PPIC | PUBLIC POLICY INSTITUTE OF CALIFORNIA

Tribal Water Rights in California

Technical Appendix

Brian Gray

with research support from Spencer Cole, Kyle Greenspan, and Gokce Sencan

Supported with funding from the S. D. Bechtel, Jr. Foundation

CONTENTS

"The Indians had command of the lands and the waters—command of all their beneficial use, whether kept for hunting, 'and grazing roving herds of stock,' or turned to agriculture and the arts of civilization. Did they give up all this? Did they reduce the area of their occupation and give up the waters which made it valuable or adequate?"

Winters v. United States, United States Supreme Court (1908)

A Note on Scope and Terminology

In writing this report, we were presented with several questions of scope and terminology. The first was geographic. What Tribes should be included in a study of "Tribal Water Rights and Water Use in California"? The Native inhabitants of the region were not restricted by fixed geographic boundaries, although the Tribes and Bands did group themselves by language, topography, hydrology, culture, and custom. (Heizer 1978) See Figure 2. Moreover, before statehood in 1850, there was no such place as California—although the Spanish and Mexican governments did call the area that (more or less) would become the state, "Alta California."

We decided to limit the study to Tribes that inhabit and use water on reservations that are wholly or partly within the geographic boundaries of California. This excludes Tribes such as the Cocopah—whose ancestral lands embraced portions of what are now California, Arizona, and Mexico in the Lower Colorado River Valley and Delta—but whose reservation is located entirely in Arizona. It also omits Tribes such as the Pyramid Lake Tribe and the Walker River Tribe, which have federal reserved rights to water that originates in California, but whose reservations are entirely in Nevada. And it excludes Tribes such as those that inhabit the Klamath River Reservation in Southern Oregon, who hold treaty-based water rights to support their ancestral hunting and fishing rights in common with those of the Lower Klamath River Tribes whose reservations and traditional fishing places are in California.

The second question was linguistic. What should the original inhabitants of (what is now) California be called? They generally referred to themselves by reference to geography, other Tribes, or time. For example, the Yokuts who inhabited most of the San Joaquin Valley, Tulare Basin, and adjacent foothills were simply "the People." (Reid and Berry 2025) The Yurok, who lived along the Lower Klamath River, originally called themselves Pu lik la, the "Downriver People." (Yurok Tribe 2025) The Fort Yuma Quechan ("Kwatsáan"), whose reservation is on the Lower Colorado River, are "those who descended." (University of Arizona 2025) Later, a number of Tribes accepted the names assigned to them by the Spanish, who often referred to the Tribes by mispronunciations of the ancestral Tribal names or by attaching the names of missions or other locational references. The Mission "Luiseño" Indians, for example, take their name from their proximity and (involuntary) relationship to Mission San Luis Rey in Southern California. (Bean and Shipek 1978)

Although we generally refer to the individual Tribes by their official name (e.g., the Agua Caliente Band of Cahuilla Indians), we have tried to incorporate as many of the ancestral Tribal names as possible, especially in the Tribal histories. We also use a variety of names to refer to California's original inhabitants, including Native Californians, aboriginal inhabitants, Native population, First Peoples,

Indigenous inhabitants, California Indians, Indian Tribes, California Native American Tribes, and Tribal nations. In most places in this report, the choice of name corresponds with the period of history under discussion. Unless specially noted, we use the terms "Tribe" and "Band" synonymously.

The third question was organizational. Should the report attempt to cover all the Tribes in California that hold, or may hold, water rights? Or should we limit this report to those Tribes that hold quantified water rights under federal law? We chose the latter largely for practical reasons, as a detailed study of each of the more than 160 Tribes and Tribal groups within California would be impossible to include in a single study. We therefore decided to focus this report on the 16 Tribes that have quantified water rights under the federal reserved water rights doctrine, statutory law, or settlement agreement. We then hope to use these case studies as a foundation for subsequent exploration of the other Tribes' ancestral, contemporary, and potential future water uses, and for follow-up analyses of the rights that may support such uses. Part 8 of this report—which considers water rights, water quality, and other strategies that most of California's Tribes and Tribal communities may employ to secure and protect their water resources—is intended to serve as a bridge between this first phase of our studies and subsequent investigations.

The fourth question was legal. Should we describe Tribal water rights colloquially or formally? This question arises because, legally, most federal reserved water rights do not belong to the Tribes. Rather, the water rights are assigned to the Indian reservation that a Tribe or Tribes inhabit, and they are held in trust by the United States for the benefit of the Tribes. Because this report focuses on the quantities of water available to and used by the Tribes under the federal reserved rights doctrine or other federal law, we decided simply to use the terms "Tribal reserved water rights" or "reserved rights held by the Tribe"—despite the technical inaccuracy of this terminology.

Finally, for readers who may not yet be conversant in water policy, we would like to introduce a few important terms that are commonly used to measure and describe the volume and flow of water:

- The volume of standing bodies of water, such as lakes and reservoirs, is measured in "acre-feet." An acre foot is equal to approximately 326,000 gallons—the volume of water that would cover a football field to a depth of one foot.
- The flow of water in a river is measured by "cubic feet per second" or "cfs." A cubic foot is approximately 7.5 gallons. We also use cfs to describe minimum bypass or release requirements applicable to reservoir operations.
- The quantity of water that a water right holder may divert or pump—as well as the amount that is delivered to water users, contractors, and customers—is measured by "acre-feet annually" or "afa." This same term is used to describe the volume of water that is produced within a watershed in any given year.

Introduction

The water rights that support most water use in California—including its population of almost 40 million, its $4 trillion annual gross domestic product, and the largest agricultural sector in the United States—are based on state statutes and common law principles. These laws recognize riparian and appropriative rights

to divert and use surface water and a parallel set of laws that apply to groundwater extraction and use—all subject to the constitutional doctrine of reasonable and beneficial use, the public trust, and other principles that govern the use of water.

In contrast, most Tribal water rights are founded on federal law—treaties, statutes, executive orders, and judicial decisions—that secure adequate water resources for use on Indian reservations. These "federal reserved water rights" support Tribal communities and economies and ensure ancestral rights to hunt, fish, and engage in ceremonial, religious, and other traditional practices. Federal law also recognizes that the Tribes are sovereign nations that possess rights to use water that are largely independent of state law and regulation.

Tribal reserved water rights generally are senior in priority to those held by other water right holders within the same river or groundwater basin. In some cases, this priority is based on a Tribe's occupancy and use of its ancestral lands and resources from "time immemorial." In others, the seniority of the Tribal right is based on the date on which a treaty, executive order, or act of Congress established a reservation of land for the Tribe's permanent occupancy, governance, and use.

One hundred and nine Tribes inhabit Indian reservations that are located wholly or partly in California.[1] Of these, 16 Tribes hold water rights that have been quantified by judicial decree, congressional legislation, or settlement agreement. They include four Tribes (or Tribal groups) along the Lower Colorado River, seven bands of "Mission Indians" whose reservations are in the upper watersheds of the San Luis Rey and Santa Margarita Rivers in the coastal mountains and foothills of Southern California, one Tribe whose reservation includes a portion of Death Valley National Park, one Central Valley Tribe, one Coachella Valley Tribe, and two Tribes in Northwest California that have federal reserved rights to the waters of the Klamath River to support ancestral hunting and fishing rights.[2]

[1] For a list of the 109 federally recognized Tribes in California, see US Environmental Protection Agency (2025b).

[2] Table 1 lists the 16 Tribes whose water rights have been quantified under federal law. It includes the maximum annual diversion or extraction rights for the 14 Tribes that have rights to divert surface water, to pump groundwater, or to receive supplemental supplies. These water rights overstate actual Tribal uses, however, as most Tribes do not divert or extract their maximum annual entitlements, and some do not yet possess the infrastructure needed to fully exercise their water rights. Table 1 omits the surface water rights of the Ramona Band of Cahuilla Indians and the Cahuilla Band of Mission Indians whose rights to the waters of the Santa Margarita River system have been confirmed by judicial decree, but which remain unquantified. See Part Four: Coda.

FIGURE 1

Federal Indian reservations in California

SOURCE: Reservation boundaries are obtained from the US Bureau of Indian Affairs. Lake, river, and stream boundaries are obtained from the USGS National Hydrography dataset and Lincoln Institute of Land Policy. Water features in the San Francisco Bay Area were obtained from the Metropolitan Transportation Commission.

NOTE: This map shows the locations of the federally recognized Indian reservations located wholly or partly within California. The named reservations are home to the 16 Tribes that have quantified federal water rights, plus two others (Ramona and Cahuilla) whose resident Tribes have water rights that have been confirmed by judicial decree, but which have not yet been quantified. Reservations smaller than 7,500 acres are shown as point locations to improve visibility.

Most of the reservations with quantified water rights are far from California's population centers and developed agricultural lands, and the Tribes that inhabit them are relatively small water users within their respective river systems and groundwater basins. Although their quantified water rights are of vital importance to these Tribes, even in the aggregate they represent but a tiny fraction of water use in California—less than one percent of average annual applied surface water and groundwater use.[3]

[3] Quantified Tribal reserved water rights total 212,461 afa. On average, California's applied water use—the quantity of water delivered to domestic, commercial, industrial, and irrigation uses—is approximately 38 million afa. (Mount, Hanak, and Peterson 2023)

TABLE 1

Quantified Tribal water rights in California

Tribe and Reservation	River System or Groundwater Basin	Diversion, Extraction, or Delivery Right	Priority Date	Type of Water Included in the Judicial Decree, Settlement Agreement, or Legislation	Type of Legal Confirmation of the Tribal Water Rights
Fort Mojave	Lower Colorado River	16,720 afa	1890	Surface Water	Judicial Decree
Chemehuevi	Lower Colorado River	11,340 afa	1907	Surface Water	Judicial Decree
Colorado River	Lower Colorado River	56,846 afa	1873-1876	Surface Water	Judicial Decree
Fort Yuma (Quechan)	Lower Colorado River	71,616 afa	1884	Surface Water	Judicial Decree
La Jolla, Pauma, Rincon, Pala, and San Pasqual Bands	San Luis Rey River	16,000 afa	--	Imported Supplemental Surface Water	Congressional Legislation
Soboba Band of Luiseño Indians	San Jacinto River Basin	9,000 afa	1883 & 1891	Local and Imported (Recharged) Groundwater	Congressional Legislation
Pechanga Band of Luiseño Indians	Santa Margarita River	4,994 afa	1882	Local Surface and Groundwater; Recycled Water; Imported (Recharged) Groundwater	Congressional Legislation
Timbisha Shoshone	Death Valley Basin	117.1 afa	2000	Native Groundwater	Congressional Legislation
Tule River	South Fork of the Tule River	5,828 afa	1873	Surface Water	Settlement Agreement
Agua Caliente Band of Cahuilla	Indio Subbasin	20,000 afa	1876	Native Groundwater	Settlement Agreement
Yurok	Klamath River	Indirectly Quantified	1855	Surface Water (Instream Flow)	Judicial Decree
Hoopa Valley	Klamath River	Indirectly Quantified	1876	Surface Water (Instream Flow)	Judicial Decree

SOURCES: Various sources described in the tables and text below.

NOTES: (1) The Fort Mojave Indian Reservation extends into Arizona and Nevada, and the Colorado River and Fort Yuma Reservations extend into Arizona. These data include only their respective diversion rights for their reservation lands in California. (2) The San Luis Rey River Indian Water Authority manages the "Supplemental Water" that is imported from the Colorado River for the La Jolla, Pauma, Rincon, Pala, and San Pasqual reservations. The settlement agreements and legislation that confirm the Tribes' rights to this Supplemental Water expressly preserve their federal reserved water rights to native surface water and groundwater, which remain unquantified. (3) The Agua Caliente and Timbisha Shoshone Tribes' water rights include small quantities of surface water for ceremonial and traditional uses. (4) The Tule River Tribe and the Agua Caliente Band are currently seeking congressional approval and authorization of their respective water rights settlement agreements. (5) The term "Imported (Recharged) Groundwater" means imported surface water that is stored in local groundwater basins and is available for Tribal extraction and use. (6) The instream reserved rights of the Yurok and Hoopa Valley Tribes to support ancestral fishing rights and ceremonial practices are currently quantified in relation to regulatory stream flow requirements that protect federally listed endangered species.

The federal reserved water rights of the vast majority of California's 109 federally recognized Tribes have not yet been quantified.[4] In addition, more than 55 Tribes currently lack federal recognition and therefore do not qualify for federal reserved water rights.[5] These disparities are the result of the individual histories of dispossession and loss that each Tribe suffered during the years of Spanish, Mexican, and American colonization and governance. These historical circumstances, and the geographic patterns that emerged from them, are described in detail throughout this report.

This study is a companion to *Tribal Water Rights in California*. Its purpose is to serve as foundation for analysis and understanding of the various topics explored in the main report. The study begins with a history of the Native peoples of California—including their occupancy and use of their ancestral lands and waters, the processes by which they were dispossessed of these resources, Spanish and Mexican policies governing Alta California, the consequences of the Gold Rush and California statehood, the vicissitudes of federal Indian policy, and the effects of land and water resources development on the Tribes that endured the previous century of displacement and loss.

The analysis continues with a review the federal reserved water rights doctrine—the principal means by which many Tribes in California (and other places in the American West) formally preserved or regained rights to use the surface waters and groundwaters within their respective reservations. It then takes a close look at the 16 Tribal Nations that hold quantified water rights under federal law.[6] These case studies include specific Tribal histories of ancestral land and water use, creation of individual reservations, and overviews of contemporary water use. They also cover a variety of related topics, such as water supply and distribution infrastructure, Tribal authority to transfer water for use off-reservation, Tribal rights to

---

[4] Figure 1 shows the locations of the federal Indian reservations in California, including the 16 that have quantified federal reserved water rights. Several reservations are comprised of lands in two or more discrete locations. These include the Robinson Rancheria of Pomo Indians, the Enterprise Rancheria of the Estom Yumeka Maidu Tribe, the North Fork Rancheria of Mono Indians, the Tule River Reservation, and the Timbisha Shoshone Reservation. (US Environmental Protection Agency 2025a; World Population Review 2025)

[5] Since 1978, more than 80 California Tribal groups have taken steps to obtain federal recognition (a process also known as "federal acknowledgement"). Only one Tribe, the Timbisha Shoshone discussed in Part Five, has been successful. (Chilcote 2024) Although some estimates run higher, the most recent state reports on the subject identify 55 or 56 non-federally recognized Tribes in California. (California Native American Heritage Commission 2016; California State Water Resources Control Board 2019)

According to the US Bureau of Indian Affairs, five Tribes in California have acknowledgment petitions that are "in process." These are the Fernandeño Tataviam Band of Mission Indians, the Salinan Tribe of Monterey and San Luis Obispo Counties, the Southern Sierra Miwuk Nation, the Gabrielino-Tongva Nation, and the Juaneño Band of Mission Indians, Acjachemen Nation (US Bureau of Indian Affairs 2026) In addition, legislation is pending in the 119th Congress that would confer federal recognition on the Mono Lake Kootzaduka'a Tribe. (US House of Representatives 2025) Federal acknowledgment is a long and difficult process. A 2022 study concluded that there were more than 400 tribes seeking federal recognition, with only 18 officially in process. (Prado 2022)

Although non-federally recognized Tribes are not eligible for federal reserved rights, they may hold water rights under state law. See Part Eight.

