/news-release/5326.

[66] For a more detailed discussion of a potential compact call, see Anne Castle and John Fleck, "The Risk of Curtailment Under the Colorado River Compact," November 20, 2019, https://ssrn.com/abstract=3483654; Save the Colorado v. Semonite, No. 18-CV-03258-CMA, 2024 WL 4519201, at *14&n24 (D. Colo. Oct. 16, 2024).

is implementing a new set of curtailments and other operational changes in both basins in 2027. (For additional information, see "Reclamation's Post-2026 Environmental Impact Statement and Record of Decision.")

Figure 4. Lake Powell Storage Elevations and Projections

(October 2026 inflow scenarios)

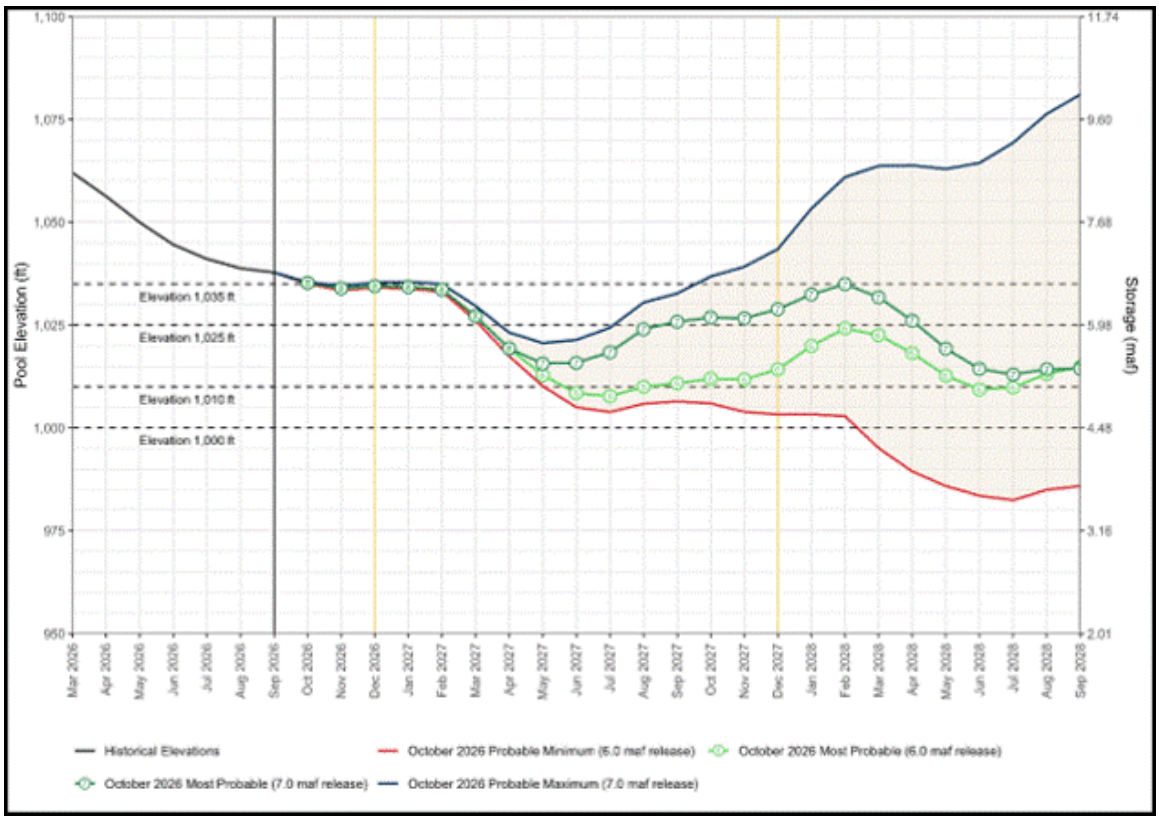


Source: Bureau of Reclamation, "24-Month Study Projections," https://www.usbr.gov/lc/region/g4000/riverops/24ms-projections.html.

Notes: maf = million acre-feet. "Most probable" forecasts in green are shown with 6.0 MAF/year and 7.0 MAF/year for Lake Powell releases.

Figure 5. Lake Mead Storage Elevations and Projections

(October 2026 inflow scenarios)



Source: Bureau of Reclamation, "24-Month Study Projections," https://www.usbr.gov/lc/region/g4000/riverops/24ms-projections.html.

Notes: maf = million acre-feet. "Most probable" forecasts in green are shown with 6.0 MAF/year and 7.0 MAF/year for Lake Powell releases.

Mitigating the Environmental Effects of Colorado River Basin Development

Construction of most of the Colorado River's water supply infrastructure predated major federal environmental protection statutes, such as the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. §§4321 et seq.) and the ESA. Thus, many of the environmental impacts associated with the development of basin resources were not originally taken into account. Over time, multiple efforts have been initiated to mitigate these effects, some of which are funded through basin hydropower revenues (see box, "Hydropower Revenues Funding Basin Activities"). Some of the highest-profile efforts have been associated with water quality (in particular, salinity control) and the effects of facility operations on endangered and threatened species. These efforts are discussed below.

Salinity Control

Salinity and water quality are long-standing issues in the Colorado River Basin. Parts of the Upper Basin are covered by salt-bearing shale (which increases salt content of the river's

inflows), and salinity content increases as the river flows downstream due to both natural leaching and return flows from agricultural irrigation. The 1944 U.S.-Mexico Water Treaty did not set water quality or salinity standards in the Colorado River Basin. After years of dispute between the United States and Mexico regarding the salinity of the water reaching Mexico's border, the two countries reached an agreement on August 30, 1973, with the signing of Minute 242.[67] The agreement guarantees Mexico that the average salinity of its treaty deliveries will be no more than 115 parts per million higher than the salinity content of the water diverted to the All-American Canal at Imperial Dam in Southern California. To control the salinity of Colorado River water in accordance with this agreement, Congress passed the Colorado River Basin Salinity Control Act of 1974, which authorized desalting and salinity control facilities to improve Colorado River water quality. The most prominent of these facilities is the Yuma Desalting Plant, which was largely completed in 1992 but has never operated at capacity due to cost and other factors.[68] In 1974, the seven basin states also established water quality standards for salinity through the Colorado River Basin Salinity Control Forum.[69]

Endangered Species Efforts and Habitat Improvements

Congress enacted the ESA in 1973. As the federal government listed some basin species under ESA in accordance with the act,[70] federal agencies and nonfederal stakeholders consulted with the U.S. Fish and Wildlife Service (FWS) to address the conservation of the listed species. As a result of these consultations, several major programs have been developed to protect and restore listed fish species in the Colorado River and its tributaries. Summaries of some of the key programs are below.

Upper Colorado Endangered Fish Recovery Program

The Upper Colorado Endangered Fish Recovery Program was established in 1988 to assist in the recovery of four species of endangered fish in the Upper Colorado River Basin.[71] Congress formally authorized this program in 2000.[72] The program is implemented through several stakeholders under a cooperative agreement signed by the governors of Colorado, Utah, and Wyoming; the Secretary of the Interior; and the Administrator of WAPA. The recovery goals of

[67] See IBWC, *Minute 242, Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River*, August 30, 1973, https://www.ibwc.gov/Treaties_Minutes/Minutes.html.

[68] The Yuma Desalting Plant's limited operations have been partly due to the cost of its operations (desalination can require considerable electricity to operate) and surplus flows in the Colorado River during some years. In lieu of operating the plant, high-salinity irrigation water has been separated from the United States' required deliveries to Mexico and disposed of through a canal that enters Mexico and discharges into wetlands called the Ciénega de Santa Clara, near the Gulf of California. Whether and how the plant should be operated and how the impacts on the Ciénega de Santa Clara from the untreated irrigation runoff should be managed remain topics of some debate in the basin and between Mexico and the United States.

[69] Additional information about the forum and related salinity control efforts is available at Colorado River Basin, "Salinity Control Forum," https://www.coloradoriversalinity.org/.

[70] Several listed species are found throughout the Colorado River Basin. Some are specifically found in the Colorado River, such as the razorback sucker (*Xyrauchen texanus*), bonytail chub (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), and humpback chub (*Gila cypha*). Consultation about the effects of federal agencies' actions on these species is required by 16 U.S.C. §1536(a).

[71] The fish species are the razorback sucker, bonytail chub, Colorado pikeminnow, and humpback chub. For more information, see Upper Colorado River Endangered Fish Recovery Program at http://www.coloradoriverrecovery.org/uc. For general background information on the Endangered Species Act (16 U.S.C. §§1531-1544), see CRS Report R46677, *The Endangered Species Act: Overview and Implementation*, by Pervaze A. Sheikh and Erin H. Ward.

[72] P.L. 106-392.

the program are to reduce threats to species and improve their status so they are eventually delisted from the ESA. Some of the actions taken in the past include providing adequate instream flows for fish and their habitat, restoring habitat, reducing nonnative fish, augmenting fish populations with stocked fish, and conducting research and monitoring. Reclamation is the lead federal agency for the program and provides the majority of federal funds for implementation. Other funding includes a portion of Upper Basin hydropower revenues from WAPA and funding from FWS; the states of Colorado, Wyoming, and Utah; and water users, among others.