[6] The water rights of 11 of these Tribes are based on the federal reserved water rights doctrine. The water rights of the five Band included in the 1988 San Luis Rey Indian Reservations Water Rights Settlement Act hold water rights that derive from a settlement agreement that settled litigation in which they sought quantification of their federal reserved water rights. As described in Part Four, a 2016 congressional amendment to the 1988 legislation states that the water quantified in the settlement agreement and 1988 legislation is "Supplemental Water" and stipulates that the five Tribes "had, have, and continue to possess federally reserved rights and other water rights held in trust by the United States." (US Congress 2016a) These reserved water rights remain unquantified.

instream flows to support ancestral fishing rights and ceremonial practices, and the relationship among the Tribes, water managers, regulators, and other water users within the same watershed or water supply system.

Because so few Tribes in California have quantified federal reserved water rights, this study also reviews other strategies that Tribal Nations might use to protect the water resources on which they depend for their social, cultural, and economic well-being. These strategies include assertion of ancestral rights to water, establishment or confirmation of water rights under California law, and protection of Tribal beneficial uses through federal and state water quality standards and through the Tribes' own water quality regulations.

Part 1: A Brief History of Tribal Water Use and Dispossession

Prelude

Just west of downtown San Mateo, there is a plaque embedded in a stone monument that reads:

"Here on the banks of San Mateo Creek, Captain J. B. de Anza camped. March 29, 1776, after exploring the peninsula and selecting the sites for the Mission and Presidio of San Francisco. Here also the party of families, soldiers, and priests, on the way to establish San Francisco, camped for three days, June 24-27, 1776." (California State Parks 2026a)

The creek was inhabited by the Ssalson Ohlone Tribe, which was a band of Ramaytush Ohlone whose ancestral lands included the entire San Francisco Peninsula. The Ssalson lived in three villages along San Mateo Creek. Their territory extended from the Coast Range headwaters to the valley formed by the San Andreas Fault to the small canyon that channeled the waters eastward to de Anza's camp and on to the estuary and wetlands between Coyote and Little Coyote Points. The creek—along with the other great rivers and small streams that flowed into the San Francisco Bay—teemed with Chinook salmon, coho, and steelhead, which spawned in the shade of coastal redwood, live oak, and bay laurel that filled the riparian corridors and adjacent slopes of the upper watershed. (Margolin 1978; Association of Ramaytush Ohlone 2025)

On the evening of March 29th, de Anza completed his exploration of the San Andrés Valley below Sweeney Ridge and made his way down into San Mateo Creek. "There," he wrote in his journal, "I found in our camp nearly all the men of the village, very friendly, content, and joyful, putting themselves out to serve us in every way, a circumstance which I have noted in all the natives seen from the 26th up to now, but one which I had not experienced theretofore since leaving the People of the Colorado River." (University of Oregon 2022)

Although apparently congenial, this first encounter would prove to be inauspicious for the Indigenous inhabitants. The party that camped along San Mateo Creek in June would proceed north to one of the locations recommended by de Anza, another small creek the Spanish had named Arroyo de los Dolores.

The leader of the expedition, Father Junipero Serra, founded Mission San Francisco de Asís on June 29th. It was the sixth in the chain of missions that began with San Diego de Alcalá and extended along the entire south and central coastal plains of Alta California. (California Missions Foundation n.d.) With the opening of the missions began the process of enslavement of the coastal Tribes, seizure of their ancestral lands, and destruction of their communities and culture.

A continent away, the delegates to the Second Continental Congress were meeting in Philadelphia to draft their declaration of independence from Great Britain. On July 4th, they would proclaim the formation of the United States of America and set in motion a long period of westward expansion to the Pacific Coast. The American era in California coincided with the Gold Rush. These two events—the discovery of gold in 1848 and statehood in 1850—marked the beginning of the dispossession and dissolution of much of the rest of Native California.

The Ssalson People who warmly welcomed their visitors on those early spring and summer evenings could not have imagined that, within a few decades, the world that they and their ancestors had known for millennia would all but vanish.

Indigenous California

Before contact, the lands that now comprise California were among the most densely populated and linguistically diverse in North America. (Anderson 2005)[7] The most widely accepted estimate of California's pre-contact population is 310,000 individuals, about 13 percent of North America's Indigenous population. (Cook 1976; Akins and Bauer 2021) There were 80 to 90 spoken languages and dialects within approximately 20 major language groups. (California Language Archive n.d.; Golla 2011) Most Native Californians lived in villages, many of which were interconnected by common (or at least related) language and trade.[8] They inhabited all corners of California's various landscapes and ecosystems. (Heizer and Elsasser 1980; Anderson 2005) See Figure 2.

[7] As M. Kat Anderson has written, pre-contact California "contained the most diverse native cultural groups of any other state or country of comparable geographic size" in the Western Hemisphere. "Most anthropologists agree that, north of Mexico City, California held the highest densities of people of any area of equal size in North America." (Anderson 2005)

[8] Tribes in the more arid regions tended to divide into seminomadic bands of 20 to 30 individuals, which would gather periodically to share food or for ceremonial purposes. (Golla 2011)

FIGURE 2

Indigenous Tribal groups and languages in California

SOURCE: A Map of California Tribal Groups and Languages at the Time of European Contact by Concerto, Wikimedia Commons, licensed under CC BY-SA 3.0.

Freshwater was a central feature of California Indian life. The Tribes lived along lowland rivers, mountain streams, freshwater lakes, artesian springs, and coastal estuaries. They used these waters in myriad ways, including transportation and commerce, hunting and gathering, processing of food and raw

materials, and ceremonial and religious practices. They drank from the rivers, lakes, and springs, and they harvested fish in great abundance. (Shilling et al. 2014) Several Tribes identified themselves by their connection to their waters. (Heizer and Elsasser 1980; Anderson 2005)[9] These ancient bonds continue to this day and remain important elements of Tribal cultures, economies, and spirituality.

The Tribes that lived along the great rivers of Northwest California—the Smith, Klamath, Trinity, and Eel—shaped their lives and livelihoods around the rivers and their fisheries. The Tolowa, Yurok, Hupa, Karuk, Shastan, Wiyot, Chilula, and Whilkut People constructed weirs and small dams to capture Chinook salmon, coho, steelhead, green sturgeon, eulachon (candlefish), and Pacific lamprey using spears, nets, and willow baskets. (Heizer and Elsasser 1980; Anderson 2005)[10] To manage fish harvests and reduce conflict, several Tribes recognized exclusive use rights to some riverfront lands and fishing grounds. The holders of these familial rights could harvest fish for their own uses, but they also were responsible for sharing the catch with other Tribal members. (Pilling 1978; Heizer and Elasser 1980) In common with the traditions of the other Tribes of the Pacific Northwest and Southern Canada, California's North Coast Tribes also honored (and continue to honor) each year's returning salmon runs with "First Fish" ceremonies. (Gunther 1928; Aldern 2019)[11]

Chinook salmon, steelhead, and sturgeon also flourished in the waters of the Sacramento and San Joaquin River system, providing abundant sources of food for Tribes throughout the Central Valley, the foothills and canyons of the western Sierra Nevada, and watersheds of San Francisco Bay.[12] The spring snowmelt and runoff would turn the valleys into vast inland seas, creating cold, slow-moving, and nutrient-rich habitat for millions of juvenile fish and for tens of millions of migratory birds and terrestrial animals. (Garone 2011)[13] The Wintu, Patwin, Maidu, Yokuts, and Miwok People lived in villages of more than 1,000 individuals. "Many of the settlements were situated on top of very large high, natural earth mounds

---

[9] The Winnemem Wintu, who inhabited portions of the Upper Sacramento River watershed, called themselves "The Middle Water People," as "the Winnemem Waywaket (McCloud River) is bounded by the Nomtipom Waywaket (Upper Sacramento River) to the west and the Pit River to the east." (Winnemem Wintu n.d.) The Nüümü, Owens Valley Paiute, called their lands "Payahuunadü," the land of flowing water. The Mojave Indians, who lived along the lower Colorado River, were the Pipa Aha Macav, "The People Who Live Along the Water." Their spiritual mentor, Mastamho, "drove a willow stick into the ground and drew out the waters that became the Colorado River, and with the river came fish and ducks. Mastamho made the mountains on both sides of the river using the mud of its banks. He planted seeds of melon, corn, pumpkin and beans in the overflow, so the people would have food to eat." (Fort Mojave Indian Tribe n.d.)

[10] Chinook salmon and steelhead spawned as far upriver as Upper Klamath Lake in what is now southern Oregon. The Chinook salmon were so abundant in the Klamath-Trinity River system that they evolved into six different "runs" or "stocks"—adapting the timing of in- and out-migration to maximize the carrying capacity of their aquatic habitat. (Moyle 2002)

[11] The Winnemem Wintu would honor the first salmon by lighting fires along the banks of the McCloud River to help guide the fish upstream. (NOAA Fisheries 2024a)

[12] The aboriginal Sacramento-San Joaquin River and Delta ecosystem was so rich and varied that the Chinook salmon species diversified into 12 runs, four of which—the Sacramento River winter-run and the Central Valley spring, fall, and late fall runs—are now recognized as distinct "evolutionary significant units." (Moyle 2002; California Department of Fish and Wildlife 2026a) Fisheries biologists have estimated that annual Central Valley salmon runs ranged from one to two million fish. (Yoshiyama, Fisher, and Moyle 1998)

[13] In the Tulare Basin, which has no connection to the Pacific Ocean under most hydrologic conditions, high river flows in the San Joaquin and Kings River systems would intermingle, allowing salmon to enter the Kings River Delta. Some of these fish would migrate as far south as Tulare Lake, where they were harvested by the Yokut People who lived in villages surrounding the lake. (Moyle 2002) The Yokut also would hunt deer, elk, bison, waterfowl, and other animals in the wetlands and riparian forests of the Tulare Basin. (Preston 1981; Akins and Bauer 2021)

. . . to keep the houses and villages dry during the spring flood[s].” (Heizer and Elasser 1980) The Central Valley Tribes caught fish, hunted and trapped on the valley wetlands, harvested edible plant roots and seeds, and cut reeds and grasses to construct their boats and dwellings and to weave into baskets and clothing. (Anderson 2005; Garone 2011)

The coastal Tribes caught coho salmon and steelhead from the small rivers and streams that flowed from the Coast Range into the Pacific Ocean. These waters also provided nutrients for the estuaries and wetlands from which the coastal inhabitants harvested shellfish, trapped waterfowl and other animals, and gathered grasses and reeds to weave into clothing, baskets, and building materials. Many of the Tribes also hunted sea lions, otter, and other marine mammals. (Margolin 1978; Heizer and Elasser 1980) Acorns too were an important dietary staple for the coastal Tribes, as they were for many other Native Californians. They would pound the acorns into a mash and then soak the meal in water from streams and springs to remove the tannic acids. (Anderson 2005; Atkins and Bauer 2021)

The Washoe, Maidu, and Paiute Peoples who lived along the eastern Sierra Nevada also congregated around rivers, lakes, and springs. The streams flowing east from the mountains were home to Lahontan cutthroat trout, Paiute sculpin, tui chub, Tahoe sucker, Lahontan speckled dace, and other species. (Moyle 2002) The Walker River Paiute called themselves “Agai Dicutta Numa,” or Trout Eaters. (Walker River Paiute Tribe 2006) Further south, the Kootzaduka’a Bands harvested brine shrimp, alkali fly pupae, and salt from Mono Lake, and they gathered pine nuts and hunted pronghorn antelope and rabbits from its surrounding forests. (Mono Lake Committee 2026) The Nüümü People (Owens Valley Paiute), built dams on the Owens River to harvest tui chub, sucker, speckled dace, and pupfish. They also diverted water from the river and its tributaries to irrigate taboose, nahativa, lovegrass, crested wheatgrass, and Great Basin wild rye through a network of canals and ditches. (Anderson 2005; Owens Valley Indian Water Commission 2018)

In the Colorado River basin, spring snowmelt from the Rocky Mountains would flood the Lower Colorado River Valley, depositing rich layers of silt and nutrients on Aha Makav, Chemehuevi, Kwatsáan, and Cocopah lands. When the floodwaters receded, the Native Peoples would plant corn, beans, squash, melons, and other seed crops. (Heizer and Elasser 1980) They carried water from the river for domestic uses in their homes and villages, harvested mesquite from its riparian forests, fished its waters, hunted along the banks of the river and the islands of the delta, and used the river for commerce and ceremonial purposes. Some of the Tribes dug ditches and canals to divert water from the river to irrigate adjacent uplands areas, as well. (Castetter and Bell 1951; US Department of the Interior et al. 2018)

The Tribes that inhabited the Southern California interior—Bands of Vanyume, Takhtam (Serrano), Ivilyuqaletem (Cahuilla), Chemehuevi, Payómkawichum (Luiseño), and Kumeyaay—built their villages along mountain streams, alluvial fans, artesian springs, and desert lakes. They caught tui chub and other small fish, and they hunted deer, antelope, mountain sheep, rabbits, and other animals. They gathered seeds and grasses, irrigated corn and squash, and harvested acorns, berries, pine nuts, and mesquite. (Bean 1978; Bean and Shipek 1978; Bean and Smith 1978; Biller 2025) The southern Cahuilla Bands dug wells to access the groundwater that underlay their lands, and they hunted waterfowl on the shores of the ancient Lake Cahuilla. (Bean 1972; De Crinis 2020) The Vanyume built their villages along the Mojave River. Soda Lake, the intermittent river’s terminus, was both an important source of salt and a regional

trading center that connected various Tribes and Bands from the Pacific Coast to the Colorado River. (Earle 2005)

For more than 12,000 years, the Native Peoples of California had unfettered access to its lands, waters, and other natural resources. They "knit themselves to nature through their vast knowledge base and practical experience," which enabled them to sustainably manage their lands, waters, and other resources to provide food, drinking water, medicine, clothing, building materials, pottery, baskets, and other goods. (Anderson 2005) This rich and diverse civilization—and the indigenous economy these first inhabitants created—would, over the course of a single century, be decimated by colonization, violence, displacement, and development.

Alta California: Contact, Christendom, and Colonial Rule

The colonization of California, which began in 1769 with the founding of Mission San Diego, irrevocably changed the lands, the waters, and the lives of the Tribes and their members. As the Spanish created new missions, established pueblos and presidios,[14] and granted grazing rights in the coastal plains and valleys,[15] the Native Californians who inhabited these lands were gradually displaced. Many were enslaved at the missions or conscripted to work in the pueblos and on ranchos created from the Spanish land grants. By 1821, when Spain ceded Alta California to the new Mexican government, the missions and ranchos occupied more than eight million acres—including much of the Southern California coastal plain, the central coast from Santa Barbara to the Salinas Valley, and extensive portions of the Bay Area. (Robinson 1948; California Native American Heritage Commission 2026)

Under Spanish law, title to the mission landholdings lands was vested in the Spanish Crown, and the Franciscan Friars administered the lands in trust for the original Native inhabitants. The grazing rights for these lands—granted to about 30 retired Spanish army officers—were made subject to the Tribes' rights of occupancy, which protected their villages, farms, and grazing lands. Moreover, "consistent with the principles respecting Indian property rights set forth in the Spanish Laws of the Indies, . . . the grantee's rights were conditioned on no harm being done to Indians living upon those lands." (Wood 2008)

These legal principles would prove to be of little practical value to the diverse Tribes and Bands on whose lands the missions, pueblos, and ranchos were built.[16] By the end of the Spanish era, the coastal Tribes had been fragmented, their members dispersed and impoverished, and their ancestral lands occupied by a

[14] The Spanish founded a total of 21 missions, which extended from Mission San Diego de Alcalá to Mission San Francisco Solano. They also established four pueblos—Los Angeles, San Jose, San Francisco, and Branciforte (Santa Cruz)—and four presidios (military forts) in San Diego, Santa Barbara, Monterrey, and San Francisco. (Caragozian 2022)

[15] Under Spanish rule, territorial governors and local officials made 30 land grants, most to retired military officers, to graze cattle on land in Alta California's coastal plains and inland valleys. (Robinson 1948) Unlike the later Mexican land grants, these grants or "concessions" conveyed use rights, but they did not convey title. Title to the lands remained with the Spanish Crown. (California Native American Heritage Commission 2026) The Mexican government later made new grants for these lands, which conveyed full title. (Wood 2008)

[16] The Tribes whose lands the missions occupied were too numerous to list here. As shown on Table 1, however, they included 25 primary Tribal groups, which in turn embraced hundreds of individual Tribes and Bands that shared geographies, culture, languages, and commerce.

new population of Californios who were loath to surrender that which they had taken. (Weber 1992; Jackson and Castillo 1995)[17]

The loss of Tribal lands and Tribal cohesion increased dramatically during the years of Mexican sovereignty over Alta California (1821-1848). The Mexican government "secularized" the missions in 1833, expelling the Spanish Friars and granting title to the missions' extensive agricultural lands to Mexican citizens. Although Mexican law reserved one-half of the former mission lands for the native Californians who had worked the mission lands, only a few of these "Mission Indians" received legal title. (Wood 2008) Instead, most continued to labor on the former mission lands after they were divided and transferred to private ownership. Others found work in the rapidly growing pueblos and on new ranchos where they worked under a peonage labor system. (Anderson 2005; California Native American Heritage Commission 2026)[18]

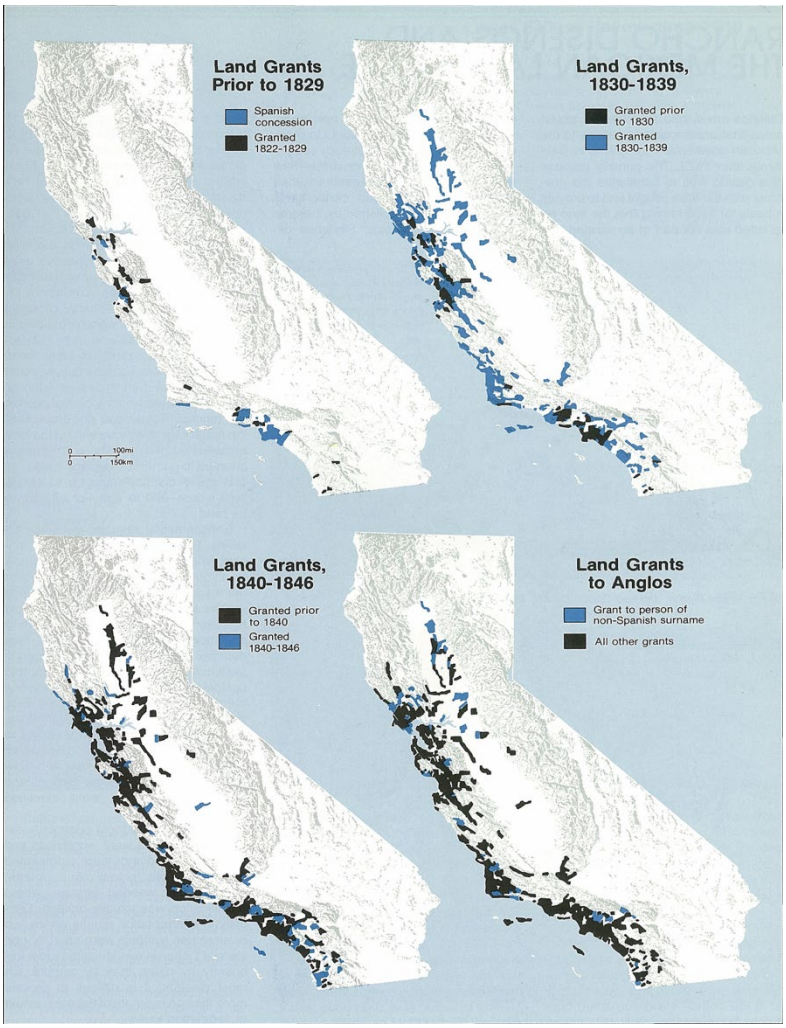
From 1824 through 1847, the Mexican government awarded 813 grants of land, which conveyed more than 13 million acres of land (more than 20,000 square miles) into private ownership. The grants included most of the former mission lands, and they granted new title to lands in the Central Valley from the Tehachapi Mountains to Mount Shasta. The landholdings ranged in size from 4,500 to 50,000 acres. (California State Lands Commission 1982) See Figure 3.

[17] The Indigenous population of the coastal region fell from approximately 60,000 in 1769 to 35,000 in 1821. (Weber 1992) "Mission Indians labored long and hard, often lived under miserable conditions, had poor diets, suffered from epidemics, experienced physical abuse and intimidation, and died in huge numbers. After establishment of the missions, diseases such as syphilis, tuberculosis, dysentery, diphtheria, and measles spread rapidly throughout native populations lacking any immunity." These factors were compounded by "crowded living conditions in drafty adobe dormitories with poor sanitation. Deficient diets consisting of a starchy cereal soup and a little meat predisposed Indians to infectious disease and malnutrition. Medical treatment was rare." Birth rates within the Native population were low, and infant mortality was high. "Between 1799 and 1833, the padres recorded 62,000 deaths and only 29,000 births." (Anderson 2005)

[18] The Native Californians released from the missions found that many of their ancestral lands had been occupied, fragmented, and degraded. "Tribal lands had become transformed by the introduction of vast herds of horses, cattle, sheep, goats and hogs that destroyed the native flora, the primary source of native diet. Wild game animals were likewise driven off by these new animals. What developed from this new condition was the emergence of guerrilla Indian bands made-up of former fugitive mission Indians and interior tribesmen from villages devastated by official and unofficial Mexican paramilitary attacks and slave hunting raids. Eventually a significant number of these interior groups joined together to form new conglomerate tribes." (California Native American Heritage Commission 2026)

FIGURE 3

Spanish land concessions and Mexican land grants



SOURCE: Hornbeck (2017).

These grants included many of Alta California's most fertile lands and valuable water resources—its coastal streams and watersheds, the rivers that fed into Tulare Lake and the other bottomlands of the Tulare basin, and the waters of the Sacramento and San Joaquin Rivers and their tributaries. Thousands of Native Californians—who had hunted, fished, and raised crops on these lands for millennia—would be displaced to the more arid and less arable uplands. (Caragozian 2022; California Native American Heritage Commission 2026)[19]

[19] Non-Indian exploration and occupancy of the North Coast and Central Valley during the period of Mexican rule also brought new diseases to these regions, with deleterious effects on the Native Peoples comparable to the public health disaster that had swept across the mission lands in the preceding decades. "In 1833, an unidentified disease, possibly introduced by fur trappers,

During the eight decades of Spanish and Mexican governance, the Indigenous population was cut in half—from approximately 310,000 to 150,000—while the non-Indian population had grown to about 6,500. (Cook 1976) Almost all of Native Californian Tribes had been affected by the immigrant population and development—the former "Mission Indians" most severely. Yet, in many regions, the Tribal Peoples had been able to adapt and to endure. This was especially true in the mountains and high deserts—from the northern Coast Range and Siskiyou Mountains to the Sierra Nevada, its eastern plateau, and on through the Owens River Valley and the Southern California deserts. The Tribes in these regions remained largely intact and unscathed. They had maintained their villages and traditional practices, and they continued to fish, hunt game, harvest plants and seeds, and in some cases irrigate crops on their ancestral lands much as they had done before the arrival of the Spanish and the Mexicans. (Anderson 2005)

Of course, this would all change—rapidly and brutally—with the advent of the American era. The Native Peoples of the new State of California would become "trespassers on their own lands."

California: Dispossession By Economic "Progress," Law, and Violence

The Treaty of Guadalupe Hildago, signed on February 2, 1848, formally concluded the Mexican American War and transferred sovereignty over 529,000 square miles of land in the American West, including Alta California, to the United States. (National Archives 2025) Not quite one year later, James Marshall spotted flecks of gold in the tailrace of the sawmill he was building in partnership with John Sutter on the South Fork of the American River. The sawmill was located on the ancestral lands of the Nisenan Indians, which they called "Cullumah," beautiful valley. (California State Parks 2026b) When word of Marhsall's discovery made its way to San Francisco and then to the eastern United States, the world rushed into California. (Holliday 1981)

Approximately 300,000 immigrants arrived from 1850 through 1855 to seek their fortunes in the gold fields. From the North Fork of the Feather River to the Upper San Joaquin River basin, the miners displaced the Yana, Konkow, Nisenan, Sierra Miwok, and Yokuts Peoples, who had inhabited the lower elevations of the Sierra Nevada and its foothills. In Northwest California, prospectors invaded the lands of the Tolowa, Yurok, Hupa, and Karuk Tribes. (Yurok Tribe 2026b) These incursions into areas that had been relatively unaffected by the Spanish and Mexican land grants displaced the local Indigenous inhabitants from their villages and most valued ancestral lands. (Akins and Bauer 2021) See Figure 4.

---

reached epidemic proportions in the San Joaquin and Sacramento valleys." The contagion "annihilated whole Indian villages" and caused more than 20,000 deaths. "In 1837, a smallpox epidemic spread through the valleys of Sonoma, Petaluma, Santa Rosa, Russian River, Clear Lake, Suisun, and Sacramento, killing thousands of Indians." Throughout the Mexican era, "measles pneumonia diphtheria and venereal disease . . . continued to spread from Californios to native populations. These epidemics, together with armed conflict and destruction of the food supply, caused the population of indigenous people to plummet from 245,000 to 150,000." (Anderson 2005)

FIGURE 4

Mining claims in California during the Gold Rush

SOURCE: Smithsonian Institution. National Museum of the American Indian.

The miners used mercury to process the gold, contaminating the waters of the rivers of the Sierra Nevada, Central Valley, and North Coast—as well as in Bay Area watersheds where the mercury itself was extracted—killing salmon, steelhead, and other fish.[20] With the advent of hydraulic mining in 1853, the gold miners would wash millions of tons of rock, gravel, and debris downstream, which clogged the rivers, exacerbated flooding of farmland and cities, destroyed riparian ecosystems, and impeded fish passage. (Mount 1995; Isenberg 2005)

[20] Much of this mercury contamination remains in California's waterways and food webs to this day. (California State Water Resources Control Board 2017, 2025d)

Still worse, the gold miners burned villages, forcibly removed the Native inhabitants from their ancestral lands; destroyed their food stocks; conscripted men, women, and children to work in the mines; and engaged in murder and other acts of violence. (Wood 2008; Madey 2016) When the Indians tried to defend themselves, take back their lands, or retaliate, they were suppressed by the United States Army and militias organized and funded under California law. (Johnston-Dobbs 2002; Madley 2016)

The effects of the Gold Rush on California's remaining native population were not limited to the gold fields. The coastal redwoods to the north and south of San Francisco were clearcut to provide timber for construction of homes, commercial building, and docks in the burgeoning city. (Buckley 2024) The destruction of the coastal forests also destroyed the remaining ancestral lands of the Ohlone and Coastal Miwok, and debris from the timber harvesting damaged coho and steelhead habitat. As California's population swelled during the 1850s, so did the demand for meat, grains, fruits and vegetables, and hides. More lands in Southern California, the coastal valleys, the Delta, and the Central Valley were converted from grasslands, woodlands, and wetlands to agricultural production, which hastened the displacement of the remnant Native inhabitants. (Pisani 1984; Isenberg 2005)

As under Spanish and Mexican rule, the laws of both the United States and California proved to be inadequate to protect the land and water rights of the new state's original inhabitants. The Treaty of Guadalupe Hidalgo recognized Spanish and Mexican land grants, but it did not address the rights of Native Californians—either to their ancestral lands or to lands that they occupied in 1848. United States law did recognize the rights of American Indians to continued occupancy of their lands, however, unless that "aboriginal title" was extinguished or limited by the federal government. (Newton and Washburn eds. 2024, chapter 18) In California, as in many places throughout the United States, however, this principle was honored more in the breach than in practice. (Williams 1990; Robertson 2005)

California statehood followed in 1850. One of the first laws enacted by the new state legislature was an "Act for the Government and Protection of Indians." The statute required the "proprietors of lands on which Indians are residing [to] permit such Indians to peaceably reside on such lands, unmolested in the pursuit of their usual avocations for the maintenance of themselves and their families." (California Legislature 1850)[21] The state failed to enforce this occupancy right, however. (Wood 2008) In an 1883 report to the United States Commissioner of Indian Affairs, Helen Hunt Jackson and Abbot Kinney stated that the California Land Act "had never been . . . complied with in a single instance" and held "no value in the California courts." (Jackson 1892)[22]

In 1851, Congress passed the California Land Act. The statute created a California State Lands Commission to determine the validity of Spanish and Mexican land grants and to resolve disputes over title. The law required the Commission to "ascertain" those pueblos lands, ranchos, and former mission

[21] The Act allowed "the white person or proprietor in possession of such lands" to ask a Justice of the Peace to "set off a sufficient amount of land for the necessary wants of such Indians, including the site of their village or residence, if they so prefer it." It then stipulated that, "in no case shall such selection be made to the prejudice of such Indians, nor shall they be forced to abandon their homes or villages where they have resided for a number of years." (California Legislature 1850)

[22] The balance of the 1850 legislation focused on the governance and control of Native Californians. One notorious provision authorized Justices of the Peace to allow white persons and land proprietors to make arrangements with Indian parents for the indentured servitude of their minor children. Another authorized Justices of the Peace to "hire out" vagrant Indian adults "to the best bidder" for a period of up to four months. (Johnston-Dodds 2002)