San Juan River Basin Recovery Implementation Program

The San Juan River Basin Recovery Implementation Program was established in 1992 to assist in the recovery of ESA-listed fish species on the San Juan River, the Colorado's largest tributary.[73] The program is a partnership implemented under a cooperative agreement between DOI and the states of Colorado and New Mexico, the Jicarilla Apache Nation, the Navajo Nation, the Southern Ute Indian Tribe, and the Ute Mountain Ute Indian Tribe.[74] It is concerned with the recovery of the razorback sucker (*Xyrauchen texanus*) and Colorado pikeminnow (*Ptychocheilus lucius*). Congress authorized this program with the aim to protect the genetic integrity and population of listed species, conserve and restore habitat (including water quality), reduce nonnative species, and monitor species. The program is coordinated by FWS, and Reclamation is responsible for operating the Animas-La Plata Project and Navajo Dam on the San Juan River in a way that reduces effects on the fish populations. The program is funded by a portion of revenues from hydropower revenues from WAPA in the Upper Basin, Reclamation, the Bureau of Indian Affairs, and participating states. Recovery efforts for listed fish are coordinated with the Upper Colorado Endangered Fish Recovery Program.

Glen Canyon Dam Adaptive Management Program

The Glen Canyon Dam Adaptive Management Program was established in 1997 in response to a directive from Congress under the Grand Canyon Protection Act of 1992 to operate Glen Canyon Dam "in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established."[75] This program uses experiments to determine how water flows affect natural resources south of the dam. Reclamation is in charge of modifying flows for experiments, and the U.S. Geological Survey conducts monitoring and other studies to evaluate the effects of the flows.[76] The results are expected to better inform managers how to provide water deliveries and conserve species. Funding is provided by Reclamation and other agencies under DOI, including FWS, U.S. Geological Survey, Bureau of Indian Affairs, and the National Park Service.

Lower Colorado River Multi-Species Conservation Program

The Multi-Species Conservation Program (MSCP) is a multistakeholder initiative to conserve 27 species (8 listed under ESA) along the Lower Colorado River while maintaining water and power

[73] For more information, see U.S. Fish and Wildlife Service, "San Juan River Basin Recovery Implementation Program," https://www.fws.gov/southwest/sjrip/.

[74] It also includes participation by water development interests in Colorado and New Mexico.

[75] For more information, see Reclamation, Glen Canyon Dam Adaptive Management Program, "Glen Canyon Dam High Flow Experimental Release," https://www.usbr.gov/uc/progact/amp/ltemp.html.

[76] Regardless of the status and results of flow experiments, the total annual volume of water released from Glen Canyon Dam remains dictated by the Law of the River, as described above.

supplies for farmers, tribes, industries, and urban residents.[77] The MSCP began in 2005 and is planned to last for at least 50 years.[78] A biological opinion (BiOp) issued by the FWS in 1997 covers operations and maintenance activities conducted by Reclamation along the Colorado River from Lake Mead to the Southerly International Boundary; consultation was reinitiated in 2002, and a new BiOp was issued later that year.[79] The MSCP was created as a result of consultation under ESA. To achieve compliance under ESA, federal entities involved in managing water supplies in the Lower Colorado River Basin met with resource agencies from Arizona, California, and Nevada; Native American Tribes; environmental groups; and recreation interests to develop a program to conserve species along a portion of the Colorado River. Nonfederal stakeholders also applied for and received an incidental take permit under Section 10(a) of the ESA for their MSCP activities.[80] This permit was accompanied by a habitat conservation plan for the MSCP that formed the basis for the nonfederal part of the program.[81] A Lower Colorado River Multi-Species Conservation Program Implementing Agreement that integrated the federal and nonfederal activities in the MSCP was signed by stakeholders in 2005 and is effective for 50 years.[82] In 2022, a revised BiOp was issued for the MSCP to address the implementation of recent drought plans.[83] In 2024, a revised BiOp was issued for the MSCP to address changes in annual flows and conservation measures identified by Reclamation.[84] Reclamation is working to amend the MSCP and revise the incidental take permit under Section 10(a) for the MSCP.[85] Reclamation and FWS are also looking to extend the 2024 BiOp while the LCR MSCP is being amended to provide long-term coverage for increased reduction in flows.[86]

The objective of the MSCP is to create habitat for listed species, augment the populations of species listed under ESA, maintain current and future water diversions and power production, and abide by the incidental take statements for listed species under the ESA. In 2003, the estimated total cost of the program over its lifetime was approximately $626 million, split evenly between Reclamation (50%) and the states of California, Nevada, and Arizona (who collectively fund the

[77] The stakeholders include six federal and state agencies, six Tribes, and 36 cities and water and power authorities. Stakeholders serve more than 20 million residents in the region and irrigate 2 million acres of farmland. For more information, see Lower Colorado River Multi-Species Conservation Program at https://www.lcrmscp.gov/.

[78] The program was authorized under Subtitle E of Title IX of P.L. 111-11.

[79] U.S. Fish and Wildlife Service, *Reinitiation of Formal Section 7 Consultation on Lower Colorado River Operations and Maintenance - Lake Mead to Southerly International Boundary, Arizona, California and Nevada*, April 30, 2002, https://www.usbr.gov/lc/region/g2000/BO2002operations.pdf.

[80] The incidental take permit is valid for 50 years from its date of issuance and covers the implementation of the Lower Colorado River Multi-Species Conservation Program, diversions of water from the river, demand for and receipt of hydropower, and flow and nonflow actions along the Colorado River with the geographic scope of the permit.

[81] Lower Colorado River Multi-Species Conservation Program, *Final Lower Colorado River Multi-Species Conservation Program Volume II: Habitat Conservation Plan*, December 17, 2004, https://lcrmscp.gov/lcrm-prod/lcrm-prod/pdfs/hcp_volii_2004.pdf.

[82] Lower Colorado River Multi-Species Conservation Program, *Implementing Agreement*, April 4, 2005, https://lcrmscp.gov/lcrm-prod/lcrm-prod/pdfs/imp_agr_2005.pdf.

[83] U.S. Fish and Wildlife Service, *Biological Opinion for Enhanced Habitat Protection and Reduction in Colorado River Flows*, December 7, 2022, https://lcrmscp.gov/lcrm-prod/lcrm-prod/pdfs/FINAL%20BO%20LCR%20MSCP%2012072022_HWsigned.pdf.

[84] U.S. Fish and Wildlife Service, *Biological Opinion for the Short-Term Additional Reduction in Colorado River Flows*, April 8, 2024, https://lcrmscp.gov/lcrm-prod/lcrm-prod/pdfs/LCR%20MSCP%20Biological%20Opinion%202024_FINAL_HWsigned.pdf.

[85] For more information, see "Associated Biological Opinions" at https://www.usbr.gov/ColoradoRiverBasin/post2026/decision-doc/index.html.

[86] DOI, *2026 ROD*.

remaining 50%). The management and implementation of the MSCP is the responsibility of Reclamation, in consultation with a steering committee of stakeholders.

Hydropower Revenues Fund Colorado River Basin Activities

Hydropower revenues finance a number of activities throughout the Colorado River Basin. In the Lower Basin, the Colorado River Dam Fund uses revenues generated by the Boulder Canyon Project (i.e., Hoover Dam) to fund operational and construction costs for related Reclamation facilities. A separate fund, the Lower Colorado River Basin Development Fund, collects revenues from the Central Arizona Project (CAP), as well as from a surcharge on revenues from the Boulder Canyon and Parker-Davis Projects that was enacted under the Hoover Power Plant Act of 1984 (P.L. 98-381). These revenues are available without further appropriation toward defraying CAP operation and maintenance costs, salinity control efforts, and funding for Indian water rights settlements identified under the Arizona Water Settlements Act of 2004 (i.e., funding for water systems of the Gila River Indian Community and the Tohono O'odham Nation, among others). In the Upper Basin, the Upper Colorado River Basin Fund collects revenues from the initial units of the Colorado River Storage Project and funds operation and maintenance expenses, salinity control, the Glen Canyon Dam Adaptive Management Program, and endangered fish studies on the Colorado and San Juan rivers, among other things.

Source: Department of the Interior, *Department of the Interior Budget Appendix, FY2026 Budget Request.*

Tribal Water Rights

Tribal water rights are often senior to other uses on the Colorado River.[87] In the basin, tribal water diversions based on these rights typically come out of individual state allocations. There are 30 federally recognized Tribes in the Colorado River Basin, many of whom have settled or unresolved (i.e., currently claimed for use but unsettled) tribal water rights.[88] As of early 2026, 11 basin Tribes had reserved (i.e., held for future use) water rights claims that have not been quantified and settled; the total potential amount of these claims is unknown.[89] According to Reclamation, as of December 2020 Tribes held diversion rights to approximately 3.4 MAF per year of Colorado River water.[90] Previous studies noted that these Tribes were using just over half of their quantified rights.[91] In 2023, the Supreme Court held that the U.S. government does not have an affirmative duty to quantify or otherwise secure reserved rights beyond what is required under treaty; however, Tribes could otherwise pursue claims and litigation to quantify such claims.[92]

Because of the magnitude and seniority of tribal water rights, future decisions about the settlement and development of tribal water rights in the Colorado River Basin are likely to influence the availability of basin water resources for various uses. Increased consumptive water

[87] Tribal water rights claims typically arise out of the right of many tribes to water resources dating to treaties establishing their reservations. These water rights are often senior to those of non-Indian water rights holders because they date to the creation of the reservation (i.e., prior to the awarding of most state water rights). For more information on Indian water rights settlements, see. CRS Report R44148, *Indian Water Rights Settlements*, by Charles V. Stern et al.

[88] For a list of the Tribes, see Reclamation, "Colorado River Basin," https://www.usbr.gov/ColoradoRiverBasin/images/20220324-CRB-AllTribes-Map-2550x3300-LCB.png.

[89] CRS analysis of enacted Indian water rights settlements.

[90] Reclamation, *Review of the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, December 2020, p. 14, https://www.usbr.gov/ColoradoRiverBasin/documents/7d/7.D.Review_FinalReport_12-18-2020.pdf.