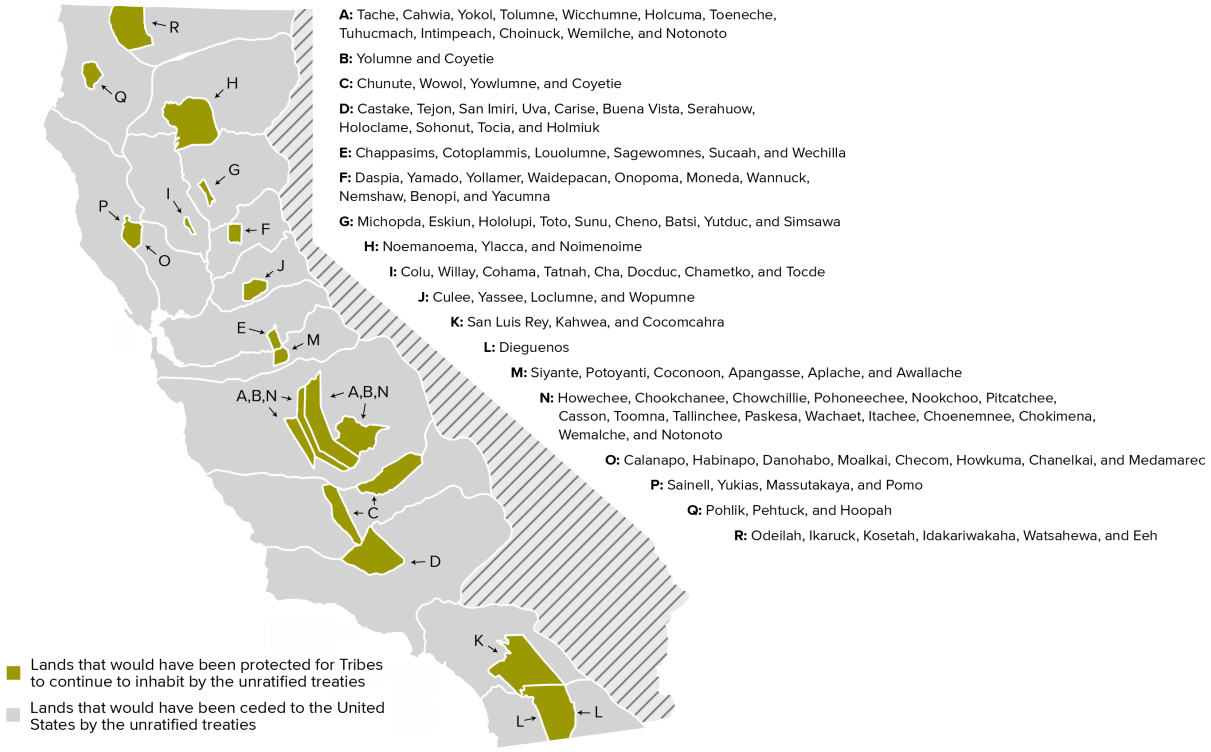
lands on which Native Californians were residing, as well as other lands occupied by Indigenous People "who are engaged in agriculture or labor of any kind." (US Congress 1851) The Commission ignored this directive in all but two locations.[23] The Commission ultimately confirmed 604 of the 813 of the land claims it received. The unconfirmed lands were transferred into the public domain. (Wood 2008)

The following year, the United States Senate rejected 18 treaties that federal officials had negotiated with more than 100 Tribal leaders throughout California. The treaties covered approximately 75 million acres (more than 117,000 square miles) of Tribal ancestral lands. Under the terms of the treaties, the Tribes would have retained about 7.5 million acres—about seven percent of the lands within the state—which the United States would have managed in trust for the Tribes as Indian reservations. See Figure 5. For the remaining 67.5 million acres, the treaties would have formally extinguished the Native Peoples' aboriginal title. Following the vote, the Senate classified the treaties as secret and had them locked in a vault. They were not made public until 1905. (Wood 2008; Madley 2016)

[23] The exceptions were on two areas of former mission lands in Southern California: a portion of the ancestral lands of the Pauma Tribe along the San Luis Rey River, and a fragment of the ancestral lands of the Chumash People at Santa Inez. Both areas were later recognized as Indian reservations. (Wood 2008)

FIGURE 5

Tribal reservation lands included in the 18 unratified treaties



SOURCE: An adaptation of the original treaties map in Heizer (1972), reproduced using data from the Digital Atlas of California Native Americans.

NOTE: The 18 rejected treaties included some Tribes that were subsequently assigned to Indian reservations and now have quantified water rights. The vast majority of the Tribes that signed treaties with the United States, however, did not obtain reserved lands or accompanying water rights. The letters and arrows shown in the map indicate the ancestral lands from which the various Tribal Peoples would have been removed for relocation to the proposed reservations as shown on Heizer's map.

About one-third to one-half of California's Indigenous population of 150,000 lived on the lands covered by the treaties. (Wood 2008) After the treaties were negotiated, many Tribal members left their ancestral lands to move to the new reservation areas. When the Senate rejected the treaties, however, these Native Californians were effectively left landless. They had surrendered their original homes and villages, and they had lost the replacement lands that the treaties had promised them. (Newton and Washburn eds. 2024)

Although the 18 treaties would have provided a land base for many of early California's surviving Indigenous Peoples, neither the treaty-making process nor the treaties themselves represented fair treatment or compensatory justice. According to the late Robert Heizer, one of the leading anthropological experts on Native California history, it is unlikely that the Tribal leaders who signed the treaties understood what they were signing. They spoke neither Spanish nor English, and the interpreters who accompanied the federal Indian agents did not speak or understand the myriad native dialects. In addition, most of the Tribal leaders, whom the treaties identify as "Chiefs," were probably village elders who did not, and could not, represent their larger Tribes. Moreover, "since land was owned in common,

even chiefs had no authority to cede tribelet or village lands," let alone relinquish title to the expanse of ancestral lands covered by the treaties. As Professor Heizer observed, "Rarely, if ever, in United States history have so few persons without authority been assumed to have had so much, and given so much for so little in return, to the federal government." (Heizer 1972)

Congress subsequently declared the unratified treaty lands to be part of the public domain and ordered them to be surveyed and opened for general settlement and use. (US Congress 1853a). This made it lawful for homesteaders, cattlemen, farmers, miners, timber companies, railroad companies, and land speculators to claim title to the lands. (Gates 1968) Congress purported to protect those Native Californians who did remain on these lands. The statute declared that it "shall not be construed to authorize any settlement to be made on any tract of land in the occupation or possession of any Indian tribe, or to grant any pre-emption right to the same." (US Congress 1853a) The claimants to these lands, and the federal land officers who granted the patents, ignored this directive, however. (Wood 2008)

Although title to, and use of, these lands remained subject to the Tribes' prior rights of occupancy, the concept of "aboriginal title" would be nothing more than a gossamer shield against the onslaught that had begun with the California goldrush. Indeed, in the ensuing decades, California's First Peoples would lose almost all their remaining ancestral lands. This was most pronounced in the Central Valley where more than one-half of the surviving Indigenous population lived.

In the early 1850s, the predominate "private" use of these lands was for grazing domesticated livestock, which left much of the valley wetlands and grasslands available to the valley Tribes' longstanding uses. "Cattle shared the native grasses with herds of antelope, elk, and wild horses," and "the fields of tules and . . . strings of willows which lined the streams that wound out of the Sierra" remained intact. (Pisani 1984) Tribal villages remained throughout the Central Valley and foothills—many in areas remote from the ranchers and other settlers—and their members were able (mostly) to live as they had for millennia. (Anderson 2006; Frank and Goldberg 2010)[24] This changed rapidly after California began to implement the Swamp Lands Act, which Congress had enacted in 1850.

The legislation conveyed title to all public lands that are "wet and unfit for cultivation" to California (and other states). (US Congress 1850) After a multi-year process of surveying low-lying areas to determine whether they met this criterion, California began disposing of the vast wetlands of the Central Valley. More than two million acres were granted to private individuals, farming corporations, the railroads, land agents, and land speculators. (Gates 1968) The beneficiaries of these land transfers included some of the largest and most powerful farming and ranching interests in 19th century California. (Garone 2011)

Over time, the Sacramento River was straightened and confined between levees constructed to protect new farms. Much of the valley floor was converted to irrigated rice fields. The islands of the Delta were walled-in by levees, and most of the shallows and estuarine wetlands were lost. The bottomlands of the San Joaquin basin were drained and converted to farmland, as were the wetlands and riparian corridors of

[24] In 1852, for example, the population of the Tulare Basin (including its foothills) was 98 percent Native California—primarily Southern Yokut. (Frank and Goldberg 2010)

the Tulare basin.[25] Upstream diversions from the Kings, Kaweah, Tule, and White Rivers caused Tulare Lake to recede.[26] In a mere two to three decades, the Yokuts People, who had survived the intrusions of the ranchos would see the grasslands, waters, and wildlife that had sustained them and their ancestors for millennia disappear.

Reservations and Rancherias

The California Gold Rush, and the broader economic boon that accompanied it, threatened the continued existence of the Tribes and Native Peoples. Indeed, there was a common belief among state and federal policymakers that coexistence was impossible. In January 1851, for example, Governor Peter Burnett declared in his State of the State Address:

"That a war of extermination will continue to be waged between the races, until the Indian race becomes extinct, must be expected. While we cannot anticipate this result but with painful regret, the inevitable destiny of the race is beyond the power or wisdom of man to avert." (Johnston-Dobbs 2002)[27]

The following year, California Senator John Weller echoed this sentiment in a speech on the floor of the United States Senate:

"It has been the policy of the government to drive [the Indians] to the West; but the white man is now in the West. He stands upon the shores of the Pacific Ocean. He has commenced pushing the Indian back upon the Rocky Mountains. The Indian is placed in between the upper and nether millstones, and he must be crushed! . . . The reflection to every human heart is a melancholy one, but it is unavoidable. In the province of God, they must soon disappear before the onward march of our countrymen. Humanity may forbid, but the interest of the white man demands their extinction." (US Senate 1852)[28]

Over the ensuing decade, these predictions were put into policy. The state funded 24 militia expeditions against Tribes throughout California. The purposes of these forays were to suppress Indian hostilities, to protect the lives and property of California's citizens, and to clear Tribal lands for miners, cattlemen, farmers, and other settlers. During roughly this same period, US Army troops fought more than 120

---

[25] In 1870, 11 million acres—about 10 percent of California's lands—were under cultivation. More Californians (native and non-native) were employed in agriculture (48,000) than in mining (36,000). From 1852-1860, the number of cattle rose from about 450,000 to more than 1.1 million. The number of cattle peaked at more than one million in 1862. The number of sheep peaked in 1875 at 5.5 million head. (Anderson 2005)

[26] By the early 1870s, most of the land in the Tulare Basin was privately owned. Tulare Lake—once the largest by surface area in California and a rich source of food, fiber, habitation, and commerce for the Southern Valley Yokuts—disappeared completely for the first time in 1898. (Garone 2011)

[27] In 2019, California Governor Gavin Newsom issued an executive order that apologized "on behalf of the citizens of the State of California to all California Native Americans for the many instances of violence, maltreatment and neglect California inflicted on [the] tribes." As a summary example of the "violence, exploitation, dispossession and the attempted destruction of tribal communities," Governor Newsom pointed to this quotation from Governor Burnett's State of the State Address. (Newsom 2019) In his accompanying remarks to a gathering of Tribal leaders, he said: "It's called a genocide. That's what it was. A genocide. [There's] no other way to describe it and that's the way it needs to be described in the history books." (Luna 2019)

[28] Perhaps ironically, Senator Weller made these comments while arguing in favor of his own amendment to an appropriations bill that would have provided $100,000 in food and other supplies as transitional assistance of California's remaining Tribes. (US Senate 1852) John Weller served as Governor of California from January 1858 through January 1860. During his tenure, he authorized several of the "most lethal Indian-hunting ranger militia expeditions," including the Klamath, Humboldt, Pit River, and Mendocino expeditions. (Madley 2016)

battles with Tribes and Tribal groups in California. Vigilante massacres, individual murders, and destructive raids on Tribal villages, farmlands, livestock, and food supplies were also regular occurrences. During the first quarter-century of the American Era, the Native population of California was reduced by 80 percent, from 150,000 to 30,000. (Cook 1976; Madley 2016)[29]

In an effort to protect at least some of the surviving Tribes from these onslaughts, the United States revived its efforts to establish Indian reservations in California. Congress enacted legislation in 1853 that authorized the President to set aside small portions of the public domain to serve as "military reservations" or "farms," as they were known at the time. The purpose of the reservations was to establish areas where Tribes and individual Indians who had been displaced—or were in jeopardy of being displaced—from their ancestral lands could live and work under the supervision and protection of federal authorities. (US Congress 1853b) The nine reservations created under the statue therefore were established at or near Army forts in regions that were sparsely populated by non-Indians. Most included members of unrelated Tribes, some from different language groups. (Wood 2008)[30]

Six of these early reservations failed within a few years—primarily because the pressures from non-Indian settlers, resource users, and speculators were too strong for the inhabitants and their federal overseers to resist.[31] The three reservations that survived, however, began the process of setting aside *some* lands for the long-term benefit of California's remaining native population.

The Yurok Reservation, originally known as the Klamath River Reservation, was established in 1855 along 20 miles of the lower Klamath River. Gold miners, logging outfits, and commercial fishermen were rapidly displacing the Yurok from their ancestral lands in the Siskiyou Mountains, Klamath River Valley, and its coastal estuary, and the reservation served place of refuge for many Yurok families. Some Yurok were sent to the short-lived Smith River Reservation. Others were moved to the Hoopa Valley Reservation in the lower Trinity River watershed after it was established by executive order in 1876. (Wood 2008; Madley 2016)

The Round Valley Reservation, originally named the Nome Cult Farm, was carved from the ancestral lands of the Yuki People in 1856. Confinement of the Yuki—as well as members of the neighboring Wailkacki and Pomo Tribes—opened tens of thousands of acres for timber cutting, ranching, and farming

[29] Benjamin Madley's *American Genocide* (2016) covers the first quarter-century of violence perpetrated against California's Native population in detail. In addition to a 360-page narrative account, the book contains a series of appendices that list the *documented* Native Californian deaths from incidents of government-sponsored, vigilante, and individual violence. The lists run for 145 pages. The author concludes that the new immigrants to California, with the support of the state and federal governments, "nearly exterminated California's Indians." (Madley 2016)

[30] Although the statute stated that the reservations would be created "from the public domain," several were established on land leased from either the state or by private landowners. This insecurity of title created an attendant insecurity of tenure for the Tribes placed on these reservations. It ultimately contributed to the failure of most of those reservations. (Frank and Goldberg 2010)

[31] The six failed reservations were: the Smith River Reservation in Del Norte County; Nome Lackee in Colusa County; Mendocino Farm along the Pacific Coast; the Fresno River Reservation in the southeast San Joaquin Valley; the Kings River Farm in the Tulare Basin; and the Tejon Reservation in the Tehachapi Mountains. Most of the decommissioned lands were transferred into private (non-Indian) ownership. (Wood 2008)

throughout the coastal mountains and valleys north of San Francisco. (Madley 2016)[32] The size and contours of the "farm" were later reduced, and the Tribal lands were fragmented by non-Indian settlement. President Grant formally created the Round Valley Reservation from these remaining lands in 1870. (Wood 2008; North Coast Resource Partnership 2025)[33]

The Tule River Reservation was created in 1858 on the site of a Koyeti village along the lower reach of the Tule River. Although the reservation was established principally for habitation by the Southern Valley and Foothill Yokuts who were rapidly losing their ancestral lands in the Tulare Basin, it also housed Owens Valley Paiute who were disposed of their lands on the east side of the Sierra Nevada. In 1873, following pressure from non-Indian settlers to free up more land on the valley floor, the federal government created a new Tule River Reservation located in the higher watersheds of the Middle and South Forks of the Tule River. (Wood 2008; Frank and Goldburg 2010)

The Civil War interrupted the reservation process, both in California and throughout the American West. As the war neared its conclusion, however, the United States renewed the process, establishing a new reservation in the Lower Klamath River Basin, five reservations along the Colorado River, and a broad array of smaller reservations throughout the state.

In 1864, Austin Wiley, the Superintendent for Indian Affairs in California signed a "treaty of peace and friendship" with the Hupa, South Fork, Redwood, and Grouse Creek Indians. The treaty called for the creation of a reservation of "a sufficient area of the mountains on each side of the Trinity River as shall be necessary for hunting grounds, gathering berries, seeds, etc." The purpose of the treaty was not simply to provide a "home" for the Tribes. It also was designed to clear the excluded Tribal lands for mining, timber harvesting, settlement, and other uses. The treaty expressly confined the Tribal members to the lands within the boundaries of the reservation. (Tribal Treaties Data Base n.d.)[34]

President Ulysses S. Grant formally established the Hoopa Valley Indian Reservation by executive order in 1876. The original reservation comprised twelve square miles on both sides of the Trinity River just above its confluence with the Klamath River. As noted above, President Benjamin Harrison merged the Hoopa Valley and Yurok Reservations in 1891. This uneasy arrangement lasted for almost a century. The Hoopa-Yurok Settlement Act, passed by Congress in 1988, repartitioned the Hoopa Valley Reservation into the Yurok Reservation and the Hoopa Valley Reservation. (Wood 2008)

The Colorado River Indian Reservation was the first reservation created after the conclusion of the Civil War. Although most of the immigrants who were attracted by the Gold Rush arrived by sea or via the California Trail across the Sierra Nevada, many others entered the state by crossing the Lower Colorado

---

[32] The original Round Valley Reservation was the site of several infamous massacres, which were initiated by Serranus Clinton Hastings, the state's first Chief Justice. (Fuller 2021) These vigilante expeditions, which took place from November 1858 through April 1859, killed between 550 and 910 Yuki men, women, and children. (Madley 2016)

[33] The federal government subsequently removed the surviving members of the Concow Maidu, Nomlacki, and Pit River Tribes from their ancestral lands in the Sacramento Valley and relocated them to Round Valley, clearing these lands for non-Indian settlement and use as well. (Round Valley Indian Tribes n.d.) The 1863 removal of the Concow Maidu is known as the Concow Trail of Tears.

[34] The treaty stipulated that "[n]o Indians belonging to . . . the Tribes herein enumerated shall go beyond the limits of said reservation without a written pass from the agent in charge. All so offending shall not be deemed friendly, and shall be hostile Indians." (Tribal Treaties Data Base n.d.)

River. Some of these immigrants settled in the Colorado River Valley where they prospected for gold and other minerals, scratched out farms and ranches, and created various businesses—including ferry services and commercial shipping on the river—to serve the rapidly growing non-Indian population. To protect these interests, the United States built two forts along the river: Camp Independence (later named Fort Yuma) in 1850 and Fort Mohave in 1859. (Mueller and Marsh 2002) Five Indian Reservations followed.

Congress established the Colorado River Indian Reservation in 1865, principally for members of the Aha Macav (Mohave) Tribe. The other four reservations were created by executive orders: the Fort Yuma Indian Reservation in 1877 for Kwatsáan (Quechan) People; the Fort Mojave Indian Reservation in 1890 for the Pipa Aha Macav; the Chemehuevi Reservation in 1907 for members of the eponymous Tribe who previously were housed at the Colorado River Indian Reservation; and the Cocopah Reservation in 1917.[35] (US Department of the Interior et al. 2018; Ten Tribes Partnership 2025)

These Tribes had inhabited the Lower Colorado River Valley for thousands of years, and the waters of the river were central to their identities and essential to their lives. Although each of the reservations maintained some access to the river, the Tribes were forced to share its waters and rich floodplains with the new inhabitants, and they lost hundreds of thousands of acres to those who would benefit from federally constructed dams and canals that would divert water to previously nonarable uplands. (Hundley 2001; US Department of the Interior et al. 2018)

In the late-19th and early-20th centuries, the United States created 93 other reservations within California to serve as Tribal homelands. Many of these small reservations and rancherias are remnants of the Tribal villages and fragments of other ancestral lands that somehow survived the events described in this narrative.[36] Others are lands that the United States reserved from the public domain to house Native Californians who had lost or were removed from their ancestral lands. These reservations and rancherias are located throughout the state. (Wood 2008; Madley 2016) See Figure 1.

About one-third of the smaller reservations are in Southern California on former mission lands, including lands that the Spanish and Mexican governments identified as “Indian pueblos.” The members of these Tribes lived precarious lives, many subsisting on tiny fragments of their ancestral lands. Writing in 1883, in a report to the United States Commissioner of Indian Affairs, Helen Hunt Jackson and Abbot Kinney described the situation:

From tract after tract of such lands they have been driven out, year by year, by the white settlers of the country, until they can retreat no farther; some of their villages being literally in the last tillable spot on the desert’s edge or in the mountain fastnesses. Yet there are in Southern California today many fertile

[35] Although the Cocopah Reservation is located entirely in Southern Arizona, it is home to members of the Yuma, Cocopah, and Maricopa Tribes whose ancestral lands were on both sides of the Colorado River as well as in Mexico.

[36] The name “rancheria” derives from the mission period. The Spanish constructed the missions near Tribal villages using the conscripted labor of the local Indigenous populations. They called the villages “rancherias.” Over time, the Spanish used the term “to refer not only to Indian villages on or near the missions but also to Indian villages generally, and particularly to those of smaller size.” (Wood 2008) When Mexico secularized the missions and transferred title to the former mission lands, “rancheria” was used to denote the Indian villages that were present on the newly formed ranchos. “This usage would later be carried over into English and would be used to refer to Indian villages throughout California.” (Wood 2008) Some of these rancherias endured the general turmoil and dispossession of the 19th and 20th centuries are now recognized under federal law as part of “Indian Country.”

valleys, which only 30 years ago were like garden spots with these same Indians wheat-fields, orchards, and vineyards. Now, there is left in these valleys no trace of the Indians' occupation, except the ruins of their adobe houses; in some instances these houses, still standing, are occupied by the robber whites who drove them out." (Jackson 1892)

In a last-ditch effort to protect the remaining homes, villages, and lands of these surviving Tribes, Congress passed an "Act for the Relief of the Mission Indians" in 1891. The statute created a three-person commission and charged it with selecting "a reservation for each band or village of the Mission Indians residing within said State, which reservation shall include, as far as practicable, the lands and villages which have been in the actual occupation and possession of said Indians, and which shall be sufficient in extent to meet their just requirements." The commission's selections would become effective when approved by the Secretary of the Interior and the President. (US Congress 1891)[37]

The United States established 30 small reservations for the Mission Indians.[38] See Figure 5. These reservations included villages in the upper watersheds of coastal rivers, settlements in the canyons of the Santa Ana and Laguna Mountains, and lands in the Coachella Valley served by artesian springs and small streams running off the San Jacinto and Santa Rosa Mountains. Depending on location, they were comprised of members of various Bands and Tribes of Cahuilla, Chumash, Kumeyaay, Luiseño, and Tongva People who once inhabited almost all of Southern California. (Wood 2008) [39]

The remaining 60 small reservations and rancherias are located throughout California. Most were created in the early 20th century after the Senate's 1852 rejection of the eighteen treaties came to public attention. For a brief period, there was political support to provide some measure of protection for the shards of ancestral land still held by California's Tribes. As shown in Figure 1, these reservations were established where Indigenous communities had persevered, mostly in inhospitable landscapes—the high deserts along the eastern Sierra Nevada, the dry foothills of the Central Valley, remote valleys of the northern Coast Range and Siskiyou Mountains, and mining-ravaged areas of the Sierra Nevada.

These formal reservations of land did not rectify the history of dispossession and violence wreaked on California's Native inhabitants. Nor did they come close to compensating for the two most egregious failures of federal and state policy toward California's First Peoples:

---

[37] The Act directed the Secretary of the Interior to issue patents (i.e., fee simple title) for the reserved lands to each Tribe. The United States would hold the lands in trust for 25 years, after which full title would vest in the Tribe. Congress also authorized the Secretary to grant allotments (i.e., individual fee title) to Indians "so advanced in civilization as to be capable of owning and managing land in severalty." These allotments also were to be held in trust for 25 years. (US Congress 1891) In 1927, President Coolidge extended the trust period for ten years for 14 of the Mission Indian reservations. (The White House 1927)

The statute also allowed the Secretary to grant easements for water conveyance through the reservation lands during the trust period. Congress required the beneficiaries of the easements to supply the Tribe with sufficient water to serve its own domestic and irrigation uses, however. (US Congress 1891) This statutory requirement would play an important role in the negotiations that led to the 1988 San Luis Rey River Indian Water Rights Settlement Act. See Part Four.

[38] As described in more detail in Part Four, many of these reservations were created by executive orders issued before enactment of the Mission Relief Act. Each of these was reconfirmed and reestablished under the terms of the 1891 statute.

[39] All but three of the Mission Indian reservations are in San Diego and Riverside Counties. Indeed, except for the Santa Inez Reservation in Santa Barbara County—which was created out of the ancestral lands of the Chumash People—no former Tribal villages or other lands were preserved along the coastal plains that extend from Orange County to the Bay Area. Before settlement and conquest by the Spanish, this region was home to about 20 percent of California's native population. (Cook 1976)

- Disregard of the Spanish, Mexican, and United States laws requiring landowners to honor aboriginal title—the rights of California's Indians established by prior occupancy and use—which meant that almost none of the 13 million acres of former mission and rancho lands were preserved for the Tribes.
- The Senate's 1852 refusal to ratify the eighteen treaties negotiated with Tribes throughout California, which resulted in the loss of 7.5 million acres that would have been reserved and protected as Tribal homelands.

In contrast, the 107 reservations that *were* created embrace only about 643,000 acres, less than one percent of the total landmass of California. (Native Land Information System 2019)

Yet, the establishment of defined areas of reserved lands for the surviving Tribes—from the 300,000-acre Colorado River Reservation to the 2.85-acre Tuolumne Chicken Ranch Rancheria of Me-Wuk Indians—did have several profound effects on California Indian policy. The reservations secured footholds in which the Tribes could reconstitute themselves and maintain traditional Tribal practices. They delineated areas over which the Tribes would exercise sovereign governmental authority. And, as described in Part 2, the reservations of land also carried with them reservations of water rights that would allow at least some of the Tribal Nations to obtain water to sustain their members and to create new Tribal economies.

Allotment, Assimilation, Termination, and Relocation

These benefits of the reservation system would not accrue without setbacks, however, as federal Indian policy in the late 19th and early 20th centuries vacillated between fostering Tribal integrity and integrating individual Native Americans into the broader society.

Led by Christian reformers who were appalled by the treatment and plight of the nation's Indigenous population, federal policy gradually shifted from confinement and isolation to education and assimilation. These reformers believed that the best hope for American Indians was to teach them to read and write in English, to encourage them to adopt an agrarian way of life, and to provide individual Indians with enough land to allow them to farm and graze livestock. Gradually, the reformers anticipated, these family-owned farms would replace the Tribes and the reservations as the focal point of Indian life. The Indians would be economically and socially assimilated, become citizens, and be governed by state and local laws. (Prucha 1984)

The first, and most important, law to implement these new policies was the General Allotment Act of 1887—often called the "Dawes Act" after its principal author, Senator Henry Dawes of Massachusetts, who was a prominent reform advocate. (Lamar 1998) The statute authorized the Commissioner of Indian Affairs to convey title to parcels of land within reservations to individual Indians and their family members.[40] These "allotments" would be held in trust by the United States for a minimum of 25 years, during which the landholdings could not be taxed, conveyed, or encumbered. The statute also provided, however, that the federal government could acquire "surplus" land—parcels not needed by individual

[40] The Dawes Act also authorized conveyances of public domain land to "any Indian not residing upon a reservation, or for whose Tribe no reservation has been provided." (US Congress 1887) The Act originally authorized allotments of 160 acres to each head of household and 40 acres to each minor within the family. Married women were granted no separate rights to allotted land. Congress amended the statute in 1891 to provide allotments of 80 acres of agricultural land or 160 acres of grazing land to each individual Indian (including women). (Newton and Washburn eds. 2024)

Indians within a reservation—with the proceeds of the sales going to a trust fund for the benefit of the Tribes that inhabit the reservation. The government could then convey title to these 160-acre parcels to non-Indians. In addition, the Act subjected individual Indian allottees to civil and criminal jurisdiction of the state or territory in which they resided. (US Congress 1887; Newton and Washburn eds. 2024)[41]

Over time, the General Allotment Act had catastrophic effects on Tribal Nations, their land bases, and their sovereignty. Between 1887 and 1934 when Congress repealed the statute, Tribal and individual landholdings fell nationwide from 138 million acres to 48 million acres. (Newton and Washburn eds. 2024)[42] Indian Reservations across the United States "became checkerboarded as the sale of surplus lands to whites isolated individual Indian allotments." (Newton and Washburn eds. 2024) Tribal cohesion suffered, and Tribal sovereignty was eroded by the applicability of state laws to allotted lands (both Indian and non-Indian) within the boundaries of the reservation.

In California, nineteen reservations and rancherias were affected by the allotment program, collectively losing 58,597 acres to 2,887 individual allotments. Of these, 15,341 acres were conveyed into non-Indian ownership. (Indian Land Tenure Foundation n.d.)[43]

Congress abolished the allotment program in the Indian Reorganization Act of 1934. This statute—which heralded the "Indian New Deal"—changed the focus of federal Indian policy. Reconstitution of Indian reservations, promotion of Tribal sovereignty, and Tribal governance of reservations land would become its central features. (Prucha 1984; Newton and Washburn eds. 2024)[44] This policy shift was controversial from the outset, and it was significantly modified in California and several other states less than two decades after its inception.[45]

In 1953, Congress passed a resolution calling for all Tribes in California, New York, and Florida, as well as those living on specified reservations in other states, to be "freed from Federal supervision and control and from all disabilities and limitations specifically applicable to Indians." The purpose of this policy sea

---

[41] Consistent with its purpose of "civilizing" the remaining indigenous population, the General Allotment Act also granted citizenship to every Indian born within the territorial limits of the United States to whom allotments shall have been made," as well as to any Native American "who has voluntarily taken up . . . residence separate and apart from any Tribe of Indians therein, and has adopted the habits of civilized life." (US Congress 1887)

[42] These losses resulted from a combination of conveyances of "surplus" reservation lands to non-Indians, sales by individual Indian allottees following expiration of the 25-year trust period, fragmentation of ownership as allotments passed by will or intestate succession, and state foreclosures for non-payment of state property taxes on Indian allotments no longer held in trust. (Indian Land Tenure Foundation n.d.)