[91] Colorado River Research Group, *Tribes and Water in the Colorado River Basin*, June 2016, https://scholar.law.colorado.edu/books_reports_studies/173/. According to this study, tribal consumptive use in 2015 (including leasing of tribal water to nontribal entities) totaled 1.7 MAF of the 2.9 MAF in recognized diversion rights at that time.

[92] Arizona v. Navajo Nation, 599 U.S. 555, 568-70 (2023).

use by Tribes with existing quantified and settled water rights, and/or future settlement of claims and additional consumptive use of basin waters by Tribes with reserved rights, would exacerbate competition for basin water resources. At the same time, some Tribes have entered into arrangements to conserve water or lease their waters to other users; new agreements along these lines have the potential to secure water supplies for some nontribal users without other viable alternative sources of water.

Long-Term Drought and the Supply/Demand Imbalance

Current water allocation issues in the Colorado River Basin stem from a well-documented imbalance between available water supplies and demand. Lower and Upper Basin allocations in the Colorado River Compact were based on the assumption (formed by the available record at the time) that average annual flows on the river were 16.4 MAF per year.[93] However, actual flows over time have been less than that (approximately 14.6 MAF from 1906 to 2024) and have dropped further in recent years (12.43 MAF from 2000 to 2024).[94]

Consumptive use of basin waters has generally decreased from peak levels in the 1990s and early 2000s, but in most years still exceeds flows. This condition, in which direct and indirect depletion of basin waters exceeds available supplies and draws on basin storage, is typically referred to as the Colorado River Basin's *structural deficit*. According to Reclamation reporting in 2025, consumptive use in the basin has generally decreased in recent years due to basin-wide conservation efforts (see below section, "2024 Supplemental Environmental Impact Statement"). According to Reclamation, consumptive use fell from 13.8 MAF in 2021 to 13.3 MAF in 2024.[95] Flows over this same period averaged approximately 11.9 MAF, meaning that despite conservation efforts, the basin continues to operate in a structural deficit.[96]

The majority of Colorado River Basin water diversions are for agricultural irrigation. A 2024 study estimated that from 2000 to 2019, an average of 52% of basin waters were consumed each year for agricultural irrigation purposes throughout the basin. Another 18% was used for M&I or commercial purposes, with remaining basin water consumptive uses accounted for by indirect uses in the form of evaporation from reservoirs (11%) and other sources (19%).[97] Of the subset of waters consumed directly by human users (i.e., agriculture and M&I uses), the same estimates attributed 47% to irrigated agriculture in the form of cattle-feed crops (i.e., alfalfa and other hays); the 2024 study estimated that these crops account for 60% of direct consumptive use in the

[93] National Research Council, Committee on the Scientific Bases of Colorado River Basin Water Management, Water Science and Technology Board, *Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability*, 2007, https://www.nap.edu/read/11857/chapter/1.

[94] CRS analysis of Reclamation Flow Data.

[95] CRS analysis of Reclamation, *Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2024*, May 2025, https://www.usbr.gov/lc/region/g4000/4200Rpts/DecreeRpt/2024/2024.pdf. Hereinafter, Reclamation, *2024 Water Accounting Report*; and Reclamation, *Upper Colorado River Basin Consumptive Uses and Losses 2021-2025,* https://www.usbr.gov/uc/DocLibrary/Reports/ConsumptiveUsesLosses/uc-ucrb-provisionalconsumptiveusesandlosses-2021-2025-508-20251200.pdf.

[96] CRS analysis of Reclamation Flow Data.

[97] Brian D. Richter et al., "New Water Accounting Reveals Why the Colorado River No Longer Reaches the Sea," Communications Earth & Environment, vol. 5, p. 134 (2024), p. 7, https://doi.org/10.1038/s43247-024-01291-0 (hereinafter Richter et al., "New Water Accounting").

Upper Basin and 42% of consumptive use in the Lower Basin.[98] M&I waters accounted for 22% and 28% Upper Basin and Lower Basin consumption, respectively.[99]

Some observers of basin hydrology agree that assuming current trends hold, substantial additional reductions are needed to sustain reservoirs at their current levels. A 2023 cross-disciplinary study estimated that a 13%-20% reduction in basin-wide use, or 2.4-3.2 MAF per year below historical consumption levels as of 2020, was needed to stabilize and restore basin reservoir levels.[100]

Colorado River Accounting

A key difference between Upper and Lower Basin reporting involves how each basin accounts for consumptive use. In accordance with Articles I and V of the *Arizona v. California* decree,[101] a Lower Basin Water Accounting Report (published annually) reports only on *diversions from the system for consumptive use*. Conversely, the comparable Upper Basin accounting—the Upper Basin Consumptive Use and Losses Report (published every five years)—is prepared in response to congressional direction in the CRBPA, which directed "a detailed breakdown of the beneficial consumptive use of water on a State-by-State basis."[102] Reclamation defines *beneficial consumptive use* to include *any removal from the system for beneficial consumptive use*, which Reclamation defines to include both diversions and losses from mainstream reservoir evaporation that occur prior to diversions.[103] Thus, even though Lower Basin reported consumptive use has been below the compact threshold of 7.5 MAF, the total amount of system losses (i.e., losses including indirect use, such as evaporation) nonetheless exceeds this threshold.[104]

Recent Developments and Agreements

Long-term drought conditions throughout the basin over the past several decades have raised concerns about potential negative impacts on water supplies and the sustainability of the Colorado River operating regime. Some of the resulting questions have centered on what sort of operational changes should be implemented, and how (or if) they should be mitigated. The potential for a compact call in the future has in recent years added additional uncertainty to the basin's water supply outlook.[105]

Drought and other uncertainties (e.g., potential tribal water rights claims) spurred the development of several efforts that generally attempted to relieve pressure on basin water supplies, stabilize storage levels, and provide assurances of available water supplies. Some of the more prominent developments since the year 2000 (a common marker for the beginning of the basin's long-term drought) are discussed below.

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[98] Richter et al., "New Water Accounting," p. 5.

[99] Richter et al., "New Water Accounting," p. 5.

[100] John C. Schmidt et al., "The Colorado River Water Crisis: Its Origin and the Future," *WIREs Water*, vol. 2, no. 1672 (2023), https://doi.org/10.1002/wat2.1672.

[101] See footnote 27.

[102] 43 U.S.C. §1551.

[103] See Reclamation, *Upper Colorado River Basin Consumptive Uses and Losses Report, 2016-2020*, February 2022, p. 6.

[104] For example, from 2017 to 2021, Reclamation estimated that total Lower Basin mainstream evaporation and riparian evapotranspiration losses averaged 1.3 MAF per year. See Reclamation, *Lower Colorado River Mainstream Evaporation and Riparian Evapotranspiration Losses Report*, December 2023, https://www.usbr.gov/lc/region/g4000/4200Rpts/LCRBEvapReport/LCRBEvapReport.pdf.

[105] See footnote 66.

2003 California Quantification Settlement Agreement

Prior to the 2003 finalization of the Quantification Settlement Agreement (QSA), California had been exceeding its Colorado River use in most years. Under the QSA, which is an agreement between several California water districts and DOI, California agreed to reduce its use to the required 4.4 MAF under the Law of the River.[106] It sought to accomplish this aim by quantifying Colorado River entitlement levels of several California water contractors; authorizing efforts to conserve additional water supplies (e.g., installation of the lining of the All-American Canal); and providing for several large-scale, long-term agriculture-to-urban water transfers in California. The QSA also committed the state to a path toward environmental restoration and mitigation related to the Salton Sea in Southern California.[107]

2004 Arizona Water Settlements Act

The 2004 Arizona Water Settlements Act (AWSA) altered the allocation of CAP water in Arizona. It ratified three water rights settlements (one in each title) between the federal government and the State of Arizona, the Gila River Indian Community (GRIC), and the Tohono O'odham Nation, respectively.[108] For the state and its CAP water users, the settlement resolved a final repayment cost for CAP by reducing the water users' reimbursable repayment obligation from about $2.3 billion to $1.7 billion (2004 dollars). Additionally, Arizona agreed to new tribal and nontribal allocations of CAP water so that approximately half of CAP's annual allotment would be available to federally recognized Native American Tribes in Arizona, at a higher priority than most other uses. The tribal communities were authorized to lease the water, so long as the water remains within the state via the state's water banking authority. The act authorized funds to cover the cost of infrastructure required to deliver the water to the Indian communities, with much of it derived from power receipts accruing to the Lower Colorado River Basin Development Fund. It also authorized funding for the study of a potential New Mexico Unit of CAP.

2007 Interim Guidelines/Coordinated Operations for Lake Powell and Lake Mead

The 2007 Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead (2007 Interim Guidelines) were developed to implement the LROC through issuance of the *Annual Operating Plan for Colorado River Reservoirs* (AOP), as directed by the 1968 CRBPA.[109] Development of the guidelines began in 2005, when, in response to drought and declining reservoir levels, Reclamation developed

[106] California Quantification Settlement Agreement by and Among Imperial Irrigation District, the Metropolitan Water District of Southern California, and Coachella Valley Water District, October 10, 2003.

[107] The Salton Sea is an inland water body in Southern California that was historically sustained by Colorado River irrigation runoff from the Imperial and Coachella Valleys, but is shrinking. Toxic dust from the exposed seabed is a major concern for surrounding areas. For more information on the Salton Sea, see CRS Report R43211, *Overview of Management and Restoration Activities in the Salton Sea*, by Pervaze A. Sheikh and Charles V. Stern.

[108] Congress passed the Colorado River Basin Project Act of 1968 and authorized construction of CAP despite significant uncertainty related to tribal water rights related to the GRIC and the Tohono O'odham Nation on the Colorado River.