[43] These data include allotments and transfers made under both the General Allotment Act and special statutes that authorized the division and transfer of land within specific reservations and rancherias. (Indian Land Tenure Foundation n.d.)

[44] The Act prohibited future allotments of reservation land, it indefinitely extended the federal trust period applicable to existing allotments, and it authorized the Secretary of the Interior to restore Tribal ownership of unallotted surplus lands. In addition, the statute granted the Tribes authority to adopt their own constitutions and laws, to regulate the sale and encumbrance of Tribal lands and other assets, to form Tribal corporations, and to negotiate with the federal, state, and local governments. (US Congress 1934; Newton and Washburn eds. 2024)

[45] Although the Indian New Deal was short-lived, the Indian Reorganization Act did lay the foundation for contemporary policies that recognize the Tribes as independent sovereign nations that conduct "government-to-government" relations with their federal and state counterparts. (University of Washington 2023)

change was explicitly assimilationist: "to end their status as wards of the United States, and to grant them all of the rights and prerogatives pertaining to American citizenship." (US Congress 1953)

Over the next several years, Congress voted to terminate federal recognition of 108 Tribes. These actions removed more than 1.36 million acres from federal trust status (about 3 percent of reservation and other trust lands nationwide), and they made Indian-owned allotments subject to state property taxation. Approximately 13,000 individual Native Americans were directly affected. (Prucha 1984) The federal government relocated many of the displaced Indians to urban areas where they faced underemployment, lack of health care, and poverty. (Fixico 1990; Ulrich 2010)

California's smaller Tribal Nations were especially hard hit by the termination policy. Congress terminated the Koi Nation of the Lower Lake Rancheria by special legislation in 1956 and sold its land to Lake County for use as an airport. The following year, it terminated the Coyote Valley Band of Pomo Indians and authorized the sale of its rancheria in Mendocino to the Army Corps of Engineers. (Newton and Washburn eds. 2024) Then, in 1958, Congress enacted the Rancheria Termination Act, which authorized the Secretary of the Interior to terminate federal recognition of 41 of California's Tribes and to distribute the lands and other assets of their reservations and rancherias to individual Tribal members. (US Congress 1958) Congress subsequently extended the terms of the Rancheria Termination Act to all other "rancherias and reservations lying wholly within California." It also authorized the sale of all lands and other assets of rancherias and reservations that were unoccupied as of January 1, 1964. (US Congress 1964)[46]

The termination policy was an abject failure. It ended the trust relationship between the United States and the affected Tribes. "Federal programs for both Tribes and individual members were discontinued. This meant that federal education, health, welfare, and housing assistance, as well as other social programs, were no longer available." In addition, the terminated Tribes, Tribal members, and landholdings became subject to state civil and criminal jurisdiction. Although the Tribes formally retained their status as sovereign nations, "most were not able to exercise their governmental powers after the loss of their land base." (Newton and Washburn eds. 2024)

The termination era was also a disaster for Tribal cohesion and integrity. Encouraged or compelled by economic circumstances to leave the previously reserved lands, thousands of individuals and families moved to urban areas in search of work and new lives. From 1950 to 1970, the Native American diaspora living in the Bay Area and Los Angeles County increased in from 3,123 to 41,616. (Cook 1976) Those who remained on the previously reserved lands faced "chronically high unemployment rates, low educational achievement, and sometimes emergency medical needs [that] forced many to make loans on or sell their lands." (California Indian Legal Services 2024)

---

[46] The statutes required the Bureau of Indian Affairs (BIA) to prepare a plan for division and distribution of the reserved lands, mineral rights, water rights, and other assets. If a majority of the members who were eligible to participate in the distribution approved the plan, the land would be subdivided and title to each parcel would pass into private ownership. The new property owners would be subject to state property and income taxes, and they would be free to sell, lease, or encumber their individual parcels. In addition, Congress directed the BIA to ensure that all roads within the former reservation or rancheria were brought up to the standards of similar roads in the state or county. It also required BIA to install or rehabilitate domestic water supply, sewage, and irrigation systems "as the Agency and Tribes agree, within a reasonable time, should be completed by the United States." (US Congress 1958, 1964) With few exceptions, these commitments were not honored. (Akins and Bauer 2021; California Indian Legal Services 2024)

As a 1997 report to Congress concluded: “The termination policy, as implemented in California, was a policy of expediency designed to terminate federal benefits and services to most of California’s smaller Tribes, as quickly and as cheaply as possible. It failed in its touted goal of assimilating these Tribal Peoples into the American social and economic mainstream—putting them on an equal footing with other Americans. Instead, it thrust most of them into greater poverty and divided their most essential asset—the Tribal homeland—by ending its protected federal status.” (Advisory Council on California Indian Policy 1997)

By the time President Nixon ended the termination era in 1970, 43 Tribal Nations in California had lost their federal recognition and more than 10,000 acres of Tribal land had been removed from federal trust status. (California Indian Legal Services 2024) Since then, 32 Tribes have regained federal recognition—many through litigation, some by congressional action. (US Department of the Interior 2025) Twenty-seven of these have also regained title to at least some of their pre-termination lands. (US Government Accounting Office 2006; California Indians Legal Services 2024)

Despite its misguided purposes and many failures in execution, the California Rancheria Termination Act did contain one potentially beneficial feature for the affected Tribes. According to section 4 of the statute:

“Nothing in this Act shall abrogate any water right that exists by virtue of the laws of the United States.” (US Congress 1958)

This brief disclaimer—a clear reference to the Tribal reserved water rights described in the following section—means that the water rights held by the Tribes before termination, survived termination. See Part Eight.

Denouement: The Hydraulic Society

The final blow to Tribal land and water rights began in the early 20th century with the advent of what the late historian Norris Hundley, Jr. called the “Hydraulic Society.” (Hundley 2001) During this era, which extended for about 75 years, California’s landscapes and waterways were transformed by large regional and inter-basin water development projects.

In 1905, the United States completed the Klamath Project on the Upper Klamath River to irrigate lands in Southern Oregon and Northeast California. The project flooded the ancestral lands of the Klamath, Modoc, and the Yahooskin People, including portions of the Klamath Indian Reservation. It turned native wetlands and remnant Tribal homelands into farms and ranches, and it altered the volume and flow of water in the Klamath River. As water use throughout the Klamath River basin expanded in the ensuing decades, the project would contribute to the decline of the Klamath River fishery and jeopardize the aboriginal fishing rights, livelihoods, and cultural practices of both the upper basin Tribes and of the Shastan, Karuk, and Yurok communities along the Lower Klamath River. (Doremus and Tarlock 2008) See Part 7.

In 1908, the federal government completed construction of the Laguna Diversion Dam, the first in a series of dams and diversion facilities that would transform the Lower Colorado River. Over the next half century, it and the other large dams—Hoover, Parker, Davis, Headgate Rock, and Palo Verde—would inundate portions of the ancestral lands of the Aha Makav, Chemehuevi, Kwatsáan, and Cocopah People

and starve the river of spring freshets and essential nutrients on which Tribal agriculture and the Lower Colorado River fishery had depended for millennia. (Hundley 2001, Chapter 5) See Part 3.

In 1913, the City of Los Angeles began receiving water imported from the Owens River 240 miles to the northeast. (Kahrl 1982) It obtained rights to this water by purchasing most of the lands in the Owens Valley—lands that once were part of the ancestral homelands of the Nüümü (Owens Valley Paiute) People. Over the next 60 years, the city's exports would expand to include most of the valley's surface water streams and much of the underlying groundwater. (Cotsirilos 2024) In 1940, Los Angeles extended its aqueduct north into the Mono Basin, the ancestral lands of the Kootzaduka'a People. The city's diversions from four of the five freshwater streams that flow into Mono Lake dried the streams and imperiled the lake. (Sahagún 2021) See Text Box 6.

That same year, Congress granted the City and County of San Francisco the right to dam Hetch Hetchy Valley in Yosemite National Park to create a reservoir that would enable the city to export the waters of the Tuolumne River to the Bay Area. Hetch Hetchy Reservoir flooded lands from which the Ahwahnechee, Tuolumne, Sierra Foothill Miwok, and Mono People would gather seeds, grasses and acorns during the summer and fall months. The city built its "Camp Mather" at the site of a former Miwok village. Its terminal reservoirs in the Bay Area are spread over Ohlone lands in the East Bay and on the San Francisco Peninsula. (Righter 2005; Simpson 2005) See Part One, Prelude.

In 1937, a year after the first Tuolumne River water arrived in the Bay Area, Congress authorized the construction of the Central Valley Project (CVP). Its capstone reservoir, Lake Shasta, impounded the waters of the Upper Sacramento River tributaries, the *Nomtipom Waywaket* (Sacramento), *Winnemem Waywaket* (McCloud), and Pit Rivers. (Hundley 2001, Chapter 5) Members of the Winnemem Wintu Tribe who were living on ancestral lands that would be inundated by the reservoir were removed without compensation. When it filled in 1948, the reservoir would flood more than 4,480 acres of existing homes, former Tribal villages, fishing and hunting areas, burial sites, and sacred grounds. (Neale-Sacks 2022; Stanford University Environmental Law Clinic 2022)[47]

In 1958, Congress authorized addition of the Trinity Division to the CVP. Trinity Reservoir, the CVP's second largest, was completed in 1962. It flooded the upper watershed of the Trinity River, inundating Wintu ancestral lands, blocking salmon and steelhead passage to upstream spawning grounds, and threatening salmon and steelhead runs in the lower watershed and Hoopa Valley Reservation. During its first decade of operations, the project diverted about 90 percent of the available waters in the Trinity River basin for use in the Central Valley. (Trinity River Restoration Program 2025a) See Part 7.

In 1960, the California voters authorized the State Water Project (SWP). (Hundley 2001, Chapter 5) The SWP's principal reservoir, Lake Oroville on the Feather River, lies atop Konkow Maidu ancestral lands. When filled in 1968, the reservoir inundated former Tribal villages, homes, and burial sites, and it has

[47] The threats to Winnemem Wintu ancestral lands are on-going. In March 2026, the Trump Administration announced that it was allocating $40 million to study a proposal to raise Shasta Dam by 18.5 feet. The expansion would add 640,000 acre feet of storage capacity to Shasta Reservoir, but it would also flood an additional two-thirds of a mile of the McCloud River. This would inundate more Winnemem Wintu lands, including "a sacred pool, the rocks used for cultural teachings and coming-of-age ceremonies, the burial site for a massacre at Kabyai Creek." (Becker 2026) The flooding also would violate the California Wild and Scenic Rivers Act. (Gray and Mount 2020)

separated the Konkow Maidu People from their traditional hunting, fishing, and ceremonial areas. (Rhadigan 2018)

Combined CVP and SWP operations have significantly contributed to the decline of salmon, steelhead, and other aquatic and terrestrial species throughout the Central Valley and Bay-Delta Estuary. This has affected many Californians, but it has caused special harm to the descendants of the Indigenous Peoples who were the first stewards of these lands and water resources. One example is the Winnemem Wintu whose

"culture and identity are inextricably connected with the *Nur,* or Chinook salmon, which once flourished in the Bay-Delta's waterways. In the Tribe's creation story, the *Nur* gave the Winnemem Wintu their voice, and the Tribe in turn promised to always speak for the *Nur.* The Winnemem Wintu and the *Nur* have depended on each other for thousands of years—the Winnemem speaking for, caring for, and protecting the salmon, and the salmon giving themselves to the Winnemem for sustenance. Ceremonies, songs, dances, and prayers about the relationship between the *Nur* and the Winnemem Wintu are the fabric of Winnemem Wintu culture, religion, and spirituality.

"Damming and diversion of Bay-Delta waters and poor water quality have contributed to the near extinction of Chinook salmon, thereby threatening the continued existence of the Winnemem Wintu as a People." (Stanford University Environmental Law Clinic 2022)

Although each of the more than 160 Tribal Nations in California has its own history, culture, and relationship to its ancestral lands and waters, the Winnemem Wintu express common goals: reconnection to Tribal lands, renewal of Tribal cultures, restoration of Tribal resources, and strengthening of Tribal sovereignty. A measure of control over the water resources that are of both practical and sacral importance to all Native Californians will be essential to these aspirations.

Part 2: Federal Reserved Water Rights

Dispossession, removal, and loss of Tribal lands and waters was not, of course, unique to California. Tribal land occupancy had been reduced from the entire continent at the time of contact and colonization to 138 million acres in 1887 and then to 48 million acres in 1934. (Newton and Washburn eds. 2024)[48] By the late 19th century, most Native Americans lived on Indian reservations. These reservations were

[48] The Indigenous population of what is now the continental United States fell from several million at the time the first Spanish and British settlement to approximately 248,000 in 1890, rising to 332,000 in 1930. (Thorton 1987) Estimates of the pre-Columbian Indigenous population living north of the Rio Grande range from 1 million to as many as 12 million individuals. (Ostler 2015) The 2020 federal census reported that 2,159,802 individuals identified themselves as "American Indian," and 6,363,796 identified as American Indian in combination with other races. Approximately 10% of both categories reside in California. (US Census Bureau 2023)

usually established on marginally productive lands that were isolated from the burgeoning population centers of the American West.[49]

In most cases, the reservations were small fragments of the ancestral lands once occupied and used by the resident Tribes. Some reservations—most notably the Oklahoma reservations to which the Tribes of the Southeastern United States were relocated following the Trail of Tears—were created out of lands that the Tribes had not previously occupied. Other reservations—such as the Klamath Reservation in Oregon, the Fort Peck Reservation in Montana, the Wind River Reservation in Wyoming, and the Colorado River Indian Reservation in Arizona and California—included two or more Tribes with distinct histories, ancestral land bases, and cultures.

Although most of the Tribes were moved to the reservations under duress—including military defeat and threats of violence—the treaties, executive orders, and federal legislation that created these reservations were legally significant because they demarcated areas of Tribal sovereignty and title. These documents also articulated the purposes for which the reserved lands were set aside for Tribal use. The stated purposes varied, but they included preservation of ancestral hunting and fishing rights, conversion of previously nomadic Tribes to an agrarian lifestyle, and creation of a "permanent home" for the Tribal members. Few, if any, of these documents expressly mentioned Tribal water rights that might be necessary to enable the Tribes to fulfill these reservation purposes, however.

In 1908, the United States Supreme Court addressed the question of Tribal access to water in the foundational case of *Winters v. United States.* The case involved the rights of the Gros Ventre and Assiniboine Tribes to the waters of the Milk River for use within the Fort Belknap Indian Reservation in Montana. Acting on behalf of the Tribes, the United States sued a group of upstream appropriators to prevent them from diminishing the flow of the river through the reservation and interfering with the Tribes' own diversions. The water users argued that, because the 1888 legislation that created the reservation did not expressly preserve the Tribes' ancestral water rights, they were free under Montana law to appropriate the waters of the Milk River above the reservation.