[109] Secretary of the Interior, *Record of Decision: Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead*, December 2007, p. 4, https://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf.

coordinated strategies for Colorado River operations during drought or shortages.[110] The states agreed to these criteria, which included releases from Lake Powell determined by "trigger levels" in both reservoirs, as well as a schedule of Lower Basin water delivery curtailment "tiers" for Arizona and Nevada that were tied to Lake Mead elevation. For Lake Powell, preset inflow measurements, combined with Lake Mead levels, determine the reservoir's annual operational "balancing" tier and resulting releases to Lake Mead. In the Lower Basin, the curtailment guidelines stipulated escalating delivery reductions for Arizona and Nevada below Lake Mead elevations of 1,075 feet.

The 2007 agreement also included for the first time a mechanism by which parties in the Lower Basin were able to store conserved water in Lake Mead, known as *intentionally created surplus* (ICS), for future withdrawals. Reclamation accounts for this water annually, and the users storing the water may access the surplus in future years, in accordance with the Law of the River. As of the end of calendar year 2025, the portion of Lake Mead water in storage that was classified as ICS was 3.33 MAF.[111] That is, as of the end of the 2025, approximately one-third of the water stored in Lake Mead was conserved ICS volume that could be withdrawn by the states.

The 2007 guidelines were considered "interim" because they were scheduled to expire in 20 years (i.e., at the end of 2026). Thus, Reclamation has in recent years come up with a new plan for post-2026 operations (discussed in "Long-Term/Post-2026 Operations").[112]

System Conservation Program

In 2014, Reclamation and several major basin water supply agencies executed a memorandum of understanding to provide federal funding for voluntary conservation projects and reductions of water use. This *system conservation water* is stored in Lake Mead or Lake Powell, but unlike ICS water it is not intended to be recoverable.[113] Congress formally authorized federal participation in these efforts, initially known as the Pilot System Conservation Program, in the Energy and Water Development and Related Agencies Appropriations Act, 2015 (P.L. 113-235, Division D), and subsequently amended and extended the authority in 2019 (P.L. 115-244, Division A) and 2022 (P.L. 117-328). The program continued to compensate users for conservation until its expiration at the end of FY2024.[114] While most of this program was conducted in the Lower Basin, the Upper Colorado River Basin Commission piloted a similar effort in the Upper Basin from 2015 to 2018.[115]

2019 Drought Contingency Plans

Ongoing drought conditions and the potential for water supply shortages prompted discussions and negotiations focused on how to conserve additional basin water supplies. After several years of negotiations, on March 19, 2019, Reclamation and the Colorado River Basin states finalized

[110] Prior to this time, the Secretary of the Interior had the authority to declare a shortage, but no shortage criteria had been publicly announced or published. (Criteria for surplus operations were put in place in 2001.)

[111] Reclamation, *2024 Water Accounting Report*.

[112] Reclamation, "Request for Input on Development of Post-2026 Colorado River Reservoir Operational Strategies for Lake Powell and Lake Mead Under Historically Low Reservoir Conditions," 87 *Federal Register* 37884-37888, June 24, 2022.

[113] *System water* refers to water that is provided to increase water supplies as a whole, without being directed toward additional consumptive use for specific contractors or water users.

[114] 43 U.S.C. §620 note.

[115] Upper Colorado River Commission, *Sixty-Seventh Annual Report*, September 30, 2024, http://www.ucrcommission.com/wp-content/uploads/2025/07/UCRC-WY2024-Annual-Report.pdf.

Drought Contingency Plans (DCPs) for both the Upper Basin and the Lower Basin. These plans, which were an overlay of the 2007 Interim Guidelines discussed above, required final authorization by Congress to be implemented. Congress authorized federal participation in the plans on April 16, 2019, in the Colorado River Drought Contingency Plan Authorization Act (P.L. 116-14). Similar to the 2007 guidelines, these plans were scheduled to be in place through 2026. At the time of their enactment, the combined efforts represented by the DCPs were expected to cut the risk of Colorado River reservoirs reaching critically low elevations by approximately 50%.[116] Each of the basin-level DCPs is discussed below in more detail.

Upper Basin Drought Contingency Plan

The Upper Basin's part of the DCP aimed to protect against Lake Powell reaching critically low elevations, primarily through coordinated Upper Basin reservoir operations. It also authorized storage of conserved water in the Upper Basin that would serve as the foundation for a water use reduction effort (i.e., a *Demand Management Program*) that may be developed in the future.

The Upper Basin DCP provided for a Drought Response Operations Agreement (DROA) to keep the surface of Lake Powell above 3,525 feet, which is 35 feet above minimum power pool. The two main mechanisms for this were (1) altering the timing of downstream releases from Glen Canyon Dam and (2) operating initial unit reservoirs on the mainstream of the Colorado River (e.g., Navajo Reservoir, Blue Mesa Reservoir, and Flaming Gorge Reservoir) to protect Lake Powell elevations, potentially through storage drawdown. Operational changes may occur either through the DROA's emergency provisions, which allow the Secretary of the Interior to make supplemental water deliveries at his or her discretion (after consultation with basin states), or through a planning process establishing formal triggers for Upper Basin water deliveries to Lake Powell, based on agreed-upon hydrological targets. Pursuant to the DROA, these releases may be subsequently "recovered." Reclamation approved its long-term *Drought Response Operations Plan* under the DROA in 2022,[117] and implemented Upper Basin DROA releases from Blue Mesa and Flaming Gorge Reservoirs in 2021 (for a total of 161,000 AF) and Flaming Gorge Reservoir in 2022 (463,000 AF), all of which were recovered in 2023.[118] In 2026 Reclamation planned to release up to 1.0 MAF from Flaming Gorge Reservoir to Lake Powell.[119]

The other primary component of the Upper Basin DCP, the Upper Basin DCP Demand Management Storage Agreement, required the Upper Basin states and the UCRC to investigate the feasibility of a Demand Management Program. It also authorized the storage of up to 500,000 AF of CRSPA storage for demand management through 2057 in the Upper Basin Initial Units of Lake Powell, Flaming Gorge, Aspinall, and Navajo.[120] The program envisioned compensation to Upper Basin water users for temporary, voluntary efforts that resulted in additional water

[116] U.S. Congress, House Committee on Natural Resources, Subcommittee on Water, Oceans, and Wildlife, *Oversight Hearing on the Colorado River Drought Contingency Plan*, 116th Cong., 1st sess., March 28, 2019, H.Hrg. 116-10 (GPO, 2019).

[117] For more information, see Reclamation, Colorado River Basin Drought Contingency Plans, "Drought Response Operations Agreement," https://www.usbr.gov/ColoradoRiverBasin//dcp/droa.html.

[118] Reclamation, *2023 Drought Response Operations Plan*, May 17, 2023, Attachment A, https://www.usbr.gov/ColoradoRiverBasin//documents/dcp/DROA/20230517-2023DROAPlan-508-UCRO.pdf.

[119] Reclamation, *Drought Response Operations Summary Sheet*, updated October 15, 2026, https://www.usbr.gov/ColoradoRiverBasin//documents/dcp/DROA/DROSummarySheet.pdf; and Reclamation, "Reclamation Acts to Protect Colorado River System During Historic Drought," press release, April 17, 2026, https://www.usbr.gov/newsroom/news-release/5326.

[120] "Agreement Regarding Storage at Colorado River Storage Project Act Reservoirs Under an Upper Basin Demand Management Program," May 20, 2019, https://www.usbr.gov/dcp/docs/final/Attachment-A2-Drought-Managment-Storage-Agreement-Final.pdf.

conservation in Upper Basin reservoirs. The Upper Basin analyzed the feasibility of such a program in a 2022 study.[121]

Lower Basin Drought Contingency Plan

The Lower Basin DCP required Arizona, California, and Nevada to curtail deliveries and contribute additional water to Lake Mead storage at predetermined "trigger" elevations.[122] It also created additional flexibilities to incentivize voluntary conservation of water to be stored in Lake Mead, thereby increasing those lake levels. Under the DCP, Nevada and Arizona (which were already set to have their supplies curtailed beginning at 1,075 feet under the 2007 Interim Guidelines) committed to making additional cutbacks beyond those previous commitments. DCP delivery reductions began at a higher elevation than prior agreements (1,090 feet) and overlaid additional volumes at elevations down to 1,025 feet.

The Lower Basin DCP also included delivery reductions for California, beginning with an annual delivery reduction of 200,000 AF per year at Lake Mead elevations between 1,040 and 1,045 feet and increasing by 50,000 AF for each additional 5-foot drop in Lake Mead elevation below 1,040 feet, to as much as 350,000 AF at elevations of 1,025 feet or lower. These curtailments were categorized in terms of "tiers" (e.g., a Tier One shortage condition for elevations from 1,075 to 1,050 feet).

The curtailments in the Lower Basin DCP were in addition to those agreed to under the 2007 Interim Guidelines and under Minute 323 with Mexico. In addition to the state-level reductions, under the Lower Basin DCP, Reclamation also agreed to pursue efforts to add 100,000 AF or more of system water within the basin. Some of the largest and most controversial reductions under the Lower Basin DCP were committed to by Arizona, where pursuant to previous changes under the 2004 AWSA, a large group of agricultural users were already facing major reductions to their CAP water supplies prior to the enactment of the DCP.

2024 Supplemental Environmental Impact Statement

Ongoing declines in Lakes Mead and Powell after approval of the DCPs highlighted the need for additional operational changes prior to the expiration of most existing agreements in 2026. At a 2022 Senate committee hearing, the then-Commissioner of the Bureau of Reclamation announced that basin states would need to conserve an additional 2.0-4.0 MAF per year beyond current levels to protect Lake Mead and Lake Powell storage volumes over the 2023-2026 period.[123] The Commissioner noted that if the targets were not met with voluntary actions by the states, DOI was prepared to act unilaterally.[124]

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[121] Hazen and Sawyer, *Interstate Investigation Regarding Feasibility of a Demand Management Program in the Upper Colorado River Basin*, December 13, 2022, http://www.ucrcommission.com/wp-content/uploads/2022/12/UCRC-DM-Investigation-Summary-Report-Dec-13-2022.pdf.

[122] "Lower Basin Drought Contingency Plan Agreement," May 20, 2019, https://www.usbr.gov/ColoradoRiverBasin/documents/dcp/final/Attachment-B-LB-DCP-Agreement-Final.pdf.

[123] Statement of the Honorable Camille Touton in U.S. Congress, Senate Committee on Energy and Natural Resources, *Short and Long Term Solutions to Extreme Drought in the Western U.S.*, hearings, 117th Cong., 2nd sess., June 14, 2022. These amounts were based on a 2022 Reclamation analysis. See Reclamation, "Colorado River System Mid-term Projections," June 16, 2022, https://www.usbr.gov/ColoradoRiverBasin/documents/20220616-ColoradoRiverSystemMid-termProjections-Presentation.pdf.

[124] Statement of the Honorable Camille Touton in U.S. Congress, Senate Committee on Energy and Natural Resources, *Short and Long Term Solutions to Extreme Drought in the Western U.S.*, hearings, 117th Cong., 2nd sess., June 14, 2022.

No major water savings commitments were announced in response to Reclamation's June 2022 statement.[125] Thus, in October 2022 Reclamation began a process to revise the 2007 Interim Guidelines in the "near-term," prior to any post-2026 operational changes.[126] During this process, Reclamation analyzed potential changes in a supplemental environmental impact statement (SEIS). After multiple competing state proposals (including a six-state proposal and a separate proposal from California) and publication of a draft SEIS, on May 22, 2023, DOI announced a consensus-based proposal in which the three Lower Basin states would conserve a total of 3.0 MAF prior to 2026, with 2.3 MAF of these reductions compensated by the federal government via $4.0 billion in previously provided funds in the FY2022 budget reconciliation law commonly referred to as the Inflation Reduction Act (P.L. 117-169, see box below).[127] The agreement also allowed for reduced releases from Glen Canyon Dam if elevations at Lake Powell drop below 3,500 feet. The Secretary of the Interior formally adopted the consensus-based alternative for near-term operations on March 5, 2024.[128] **Table 1** compares Lower Basin state-level curtailment commitments before and after the SEIS.

[125] In a July 18, 2022, letter to Reclamation, the Upper Colorado River Commission declined to contribute a specific volume of reductions to these efforts, and instead laid out a five-point plan as the basis for its water conservation efforts. Letter from Charles Cullom, Director, Upper Colorado River Commission, to Camille Touton, Commissioner, U.S. Bureau of Reclamation, July 18, 2022, http://www.ucrcommission.com/wp-content/uploads/2022/07/2022-July-18-Letter-to-Reclamation.pdf.

[126] Reclamation, "Notice of Intent to Prepare a Supplemental Environmental Impact Statement for December 2007 Record of Decision Entitled Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead," 87 *Federal Register* 69042, November 17, 2022.

[127] DOI, "Biden-Harris Administration Announces Historic Consensus System Conservation Proposal to Protect the Colorado River Basin," press release, May 22, 2023, https://www.doi.gov/pressreleases/biden-harris-administration-announces-historic-consensus-system-conservation-proposal. These funds are discussed further in the below section, "2024 Supplemental Environmental Impact Statement." See CRS In Focus IF12437, *Bureau of Reclamation Funding in the Inflation Reduction Act (P.L. 117-169)*, by Charles V. Stern and Anna E. Normand.

[128] Reclamation, *Final Supplemental Environmental Impact Statement for Near-Term Colorado River Operations*, March 2024, https://www.usbr.gov/ColoradoRiverBasin/documents/NearTermColoradoRiverOperations/20240300-Near-termColoradoRiverOperations-FinalSEIS-508.pdf.

Colorado River Drought Mitigation Funding in the FY2022 Reconciliation Law

In Section 50233 of the FY2022 reconciliation law (P.L. 117-169), Congress provided $4.0 billion for projects to mitigate drought in the 17 arid and semiarid Reclamation states in the West, with priority given to Colorado River Basin activities. Reclamation announced initial plans for this funding on October 12, 2022, in the form of a new program, the Lower Colorado River Basin System Conservation and Efficiency Program.

As developed by Reclamation, the program had three components. Under the first component, Colorado River water delivery contractors or entitlement holders submitted proposals resulting in water remaining in Lake Mead at a set price of $330 per acre-foot for a one-year agreement, $365 per acre-foot per year for a two-year agreement, or $400 per acre-foot per year for a three-year agreement. For the second component, Reclamation accepted proposals for water conservation and efficiency projects involving pricing options as proposed by Colorado River water delivery contractors or entitlement holders. For the third component, Reclamation accepted proposals for long-term system efficiency improvements that would result in multiyear system conservation. Reclamation also dedicated $250 million of this P.L. 117-169 funding toward Salton Sea restoration activities in California over the 2022-2026 timeframe. (Restoration of the sea is a priority of the Imperial Irrigation District, a major irrigation district in Southern California, one of the largest water rights holders on the Colorado River.)

Supporters of these efforts have pointed to these funds as facilitating crucial water savings over the 2022-2026 timeframe. However, the DOI Inspector General's office published two audits in 2026 highlighting a lack of public transparency associated with these funds. Among other things, it pointed out that Reclamation's practice of releasing these funds through water-related contracts meant that Reclamation was not subject to typical federal accounting standards for financial assistance awards.

Source: Congressional Research Service, based on information in P.L. 117-169 and U.S. Department of the Interior Office of the Inspector General, *The Bureau of Reclamation Needs to Improve Transparency for Inflation Reduction Act-Funded Water Conservation Efforts in the Upper Colorado River Basin*, Report No. 2024-WR-007, April 2026; and U.S. Department of the Interior Office of the Inspector General, *The Bureau of Reclamation Should Improve Transparency in Inflation Reduction Act-Funded Drought Mitigation Agreements and Check to Ensure Funds Are Not Awarded to Excluded Parties*, Report No. 2023-WR-035, April 2026.

Table 1. Pre-2024 and 2024-2026 Lower Colorado River Basin Delivery Curtailments

(curtailment amounts in thousand acre-feet)

Lake Mead Elevation (Feet)	Pre-2024 Curtailments				SEIS 2024-2026 Curtailments			
	AZ	NV	CA	Total	AZ	NV	CA	Total
1,090 - >1,075	192	8	—	**200**	472	78	400	**950**
1,075 - >1,050	512	21	—	**533**	792	91	400	**1,283**
1,050 - >1,045	592	25	—	**617**	872	95	400	**1,367**
1,045 - >1,040	640	27	200	**867**	920	97	600	**1,617**
1,040 - >1,035	640	27	250	**917**	920	97	650	**1,667**
1,035 - >1,030	640	27	300	**967**	920	97	700	**1,717**
1,030 - 1,025	640	27	350	**1,017**	920	97	750	**1,767**
<1,025	640	27	350	**1,100**	1,000	100	750	**1,850**

Source: Bureau of Reclamation, *Final Supplemental Environmental Impact Statement for Near-Term Colorado River Operations*, March 2024, https://www.usbr.gov/ColoradoRiverBasin/documents/NearTermColoradoRiverOperations/20240300-Near-termColoradoRiverOperations-FinalSEIS-508.pdf, and Bureau of Reclamation, *Final Environmental Impact Statement, Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead,* July 2024, https://www.usbr.gov/ColoradoRiverBasin/post2026/final-eis/index.html.

Notes: SEIS = supplemental environmental impact statement. State commitments in 2024 SEIS may vary such that collectively a total of 3.0 MAF of SEIS conservation would occur through 2026.

Agreements with Mexico

Pursuant to the 1944 U.S.-Mexico Water Treaty, in the event of extraordinary drought, Colorado River waters made available to Mexico by the United States are to be reduced in the same proportion as consumptive uses are decreased in the United States.[129] The United States, through the IBWC, has entered into multiple binding agreements (*minutes*) with Mexico in recent years to aid in basin conservation efforts and generally share in basin shortages. The first of these commitments came in 2012 under Minute 319, and were similar in structure to the 2007 reductions negotiated for Lower Basin states. In 2017, the United States and Mexico signed Minute 323, which extended the 2012 commitments, made additional commitments by Mexico in the event of approval of a U.S. Drought Contingency Plan, and included, among other things, options for Mexico to hold water in reserve in U.S. reservoirs for emergencies and water conservation efforts, as well as U.S. commitments for flows to support the ecological health of the Colorado River Delta.[130] Minute 330, agreed to in April 2024, mirrored near-term U.S. commitments prior to 2026, and contained commitments for Mexico to undertake conservation projects generating an additional 400,000 acre-feet of system water and for Mexico's Water Reserve in Lake Mead, funded in part with $65 million in U.S. funding through the IBWC.[131] Finally, a new minute with Mexico, Minute 334, was signed in September 2026 as a complement to post-2026 U.S. Lower Basin agreements, which are also discussed below.[132]

Long-Term/Post-2026 Operations

As previously noted, the 2007 Interim Guidelines and several supplementary agreements (i.e., the 2019 DCP and the 2023 near-term operational changes) were scheduled to expire at the end of calendar year 2026. Thus, in 2022 Reclamation initiated an EIS process to study *long-term* (post-2026) federal operational alternatives for the Colorado River system.[133] This post-2026 operational planning process aimed to identify a range of options to be employed in Colorado River management for decades into the future that accounted for the realities of the basin's hydrology, and to finalize a preferred alternative. Pursuant to the Secretary's requirement under the CRBPA to adopt criteria for coordinated long-range operation of the Colorado River system, Reclamation's study process focused on coordinated reservoir management strategies to address the operations of Lake Powell and Lake Mead. The adoption of this new guidance was considered a major federal action that required an EIS pursuant to NEPA.