The Supreme Court rejected this argument and ruled the Tribes had rights under federal law to as much water as would be required to enable them to maintain a permanent home within the reservation. This included water for domestic uses, livestock, and irrigated agriculture. (US Supreme Court 1908)

From this decision emerged the "*Winters* doctrine," which governs most Tribal water rights to this day. As subsequent cases have clarified:[50]

- The creation of an Indian reservation by treaty, executive order, or act of Congress also reserves enough water to fulfill the purposes for which the reservation was created, including the

[49] In 1900, there were approximately 144 federally recognized Indian reservations of which 122 were located west of the Mississippi River. These included large reservations—such as the Colville, Yakima, Warm Springs, Blackfeet, Crow, Wind River, Standing Rock, Cheyenne, and Navajo reservations—the 23 Oklahoma reservations to which the Tribes of the Southeast had been relocated during the Trail of Tears, the pueblos of New Mexico, and reservations and rancherias in California. (Paullen and Wright 1930)

[50] This is a condensed and simplified list of the key features of the law governing Tribal reserved water rights. For more detailed analyses, see Newton and Washburn, eds. (2024), chapter 21, and Kelly and Richardson, eds. (2026), chapter 37.

establishment of a permanent home and sustainable economy for the resident Tribe (or Tribes) and its members.

- Tribal reserved water rights may include both surface water and groundwater.
- The United States holds these reserved water rights in trust for the benefit of the Tribe or Tribes that inhabit the reservation and for Tribal members.
- The priority of Tribal reserved water rights vis-à-vis other water right holders within the same river system or groundwater basin is defined by the date on which the reservation was established.[51]
- Tribal reserved water rights include water that may be required for present and future uses within the reservation.
- Tribal water rights may not be lost by abandonment, forfeiture, or non-use.
- Tribal water rights exist largely independent of state law, but in some circumstances they may be quantified in state court proceedings. [52]
- Tribes may exercise their water rights for a variety of purposes, including irrigation, domestic use, commercial and industrial uses, and protection of instream flows to support Tribal fishing rights and traditional practices. These recognized uses vary from reservation to reservation, however, depending on the specific purposes for which the reservation and accompanying reserved water rights were created.
- Tribal water rights may be assigned to individual "allottees" within the reservation, including both Tribal and non-Tribal members.[53] Tribes also may lease water for non-Tribal uses within the reservation.

Although many of these principles have been established by judicial and administrative decisions, Congress also has authority to define and alter Tribal reserved water rights. For example, Congress has approved a variety of Tribal water rights settlements that quantify Tribal diversion and pumping rights, authorize off-reservation transfers and use, provide imported water to augment or replace native surface

[51] If the United States reserves new lands to add to an existing Indian reservation, or incorporates lands acquired by a Tribe into its reservation, the priority date of the reserved water rights associated with the new lands is the date on which the lands were added to the reservation. (US Supreme Court 1963)

[52] Tribal water rights may be subject to state court jurisdiction in comprehensive adjudications of all rights to a surface water system or groundwater basin. The law of Tribal sovereign immunity prevents state courts from asserting jurisdiction over federally recognized Tribes. (Newton and Washburn eds. 2024) A 1953 federal statute known as the "McCarran Amendment" waives the United States's sovereign immunity, however, where the federal government is named as a defendant in comprehensive water rights adjudications. The US Supreme Court has held that this waiver applies not only to the government's own water rights, but also to the water rights it holds in trust for the various Indian Tribes. In determining and quantifying federal reserved water rights—including Tribal reserved rights—the state court must apply federal law. (US Supreme Court 1983b)

[53] These "allottees" hold individual title to parcels of land with many reservations in California. Most "allotments" were created pursuant to the General Allotment Act of 1887, which authorized the transfer of title to up to 160 acres of reservation land to individual Tribal members. If there was "surplus" land available after these transfers to Tribal allottees, the federal government could grant additional 160-acre parcels to non-Indians. (Newton and Washburn, eds. 2024) The federal courts have held that when Tribal land was subdivided and conveyed to individual Tribal members during the allotment era, each allottee received a proportionate share of the Tribe's reserved water rights. If that land subsequently was transferred to a non-Tribal member, the allotment of water also passed to the transferee. (US Court of Appeals 1981a)

and groundwater within the reservation, provide funding for Tribal infrastructure and other projects, and award compensation for the loss of ancestral rights.[54]

As noted at the outset, 16 Indian reservations located entirely or partly in California hold quantified federal water rights that have been confirmed by the courts, settlement agreement, or federal legislation. Four of these are located along the Lower Colorado River, seven are in the coastal foothills and inland valleys of Southern California, one is in Death Valley and surrounding lands, one is in the eastern foothills of the Tulare Basin, another is in the Coachella Valley, and two are located along the Klamath River in the northwest region of the state.

Part 3: The Decreed Water Rights of the Lower Colorado River Tribes

The Tribes with the largest quantified federal reserved water rights in California inhabit four of the five Indian reservations along the Lower Colorado River.[55] These reserved rights were also some of the first to be quantified, and they have significantly influenced the development and definition of other Tribal reserved rights—including those confirmed by congressional action, rather than judicial decree. Moreover, because the Colorado River is a vital source of supply for Southern California, Southern Nevada, and much of Arizona, these rights are inextricably intertwined with water management in all three states.

Pre-Contact History and Establishment of the Reservations

The Lower Colorado River Tribes are mostly descended from the Aha Makav, Chemehuevi, Kwatsáan, and Cocopah Peoples who used its waters for thousands of years.[56] Snowmelt from the Rocky Mountains would cause the river to flood each spring. As the water receded from the floodplains, the "People of the River" would plant corn, beans, squash, melons, and other crops. They carried water from the river for

[54] To date, the federal government has approved 40 Tribal water rights settlements, 35 of which were confirmed and authorized by Congress. As of June 2025, seven bills to approve eight settlement agreements, and to make technical amendments to five existing settlement acts, have been introduced in the 119th Congress. These include the Tule River Tribe Reserved Water Rights Settlement Act and the Agua Caliente Band of Cahuilla Indians Water Rights Settlement Act described in Part Six. (Congressional Research Service 2025a)

[55] The fifth, the Cocopah Reservation, was established by executive order in 1917 as the permanent home for members of three Tribal groups—the Yuma, Cocopah, and Maricopa—that had joined together in the late 18th century. Their ancestral lands included the lower reaches of the Colorado River and the Colorado River Delta. The Cocopah Reservation includes 6,500 acres, all of which is in the southwest corner of Arizona. The current reservation population is approximately 1,250. (US Department of the Interior et al. 2018; Partnership with Native Americans 2024b)

[56] Most of the aboriginal inhabitants of the Lower Colorado River Valley were Yuman language speakers. The Yuman family of languages encompassed much of what is today the Southwest United States and Northern Mexico. The "River Yuman" speakers included Aha Macav (Mojave), Maricopa, and Kwatsáan (Quechan). The "Delta Yuman" included Kumeyaay (Diegueño) and Kwapa (Cocopa). The Chemehuevi People, who were Southern Paiute Indians, were linguistically related to the greater Uto-Aztecan family of languages spoken by Indigenous Peoples whose territory extended from the Great Basin into central Mexico. (California language Archive 2025a, 2025b)

domestic uses in their homes and villages, harvested mesquite from its riparian forests, fished its waters, hunted along the banks of the river and the islands of the delta, and used the river for commerce and ceremonial purposes. Some of the Tribes dug ditches and canals to divert water from the river to irrigate adjacent uplands areas, as well. (US Department of the Interior et al. 2018; Ten Tribes Partnership 2025)

The Lower Colorado River Tribes traded food, woven goods, clothing, and pottery with one another, with the Hohokam Tribes to the east, and with various Tribes as far west as the Pacific Coast. At the time of first contact with Spanish explorers in the 16th century, the Tribes of the Lower Colorado River basin constituted the largest group of Indigenous People in what is now the Southwest United States. (US Department of the Interior et al. 2018; Ten Tribes Partnership 2025)

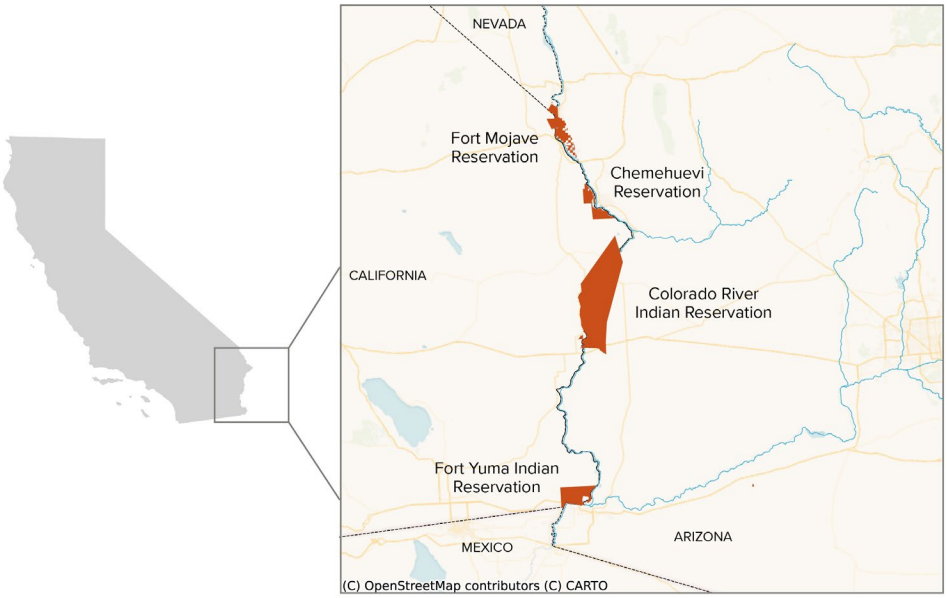
By the 19th and early 20th centuries, the lower Colorado River Valley had become a key crossing point, first from Mexico into Alta California and later between the California and the rest of the United States. Two trails crossed the Colorado River—at Beale's Crossing in the north and at Yuma to the south. Commercial ferry services were established in 1849 following the Gold Rush, and steamships carrying cargo and People from the Gulf of California appeared on the river in 1852. To protect these interests, the United States built two forts at these river crossings: Camp Independence (later named Fort Yuma) in 1850 and Fort Mohave in 1859. (Mueller and Marsh 2002)

Conflicts flared between the native inhabitants of the valley—whose lands and lives were under increasing threat—and the growing numbers of immigrants, settlers, and military personnel. (Madley 2016) At the conclusion of the Civil War, federal policy shifted from coexistence to separation. Relocation and confinement of the People of the River to reservation lands followed.

Figure 6 shows the locations of the four Lower Colorado River reservations that are located partly or entirely in California. The Tribes that inhabit these reservations are described in Text Box 1.

FIGURE 6

Indian reservations of the Lower Colorado River



SOURCE: Reservation boundaries are obtained from the US Bureau of Indian Affairs. The Colorado River course is obtained from the Lincoln Institute of Land Policy. State borders are obtained from the US Census Bureau. Basemap features from OpenStreetMap contributors under the Open Database License.

NOTE: This map shows the locations of the four Indian Reservations along the Lower Colorado River that are wholly or partly within California. It omits the Cocopah Indian Reservation, which is located just south of the Fort Yuma Indian Reservation, because it is entirely within the State of Arizona.

Box 1: Creation of the Four Lower Colorado River Indian Reservations

Colorado River Indian Reservation: Congress established the Colorado River Indian Reservation in 1865. Its original inhabitants were the Mohave (Aha Macav) People, and the reservation included some of the Tribe's ancestral lands. The reservation was expanded three times during the ensuing decade to include members of the Chemehuevi Tribe, a branch of the Southern Paiute. Following World War II, families from two other Tribes, the Hopi and Navajo, were relocated to the reservation. The United States recognizes the Colorado River Indian Tribes as a single sovereign Tribal government. (US Department of the Interior et al. 2018)

Today, the Colorado River Indian Reservation totals about 300,000 acres, about 16 percent of which lies in California and 84 percent in Arizona. The reservation extends for approximately 48 miles along the Colorado River. Its population is about 8,700. (Partnership with Native Americans 2024a)

Fort Yuma Indian Reservation: In 1884, President Chester Arthur created the Fort Yuma Reservation by executive order for habitation by the Kwatsáan (Quechan) People and non-Indian settlers in the vicinity of Fort Yuma. The reservation included portions of the Tribe's ancestral lands, mostly on the floodplains of the west side of the Colorado River near its confluence with the Gila River. (US Department of the Interior et al. 2018; Fort Yuma Quechan Indian Reservation 2025)

The Fort Yuma Reservation currently encompasses approximately 45,000 acres, about 95 percent of which is in California. The Tribe has roughly 4,000 members, about half of whom live on the reservation. (Partnership with Native Americans 2024e)

Fort Mojave Indian Reservation: President Benjamin Harrison created the Fort Mojave Reservation by executive order in 1890 as an Indian school and home for the Pipa Aha Macav. The reservation was created out of lands that were previously part of Fort Mohave, a military encampment in Arizona. In 1911, President William Taft expanded the reservation by executive order, which extended the reservation into California and Nevada. The contemporary reservation includes portions of the Pipa Aha Macav ancestral lands on both sides of the Colorado River. (US Department of the Interior et al. 2018; Fort Mojave Indian Tribe 2026a)

The Fort Mojave Reservation embraces 32,713 acres, of which 13 percent is in California, 9 percent is in Nevada, and 78 percent is in Arizona. Its total current population is about 1,450. (Fort Mojave Indian Tribe 2026a; Partnership with Native Americans 2024d)

Chemehuevi Reservation: In 1853, the United States declared the Chemehuevi People's ancestral lands to be part of the public domain, and it moved many of the Tribal members to the expanded Colorado River Indian Reservation in 1865. President Roosevelt restored a portion of the Tribe's lands in 1907, however, by creating the Chemehuevi Valley Reservation on the California side of the Colorado River. Although the reservation originally included the river's floodplain, these lands were lost when Parker Dam was completed, and the waters of Lake Havasu inundated the lands along the river. (US Department of the Interior et al. 2018; Partnership with Native Americans 2024c)

Today, the Chemehuevi Reservation encompasses about 32,000 acres of land, all of which is in California. The reservation extends for about 30 miles along the western shore of Lake Havasu. Its current population is between 300 and 400. (Partnership with Native Americans 2024c)

Each of the four reservations preserved access to the bed and banks of the lower Colorado River, and the Tribes continued to fish the river and plant crops in its floodplains. As described above, this began to change in the early 20th century as the United States and other parties constructed the series of dams and

diversion works that would fundamentally alter the hydrology and ecology of the river.[57] These dams captured the floodwaters, silt, and nutrients that for millennia had irrigated Tribal lands and sustained Tribal fisheries. As the reservoirs filled and diversions increased, the volume and flow of water in the river diminished. The lower reach of the Colorado, from its confluence with the Gila to its Delta, was completely dry during some periods. (Fleck 2016; US Department of the Interior et al. 2018)

By 1936, when Hoover Dam was completed and Lake Mead began to fill, the aboriginal river on which the lower Colorado River People had based their lives was but a relic. The Tribes struggled—some with significant federal assistance, others not—to carve out new lives on their reservation lands.