Throughout this process, Reclamation reiterated its preference for basin interests to come to a consensus on post-2026 operational terms, while also pointing to the Secretary's authority to act

[129] U.S.-Mexico Water Treaty, Title III, Article 10.

[130] IBWC "Minutes Between the United States and Mexican Sections of the IBWC," https://www.ibwc.gov/Treaties_Minutes/Minutes.html. Minute 323 extended and replaced elements of a previous agreement signed in 2012—Minute 319—related to implementation of the 1944 U.S.-Mexico Water Treaty.

[131] IBWC, "U.S. and Mexico Sign Agreement to Expand Colorado River Temporary Measures," press release, April 18, 2024, https://www.ibwc.gov/wp-content/uploads/2024/04/Min-330-EntryintoForce-Final-4-18-2024.pdf.

[132] IBC, *Minute 334, Colorado River Basin Cooperative Measures through December 31, 2028*, September 2, 2026, https://www.ibwc.gov/wp-content/uploads/2026/09/334English2Sided.pdf. See below section, "Reclamation's Post-2026 Environmental Impact Statement and Record of Decision."

[133] More information on Reclamation's process for post-2026 operational planning is available at Reclamation, "Colorado River Post-2026 Operations," updated September 3, 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/index.html.

unilaterally if no agreement were to be reached.[134] Reclamation justified such a course of action by pointing to a combination of existing authorities under the Law of the River (e.g., the Secretary's Lower Basin "water master" authority).[135]

State Operations Proposals

Despite negotiations dating back to at least 2022, Upper and Lower Basin states were unable to agree on a consensus-based plan for post-2026 operations. In March 2024, the two basins submitted separate post-2026 operational plans with significant differences to Reclamation. These proposals, along with others from interested basin stakeholders, reportedly influenced Reclamation's eventual alternatives.[136] The biggest differences between Upper and Lower Basin state proposals were the approach toward mandated Lower Basin reductions and Lake Powell operations/Glen Canyon Dam releases.

The Lower Basin's plan, among other things, proposed total basin-wide *system storage* (i.e., Lake Mead, Lake Powell, and initial unit storage) as the basis for water delivery cuts, with cuts for the Lower Basin under most average and dry conditions, and cuts shared between the Upper and Lower Basins under the driest conditions.[137] Lower Basin state delivery reductions under most dry conditions (system contents of 58% to 38%) would have been 1.25 MAF (with Arizona responsible for approximately 50% of these reductions and California and Nevada responsible for the remainder).[138] Under the driest conditions (system contents of 38% to 23%), the next 2.4 MAF per year in cuts (i.e., total cuts of up to 3.9 MAF per year) would be a "systemwide reduction zone" shared equally between the Lower Basin (plus Mexico) and the Upper Basin.[139] Glen Canyon Dam releases under the Lower Basin's plan would have been based on a combination of system (i.e., all basin reservoirs) contents and Upper Basin depletions in the prior three years. These releases would be authorized to fall as low as 6.0 MAF when system storage is extremely low (i.e., 20% of system storage).[140]

The Upper Basin states submitted their own proposal to Reclamation in March 2024.[141] The Upper Basin proposed a plan for Lower Basin delivery reductions limited to Lower Basin users only, based on combined Lake Mead and Lake Powell live storage (i.e., actual water in storage at

[134] Reclamation, "Interior Department Moves Forward on Guidelines for Colorado River Absent Full State Consensus," press release, February 14, 2026, https://www.usbr.gov/newsroom/news-release/5283.

[135] The Boulder Canyon Project Act of 1928 made the Secretary of the Interior responsible for the distribution (via contract) of all Colorado River water delivered below Hoover Dam (i.e., the Lower Basin), and authorized such regulations as necessary to enter into these contracts. Subsequent court decisions, including *Arizona v. Colorado*, have confirmed the Secretary's power to apportion surpluses and shortages among and within Lower Basin states; this authority is sometimes referred to as the Secretary's *water master* authority. There is no comparable federal authority for the Upper Basin, and the limits of federal authority for Upper Basin operations are a subject of ongoing debate.

[136] For a full listing of submitted proposals, see Reclamation, "Alternatives Development," updated September 1, 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/alternatives/index.html.

[137] Letter from the Colorado River Basin States Representatives of Arizona, California, and Nevada to the Honorable Camille Calimlim Touton, Commissioner, Bureau of Reclamation, March 6, 2024, https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/2024-03-06_Lower_Basin_Alternative_Letter_Submittal_508.pdf. Hereinafter, "Lower Basin Post-2026 Operations Proposal."

[138] The Lower Basin Post-2026 Proposal also assumes reductions for Mexico, which are not reflected in these totals.

[139] Lower Basin Post-2026 Operations Proposal, p. 2.

[140] Lower Basin Post-2026 Operations Proposal, p. 7.

[141] Letter from the Colorado River Upper Division State Representatives of Colorado, New Mexico, Utah, and Wyoming to the Honorable Camille Calimlim Touton, Commissioner, Bureau of Reclamation, March 5, 2024, https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/2024-03-05_UDS_Alternative_Submittal_508.pdf. Hereinafter, "Upper Basin Post-2026 Operations Proposal."

that time), minus a threshold volume in the reservoirs.[142] Similar to the Lower Basin's plan, at most storage volumes under the current baseline, Lower Basin delivery reductions would have been a static 1.5 MAF/year (the Upper Basin did not recommend cuts for Mexico, or a distribution of specific cuts among Lower Basin states). At less than 20% storage, Lower Basin cuts would be as great as 3.0 MAF per year, and no comparable cuts were proposed for Upper Basin users.[143] Glen Canyon Dam releases would be based on Lake Powell storage conditions only, with a linear rule curve allowing for releases of 8.1 MAF/year to 6.0 MAF/year between elevations of 3,670-3,510 feet.[144]

Reclamation's Post-2026 Environmental Impact Statement and Record of Decision

Reclamation reviewed initial public input, including the aforementioned Upper and Lower Basin state proposals, and released five preliminary alternative concepts for public review in November 2024.[145] Reclamation supplemented this document with a more detailed alternatives report in January 2025, at the end of the Biden Administration.[146] After receiving additional public input on these options, one year later Reclamation released its Draft EIS with five new alternatives.[147] Reclamation reported that it received 18,127 comments on this Draft EIS during its comment period, including 785 unique submissions and more than 17,000 form letters.[148]

Reclamation released its final EIS (EIS) in July 2026,[149] and the Secretary of the Interior adopted the plan in August 2026.[150] These strategies were subsequently detailed in an Operations Plan for 2027-2028.[151] The expected impacts of proposed Glen Canyon Dam releases in the operations plan on threatened and endangered species and their critical habitats were analyzed in an August 2026 BiOp pursuant to Section 7 of the ESA. The BiOp stated that the operations plan is not likely to jeopardize the continued existence of any listed species or adversely modify critical

[142] Upper Basin Post-2026 Operations Proposal, p. 3.

[143] Upper Basin Post-2026 Operations Proposal, p. 3.

[144] Upper Basin Post-2026 Operations Proposal, p. 3.

[145] Reclamation, *Post-2026 Colorado River Reservoir Operational Strategies for Lake Powell and Lake Mead Narrative of National Environmental Policy Act Alternatives*, November 2024, https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/Post-2026_Colorado_River_Operations_EISNarrative_of_Alternatives_20241120_508.pdf.

[146] Reclamation, *Alternatives Report, Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead*, January 2025, https://www.usbr.gov/ColoradoRiverBasin/documents/post2026/alternatives/Post-2026_Alternatives_Report_20250117_508.pdf.

[147] Reclamation, *Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead,* Draft Environmental Impact Statement, January 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/draft-eis/index.html. Hereinafter, "Reclamation, *Post-2026 DEIS*."

[148] Reclamation, *Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead*, Draft EIS Public Review and Comment Process, https://www.usbr.gov/ColoradoRiverBasin/post2026/draft-eis/Public-Review-Comment-Process.html.

[149] Reclamation, *Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead*, Final Environmental Impact Statement, July 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/final-eis/index.html. Hereinafter, 2026 EIS.

[150] DOI, *2026 ROD*.

[151] Reclamation, *Operating Guidelines, Colorado River Guidelines for Coordinated Operations of Lake Powell and Lake Mead, Operating Years 2027 and 2028*, August 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/decision-doc/2027-2028OperatingGuidelines_Final.pdf. Hereinafter, "2027-2028 Operations Plan."

habitat.[152] Finally, the United States and Mexico also announced a new minute, Minute 334, to replace prior minutes that had been set to expire in 2026, and to serve as a complement to the 2026-2028 U.S. Operations Plan.[153] These new plans went into effect on October 1, 2026 (i.e., the beginning of the 2026 water year).

Most of the changes considered in the EIS fell into four areas: (1) Lower Basin shortage guidelines (i.e., Lower Basin delivery reductions); (2) coordinated reservoir operations (i.e., releases from Glen Canyon Dam); (3) storage and delivery of conserved system and nonsystem water (i.e., concepts similar to current system conservation and ICS water, respectively); and (4) "additional activities" above Lake Powell (i.e., Upper Basin conservation). The EIS also analyzed actions related to reservoir operations in the event of a shift to wet hydrology and water "surplus" conditions. Major proposed changes in the EIS and their implementation in the 2026-2028 operational plans are discussed below.

Reclamation's EIS was notable for its departure from the alternatives discussed in earlier drafts. Rather than adopting a single alternative from the draft EIS, its preferred alternative was "within the range of alternatives analyzed in the Draft [EIS]," and established *operational sideboards* (i.e., thresholds and ranges for operational elements) that it characterized as "a structure within which operating guidelines would be developed, reviewed, and periodically updated."[154] It also noted that while most of its components could be implemented under existing authorities, it included components that would require new authorities or agreements to implement.[155] However, it did not detail which specific components would require new authority.

In August 2026, Nevada sued the Department of the Interior alleging the selected alternative and EIS violated NEPA, the Administrative Procedure Act, and the Law of the River for failing to interpret and correctly apply the Law of the River, consider a reasonable range of alternatives, adequately consider effects, respond to comments, designate mitigation measures, and designate state and local governments as cooperating agencies.[156]

The specific approaches in the EIS under the four aforementioned areas of proposed changes are summarized below.

Lower Basin Shortage Guidelines

Similar to what has been implemented dating to 2020, the EIS established "shortage guidelines" (i.e., reduced deliveries) for Lower Basin users; these shortages are to be implemented in operating guidelines every two years, and the guidelines may be revisited in the interim as conditions warrant.[157] For 2027 and 2028, operations pursuant to the EIS assume Lower Basin state cuts based on a May 2026 proposal from Lower Basin states that included a total of 1.25 MAF per year in shortages, plus 250,000 AF/year in Mexican shortages that were subsequently

[152] U.S. Fish and Wildlife Service, *Biological Opinion for Glen Canyon Dam Operations (2026-2036)*, August 13, 2026, https://www.usbr.gov/ColoradoRiverBasin/post2026/decision-doc/P26_BiologicalOpinion_Final.pdf. Aspects of the plan dealing with other parts of the system were characterized as being within the bounds of existing biological opinions for those areas.

[153] IBWC, *Minute 334, Colorado River Cooperative Measures through 2028*, September 9, 2026, https://www.ibwc.gov/wp-content/uploads/2026/09/334English2Sided.pdf.

[154] DOI, *2026 ROD*, p. 13.

[155] 2026 EIS, p. 2-5.

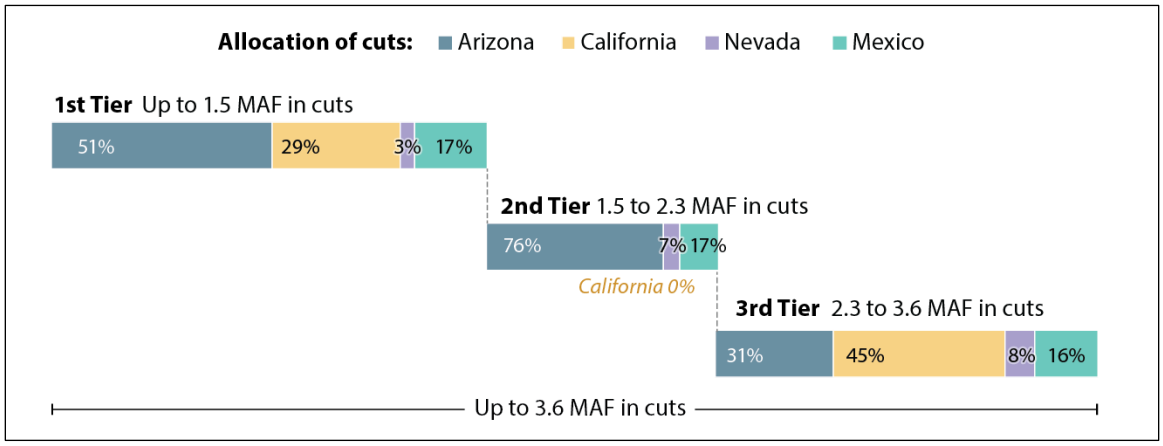
[156] Nevada v. Burgum et al., No. 2:26-cv-02665 (D. Nev. filed Aug. 24, 2026).

[157] DOI, *2026 ROD*, p. 3.

finalized in Minute 334.[158] This first 1.25 MAF in U.S. shortages is to be distributed based on a prior voluntary agreement among Lower Basin states, with Arizona responsible for 760,000 AF of these cuts, California responsible for 440,000 AF, and Nevada responsible for 50,000 AF.[159] However, Reclamation's EIS "sideboards" approach leaves open the possibility of additional reductions if Reclamation decides that conditions warrant such a change. If Lake Mead elevations are projected to drop below an elevation of 1,010 feet, Reclamation is to consult with basin stakeholders and could implement additional shortages up to a total of 3.6 MAF.[160] Also, in contrast to the first 1.50 MAF/year in Lower Basin reductions, including Mexico, Reclamation would implement any additional reductions based on water rights priorities unless Lower Basin users reach another voluntary agreement for how to distribute these cuts. Thus, without new voluntary agreements among the states, cuts beyond 1.25 MAF/year would fall most heavily on Arizona and Nevada (**Figure 6**). In addition to these mandatory shortages, the EIS also assumes that Lower Basin operations will include 700,000 AF of voluntary system conservation in 2027 and 2028.[161]

Figure 6. Annual Curtailments for 2027/2028 Under 2026 EIS Preferred Alternative

(Potential distribution of delivery shortage volumes for U.S. Lower Basin states and Mexico)



Source: CRS, based on Bureau of Reclamation, *Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead*, Final Environmental Impact Statement, https://www.usbr.gov/ColoradoRiverBasin/post2026/final-eis/index.html.

Notes: MAF = million acre-feet. Shortages are tied to Lake Mead elevation, as outlined in Reclamation's EIS.

Coordinated Reservoir Operations

Releases from Lake Powell in the EIS preferred alternative can range from 5.0 MAF per year to 12.0 MAF per year, and would fall into three Lake Powell elevation ranges similar to those currently established to help equalize Lake Mead and Lake Powell storage levels: (1) Upper Elevation Range, (2) Mid-Elevation Range, and (3) Low Elevation Range.[162] The corresponding

[158] Email from John Entsminger, Commissioner, Southern Nevada Water Authority, to Andrea Travnicek, Assistant Secretary of the Interior, "Lower Division States' Proposal for 2026–2028 Colorado River Operations," https://www.azwater.gov/sites/default/files/2026-05/lower-basin-colorado-river-proposal.pdf. The Lower Basin states assumed 250,000 AF/year in Mexican water delivery reductions, which were subsequently finalized in Minute 334.

[159] 2027-2028 Operations Plan, p. 7.

[160] 2027-2028 Operations Plan, p. 14.

[161] 2027-2028 Operations Plan, p. 8.

[162] 2026 EIS, p. 2-13.

release volumes for these tiers fall generally between 8.23 MAF/year or more (Upper) and 6.0 MAF/year (Low), depending on Lake Powell conditions, and releases are to be selected to maintain an elevation above 3,510 feet (i.e., 20 feet above minimum power pool). However, if Lake Powell's elevation is projected to drop below 3,500 feet in any 24-Month Study, consultation would occur and releases could potentially be adjusted down to as little as 5.0 MAF/year.[163]

Storage and Delivery of Conserved System and Non-System Water

The preferred alternative continues the approach of allowing users the possibility of conserving water and storing it in Lake Powell and Lake Mead (i.e., ICS), with some changes. There is one such pool available in Lake Powell, and two separate pools established for Lake Mead. The Lake Powell mechanism allows for the cumulative storage of up to 3.0 MAF in Lake Powell that would be available both for intra- and interstate transactions within the Upper Basin, or toward Lake Powell release requirements.[164] The Lake Mead mechanism would allow for storage of up to 8.0 MAF in Lake Mead that would factor into Lake Powell and Lake Mead operational determinations, and similar to the Lake Powell mechanism would be available for intra- and interstate transactions.[165] Apart from the Lake Mead mechanism, the preferred alternative also establishes a "Federally Managed Water Resources Pool," through which Reclamation would acquire and store 450,000 AF-1.0 MAF for federal delivery obligations for authorized Indian water rights settlements, offsetting of tribal water shortages, and protection of federal infrastructure.[166] This water could be acquired from conserved consumptive use water, including but not limited to ICS, and would *not* be available when Lake Mead's elevation is below 1,000 feet.[167]

Additional Activities Above Lake Powell

Similar to actions in recent years under DROA, the preferred alternative continues the practice of allowing for the transfer of water from CRSP Upper Initial Units (within their respective RODs) that aims to protect Lake Powell elevations from reaching minimum power pool. Specifically, the EIS provides that whenever Lake Powell elevation is less than 3,525 feet, Reclamation may make "maximum use" of available storage in the Initial Units.[168] These releases are expected to be determined using a consultation process with Upper and Lower Basin states and, similar to what has occurred under DROA, would be recovered by Upper Basin reservoirs when Lake Powell is no longer projected to fall below 3,525 feet. The preferred alternative and 2027-2028 operations plan also assume voluntary Upper Basin conservation efforts, with the 2027-2028 plan assuming 200,000 AF per year; however, no specific state contributions are assumed.[169]

Issues for Congress

For many years, the principal role of Congress related to the Colorado River Basin has focused on approval, funding, and oversight of basin water storage facilities and programs. This has included

[163] 2026 EIS, p. 2-13. See also 2027-2028 Operations Plan, pp. 6-7.

[164] 2026 EIS, p. 2-14.

[165] 2026 EIS, p. 2-15.

[166] 2026 EIS, p. 2-16.

[167] 2026 EIS, p. 2-14.

[168] 2026 EIS, p. 2-16.

[169] 2027-2028 Operations Plan, p. 27

funding and oversight of Upper and Lower Basin facility construction and operations (including tribal water settlements), as well as programs to protect and restore listed species (e.g., the Glen Canyon Dam Adaptive Management Program and the Upper Colorado River Endangered Fish Program) and tribal water settlements. Congressional funding in support of these projects and programs typically has accounted for a portion of project budgets, with funds also coming from power revenues (made available without further appropriation through multiple funds) and nonfederal partners.

The 2019 DCPs and the FY2022 reconciliation law were seen as a new dimension in the congressional role: consideration of drought-related authorities and funding. The recently finalized 2026 EIS plans may prompt additional considerations, and Congress may consider whether or not to approve new or modified authorities that it believes are necessary to implement the preferred alternative and any other planned activities. It could also choose to prevent implementation of some or all planned components.

Federal Efforts to Mitigate Long-Term Drought

As dry conditions have worsened the basin's hydrological outlook, Congress has addressed Colorado River funding outside of the regular appropriations process and approved authorities to support federal efforts to deal with reduced water supplies. The $4.0 billion in drought funding under Section 50233 of the FY2022 reconciliation law, which included priority for Colorado River Basin activities, was the most significant investment in water conservation in the history of the basin, and provided crucial support for water conservation commitments prior to 2026.

Congress may consider the extent to which it weighs in on programs and operational authorities that facilitate (or direct) Reclamation's approach to post-2026 operations in the basin. This could be through additional supplemental funding (i.e., similar to the P.L. 117-169 funding), or new or amended operational authorities to support the 2026 ROD and other related activities.

Some in the 119th Congress introduced legislation intended to guide or support future Colorado River operations. For instance, H.R. 7078 would amend the CRBPA so as to remove the existing subordination of CAP water deliveries to other users, and would instead direct that Lower Basin shortages be implemented on a pro rata basis. Other legislation, such as H.R. 231 and S. 154, would extend authority for the System Conservation Program, which has been a key source of funding for basin water conservation efforts.

Tribal Water Rights Settlements and Ecosystem Programs

Many tribal water rights are senior to other water rights in the basin, and thus are likely to play an important role in the future of the Colorado River. The extent to which Tribes develop their water rights, or are willing and able to market their water to other users, has ramifications for water availability for other uses in the basin. As previously noted, Congress has approved Indian water rights settlements associated with more than 2.5 MAF per year of tribal diversion rights on the Colorado River (these rights are a subset of the water allocations per state in which they are located); a portion of this water has been developed to date. Congress may be asked to fund new or upgraded infrastructure to develop existing tribal water rights, as well as to consider new settlements that would add to the existing tribal diversions. Any potential additional tribal diversions along these lines could result in reduced availability for other users.

In the 119th Congress, S. 953 and H.R. 2025 both would authorize a potential settlement of Colorado River Basin water rights claims of the Navajo Nation, the Hopi Tribe, and the San Juan Southern Paiute Tribe (who occupy lands within the Navajo Reservation in Arizona and Utah but

do not have a reservation of their own) for the waters of the Little Colorado River and the Colorado River in the state of Arizona. The bills would authorize federal contributions of $5.0 billion to the Tribes, with $1.7 billion dedicated to a major pipeline project that Reclamation would be required to complete by the year 2040.[170] The bills also would set allocations of Colorado River water for each tribe: the allocation for the Navajo Nation in Arizona under the settlement would be 44,700 AF per year, plus 2,300 AF per year for the Hopi; both of these amounts would be derived from Arizona's Upper Colorado River Basin allocation. The settlement also would award rights for Lower Colorado River Basin water (3,600 AF per year of Lower Basin water) and all water from the mainstream and tributaries of the Little Colorado River (itself a tributary of the Colorado River) that reach both reservations, along with rights to washes and groundwater below the reservations.

Separately, Congress may consider the status of ongoing restoration programs in the basin. For instance, H.R. 831 and S. 291 both propose amendments to and extension of the Lower Colorado River Multi-Species Conservation Program. Both bills would establish an interest-bearing account in the Treasury for nonfederal contributions to the program.

Infrastructure Alterations and New Facilities

Congress may consider the status of congressionally authorized infrastructure on the Colorado River, in particular Glen Canyon Dam. Should water levels continue to fall near or below the hydropower intakes at the dam, it could affect releases to the Lower Basin.[171] The Lower Basin in particular has advocated options that would allow for releases from Lake Powell at lower levels, in accordance with the Colorado River Compact. In their comments on the 2026 DEIS, Lower Basin representatives asked that Reclamation consider alternatives that include Glen Canyon Dam infrastructure modifications that would allow for releases below minimum power pool (3,490 feet).[172] The EIS included no such options. However, Reclamation has previously undertaken accelerated maintenance actions at the dam to determine the reliability of using the dam's river bypass tubes to enable Lower Basin releases at storage levels below minimum power pool, and determined a range of releases through the river outlet works at low storage levels.[173] Reclamation is also studying the efficacy of physical modifications to Glen Canyon Dam to allow for additional releases below critical elevations.[174] Reclamation would require congressional authorization prior to pursuing significant alterations to Glen Canyon Dam and related facilities.

In considering the water scarcity needs of the basin, some have proposed major investments to add water supplies in the basin. For example, H.R. 10420 would authorize $5 billion for a water augmentation program, $1.0 billion to restart the Yuma Desalting Plant, $1.0 billion for Mexican

[170] Up to $1.715 billion of the authorized funding would go toward a pipeline to divert Upper Colorado River water from Lake Powell to the tribal areas covered in the settlement. The pipeline would have a capacity to deliver of up to 7,100 acre-feet per year (AFY) of potable Colorado River Water to the Navajo Nation (for use in delivering up to 6,750 AFY to serve Navajo communities and up to 350 AFY to serve the San Juan Southern Paiute Southern Area), and up to 3,076 AFY of potable Colorado River Water to the Hopi Tribe.

[171] For more information, see CRS Report R47497, *Long-Term Drought and Glen Canyon Dam: Potential Effects on Water Deliveries and Hydropower*, by Charles V. Stern and Ashley J. Lawson.

[172] Letter from Colorado River Basin States Representatives of Arizona, Colorado, and Nevada to the Honorable Doug Burgum, Secretary of the Interior, February 13, 2025.

[173] Richard LaFond, *Establishment of Interim Operating Guidance for Glen Canyon Dam during Low Reservoir Levels at Lake Powell*, Bureau of Reclamation, Technical Decision Memorandum, March 26, 2024, https://usbr.gov/uc/DocLibrary/Memos/20240326-EstablishmentInterimOperatingGuidanceGlenCanyonDamLowReservoirLevels-TechnicalDecisionMemo-508-TSC.pdf.

[174] Reclamation, "Glen Canyon Dam Put to the Test," *UC Today Newsletter*, Winter 2023, https://www.usbr.gov/uc/special/20230100-UCToday.html.

desalination efforts, and $12.0 billion for water supply projects throughout the Upper and Lower Basins. Separately, a group called the BlueRibbon Coalition has advocated for a "Colorado River Abundance Act," which among other things would invest in desalination facilities, water conveyance, and other infrastructure, at an estimated cost of $40 billion from FY2026 through FY2035.[175] In June 2026, the Secretary of the Interior signed a memorandum with multiple Lower Basin entities establishing a framework for evaluating how new water supplies produced through desalination or water recycling could be integrated into basin operations through "paper" transfers of water.[176]

Concluding Observations

There is wide acknowledgement that the previous federal operational regime for the Colorado River Basin is not aligned with available basin water supplies and uses. As a result, major reductions in water use and alterations to facility operations are likely necessary in the near future. The original basis for the Colorado River Compact and development of the river's infrastructure assumed more water than has typically been available, and long-term aridification in the basin has exacerbated this issue. Although past agreements succeeded in conserving water relative to previous baselines, some studies have shown that inflows have also decreased and have regularly fallen short of forecasted levels.[177] The resulting rapid drawdown of basin storage threatens water deliveries, hydropower production, basin ecosystems, and many other uses. Long-term flow projections anticipate available supplies continuing to decrease, while population growth and other uses create intense competition for scarce resources.

Despite agreement that significant water delivery reductions are necessary, there remain considerable differences of opinion as to precisely what form these actions should take. Recently, the EIS process for post-2026 operations has been a focal point for these debates. The question of which basins, states, and contractors should be subject to water delivery reductions, and in what amount, as well as what (if any) mitigation should accompany these efforts, takes on an added level of urgency due to the river's economic importance to many areas and their populations, industries, and agricultural operations. The relative priority of water rights in the basin, compared to priority for health, safety, and other uses, is a central issue facing congressional decisionmakers and others charged with the allocation of the basin's scarce water resources. Related questions, including alterations to basin infrastructure, are also likely to figure prominently in ongoing basin planning. Due to its unique authorities in the basin, the federal government, including Congress, is heavily involved in these discussions.

[175] For more information, see https://blueribboncoalition.org/colorado-river-abundance-act/.

[176] Reclamation, "Reclamation Advances Effort to Expand Water Supply Tools for Challenged Colorado River Basin," Press Release, June 3, 2026, https://www.usbr.gov/newsroom/news-release/5346.

[177] Jian Wang et al., "Evaluating the Accuracy of Reclamation's 24-Month Study Lake Powell Projections," Center for Colorado River Studies, February 18, 2022, https://www.usu.edu/ilwa/coloradoriver/files/news/White-Paper-7.pdf.

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