Quantification of the Tribes' Federal Reserved Water Rights

Development of the waters of the Colorado River sparked litigation among the three "Lower Basin" states—Arizona, California, and Nevada.[58] The United States intervened in the litigation to protect its own interests in operating Hoover Dam and downstream project works. During the litigation, it also claimed federal reserved water rights for the five lower Colorado reservations and other federal landholdings within the basin.

In its 1963 decision in *Arizona v. California,* the US Supreme Court ruled that the 7.5 million afa of the waters of the mainstem of the Colorado River assigned to the Lower Basin states should be allocated 4.4 million afa to California, 2.8 million afa to Arizona, and 300,000 afa to Nevada.[59] It also confirmed the Tribes' water rights under the *Winters* doctrine:

"Most of the land in these reservations is, and always has been, arid. If the water necessary to sustain life is to be had, it must come from the Colorado River or its tributaries. It can be said without overstatement that, when the Indians were put on these reservations, they were not considered to be located in the most desirable area of the Nation. It is impossible to believe that, when Congress created the great Colorado River Indian Reservation and when the Executive Department of this Nation created the other reservations, they were unaware that most of the lands were of the desert kind—hot scorching sands—and

[57] In order of dates of completion of construction, the dams of the Lower Colorado River include Laguna Diversion Dam (1908), Hoover Dam (1936), Parker Dam (1938), Imperial Dam (1938), Headgate Rock (1941), Davis Dam (1951), and Palo Verde Dam (1958). (US Bureau of Reclamation 2017)

[58] The Colorado River Compact of 1922 divided the waters of the Colorado River System at Lee's Ferry, Arizona, and allocated 7.5 million acre feet annually (afa) to each basin. To implement this allocation, the compact requires Upper Basin states—Colorado, Wyoming, Utah, New Mexico—to allow a minimum of 75 million acre feet to flow to the Lower Basin every 10 years. Lake Mead, formed by Hoover Dam, is the principal storage facility for waters allocated to the Lower Basin. The compact also allocated an additional one million afa to the Lower Basin to account for the waters of the Gila River and its tributaries, which flow into the Colorado River approximately 15 miles upstream of the United States-Mexico border. (Sencan and Gray 2025)

[59] The Supreme Court based its decision on the Boulder Canyon Project Act of 1928, which authorized construction of Hoover Dam and other facilities and gave Congress' advance approval to an interstate compact among the three Lower Basin states to apportion the water in the quantities described in the text. Although Arizona declined to ratify the proposed compact, the Court held that "the legislative history, the language of the Act, and the scheme established by the Act for the storage and delivery of water convince us also that Congress intended to provide its own method for a complete apportionment of the mainstream water among Arizona, California, and Nevada." (US Supreme Court 1963)

that water from the river would be essential to the life of the Indian people and to the animals they hunted and the crops they raised." (US Supreme Court 1963)[60]

The Court then held that the Tribes are entitled to enough water to irrigate all "practicably irrigable acreage" on their respective reservations. The Court explained that this "PIA standard" was the best means of quantifying the water rights for each reservation, because "the water was intended to satisfy the future as well as the present needs of the Indian Reservations." Rather than limit the Tribes' water rights to their current or reasonably foreseeable needs, the Court concluded that "the only feasible and fair way by which reserved water for the reservations can be measured is irrigable acreage." (US Supreme Court 1963)

The Supreme Court adopted the PIA quantification standard from the 1960 report to the Supreme Court prepared by Simon Rifkind, a federal district court judge appointed by the Court to serve as its "Special Master" during this phase of the *Arizona v. California* litigation. Judge Rifkind recommended that the Supreme Court quantify the Tribes' reserved water rights based on practicably irrigable acreage, rather than variable population-based criteria, for several reasons. He concluded that the United States intended to reserve sufficient water to make the reservation lands productive, not simply to serve the current Tribal population. This in turn required a fixed allocation to enable the Tribes to develop and use all practicably irrigable acreage within their respective reservations. Moreover, a quantification that varied over time would create an unacceptable risk to the Tribes that water would not be available as their demands increased, and it could deter investment in irrigation and other water supply infrastructure. A variable quantification standard also would create similar uncertainty for the states and the other water users that obtain water from the Lower Colorado River. (US Supreme Court 1960)[61]

The Supreme Court quantified each Tribe's water rights in 1964 based on the Special Master's analysis and recommendations. (US Supreme Court 1964) More than three decades later, in 2006, the Court adopted a "Consolidated Decree" that incorporated these quantifications with a few modifications based on boundary revisions to several reservations. The revisions effectively added practicably irrigable acreage—and hence additional reserved water rights—to the practicably irrigable acreage included in the

[60] The Supreme Court dismissed Arizona's argument that only Congress has the power to created federal reserved water rights. It noted that Congress, the Executive Branch, the states, and the public had long recognized the Colorado River reservations. "We can give but short shrift at this late date to the argument that the reservations either of land or water are invalid because they were originally set apart by the Executive." (US Supreme Court 1963)

[61] To quantify a Tribe's rights under the PIA standard, a court must determine which lands within the reservation are arable and then decide whether it is economically feasible to convey water to those lands and irrigate them using the waters potentially available to the Tribe. The lands that satisfy these criteria qualify as "practicably irrigable acreage." The PIA calculus has engendered substantial controversy in other litigation—both because of the vagueness and manipulability of the economic feasibility criterion and because of the quantity of Tribal reserved water rights courts have recognized under the PIA standard. (Newton and Washburn eds. 2024)

For these and other reasons, some courts have applied a "homelands" standard that seeks to quantify a Tribe's water rights based on the amount of water it needs to maintain a permanent home and a modern, dynamic economy on its reservation. (US Court of Appeals 1981a; Arizona Supreme Court 2001; US Court of Appeals 2017a) "This is a fact-specific inquiry based on the particular tribe's practical and economic actual and proposed uses. The tribe's history, culture, geography and natural resources, economic base, past water use, and present and projected population are factors to be considered." (Newton and Washburn eds. 2024)

1964 quantification.[62] The Consolidated Decree defines the maximum quantities that the Tribes (or the United States on behalf of the Tribes) may divert from the Lower Colorado River each year, as well as the maximum irrigable acreage for each reservation. The decree also stipulates that the annual quantities available for each reservation shall not exceed the maximum diversion right or "the quantity of mainstream water necessary to supply the consumptive use required for irrigation of [the maximum authorized irrigated acreage] and for the satisfaction of related uses, whichever . . . is less." (US Supreme Court 2006a)[63]

The Supreme Court also recognized that the Tribes may use some of their water for purposes other than "irrigation and other agricultural application" within their respective reservations. In other words, the Court used practicably irrigable acreage as its quantification metric, rather than as a limitation on the purposes for which the Tribes can use their water. The Consolidated Decree provides that, in these situations, a Tribe's total annual consumptive use of water shall not exceed the amount of water that would have been consumed if the Tribe had used the water to irrigate PIA lands within its reservation. (US Supreme Court 2006a—Appendix)

According to the Consolidated Decree, the federal reserved water rights of the Lower Colorado River Tribes are "present perfected rights"—i.e., water rights that existed before the effective date of the Boulder Canyon Project Act, which authorized construction of Hoover Dam and allocated the waters of the Lower Basin among Arizona, California, and Nevada. The Tribes' decreed rights are the among most senior water rights on the Lower Colorado River. Accordingly, the Consolidated Decree directs the Bureau of Reclamation to deliver the Tribes' respective entitlements ahead of all but a handful of other users in times of shortage. (US Supreme Court 1964, 2006a)

Table 2 summarizes the federal reserved water rights of each of the reservations that are wholly or partly within California.[64]

[62] The Supreme Court allowed the Lower Colorado River Tribes to intervene in the litigation in 1983 to represent their interests in the resolution of these boundary disputes and other issues under the PIA standard. (US Supreme Court 1983a)

[63] As noted in the preceding section, the United States holds each Tribe's water rights in trust for their benefit. (US Supreme Court 1963)

[64] Each reservation's decreed water right is included within the allocation of Colorado River water for the Lower Basin states based on the percentage of practicably irrigable land that lies within each state. Thus, the Fort Mojave Reservation's 132,789 afa decreed federal reserved water right is assigned 16,720 afa (13%) to California's allocation of Colorado River water, 12,534 afa (9%) to Nevada, and 103,535 afa (78%) to Arizona.

TABLE 2

Water rights and water use in the Lower Colorado River reservations

Reservation and Tribe	Decreed Water Right (afa)	Maximum Authorized Irrigated Acreage	Priority Dates	Actual Irrigated Acreage (Approx.)	Average Diversions 2014-2024 (afa)	Average Consumptive Use 2014-2024 (afa)
Fort Mojave Indian Reservation	132,789	20,544	1890 & 1911	15,000	84,318	46,096
California Lands	16,720	7,587	1890	2,720	12,949	6,966
Chemehuevi Indian Reservation (Entirely California)	11,340	1,900	1907	80	340	183
Colorado River Indian Reservation	719,248	107,903	1865-1876	84,500	549,256	282,872
California Lands	56,846	8,528	1873-1876	660	3,141	1,831
Fort Yuma (Quechan) Indian Reservation	77,966	11,694	1884	7,556	50,200	39,284
California Lands	71,616	10,742	1884	6,990	48,165	38,652

SOURCES: Decreed water rights: US Supreme Court 2006a, 2006b. Irrigated acreage estimates: US Bureau of Reclamation et al. (2018); Inter-Tribal Council of Arizona (2025). Average annual diversion and consumptive use data: US Bureau of Reclamation, Lower Colorado River Water Accounting annual reports.

NOTES: (1) The four reservations are listed in geographic order, from north-to-south along the Colorado River, to correspond with the map shown in Figure 6. (2) The Fort Yuma (Quechan) Reservation's decreed water rights include 7,000 afa that the Tribe may not divert until 2035 under the terms of a 2005 settlement agreement that resolved a longstanding reservation boundary dispute. (3) Average annual diversions by the Quechan Tribe do not include 13,000 afa of Tribal water to which the Metropolitan Water District of Southern California has a right to divert in exchange for financial compensation to pursuant to the 2005 settlement agreement and forbearance agreements with the Tribe. (4) Average annual water use data include small quantities of groundwater pumped by each Tribe for domestic uses within their respective reservations. These data also include non-Tribal irrigation uses within each reservation.

Contemporary Tribal Uses of Water

The Lower Colorado River Tribes use their water primarily for irrigation. Although each reservation's agricultural production varies, crops include alfalfa, cotton, soybeans, wheat, barley, milo, sorghum, feed grass, hay, okra seed, olives, and other fruits and vegetables. Domestic and commercial uses—including hotels, casinos, golf courses, and other tourist facilities—are supplied by water diverted from the Colorado River and groundwater.[65] In addition, the Tribes deliver water to individual allotments and

[65] In response to a 2020 survey of the Indian Nations of the Colorado River Basin, three of the four Lower Colorado River Tribes reported that their drinking water and sanitation systems complied with federal standards with some service deficiencies related to routine maintenance and repair or capital improvements. The exception was the Quechan Tribe. It reported that 198 of the homes on the Fort Yuma Reservation met federal standards, while the remaining 344 homes had "an inadequate or partial water supply and a sewage disposal facility that does not comply with applicable water supply and pollution control laws or [had] no solid waste disposal facility." (Water and Tribes Initiative 2021, Appendix B) The Tribe continues to work to address these deficiencies.

leased lands within their respective reservations. As Table 2 indicates, irrigated acreage and water use varies among the four reservations. (US Department of the Interior et al. 2018)

The Colorado River Indian Tribes

The Colorado River Indian Tribes (CRIT) divert on average 76 percent of their 719,248 afa decreed diversion rights, and they use three times more water than the other four reservations combined. Most of this water is distributed through the Colorado River Irrigation Project, which the federal government originally constructed for the Tribes in the 1870s. The project supplies water to the Tribes' agricultural corporation, CRIT Farms, to irrigate 12,000 acres to 15,000 acres of Tribal land each year based on crop rotation patterns. It also delivers water to individual allotments and leased lands within the reservation. (US Department of the Interior et al. 2018)

In the past two decades, the Colorado River Indian Tribes have diversified their economy by developing a variety of businesses, including sand and gravel production, carbon regeneration, real estate development, retail stores, tourism, and recreation. Approximately seven percent of the Tribes' annual diversions from the Colorado River supply domestic, commercial, and industrial uses. In addition, the Tribes supply small amounts of water to the Ahakhav Tribal Preserve, which consists of about 1,500 acres of wilderness, aquatic habitat, and parklands. Tailwater from the Colorado River Irrigation Project also supplies the Bosque Area, a native tree preserve and gathering site for traditional Tribal practices, which contains extensive stands of mesquite trees that are of great spiritual and cultural significance to the Mohave People. (US Department of the Interior et al. 2018)

The Colorado River Indian Tribes nonetheless have critical infrastructure needs that prevent them from fully developing and using their water resources.[66] Aging and antiquated diversion, transportation, and distribution facilities prevent the Tribes from diverting and using their full annual entitlements. These deficiencies also create conveyance losses and excessive return flows that return to the river and are lost to the Tribes. (US Department of the Interior et al. 2018; Sanchez and Edwards 2025)

The lack of adequate infrastructure is especially notable in the California portion of the CRIT Reservation. As shown in Table 2, the Tribes are entitled to divert 56,846 afa for these lands. Yet, they have only diverted an average of 3,141 afa over the past 11 years. According to the Department of the Interior:

The "unused water is utilized by a junior contract holder without benefit to the Tribes. The Tribes' challenge is to put that as yet unused water to work for the benefit of its membership as soon as practicable. The high cost of land development is a hurdle that must be overcome, but the value of the lost water, even at the artificially low agricultural rates presently controlling the marketplace, has reached a level sufficient to make that investment a prudent one." (US Department of the Interior et al. 2018)

[66] The Quechan Tribe is able to exercise, or gain economic value from, a much greater percentage of its Colorado River entitlement for several reasons. First, the Yuma Project, from which it receives its water, is a federal reclamation project that is administered by the Bureau of Reclamation. It is better and more reliably funded than the projects that serve the Fort Mojave and CRIT reservations, which are funded by the Bureau of Indian Affairs. (As noted in the text, the Chemehuevi Reservation receives no federal water infrastructure funding.) Second, the

In June 2025, the US Bureau of Reclamation announced that it will grant $1.1 million to the Tribal government to assist its review of existing infrastructure and to identify necessary maintenance. The funds also will be used "to identify potential opportunities to install new equipment and utilize updated technology to modernize the project." In addition, the Bureau is considering transferring the project to the Colorado River Indian Tribes. "This could allow for water leasing and other opportunities that could contribute to overall water savings in the Colorado River Basin." (US Bureau of Reclamation 2025b)

The Fort Mojave Indian Tribe

The Fort Mojave Indian Tribe currently diverts 64 percent of its 132,789 afa entitlement from the Colorado River to supply approximately 15,000 acres of irrigated lands within its reservation.[67] Most of these lands are within the historic floodplain of the Colorado River. The Tribe uses ten pumps to divert and lift the water to several concrete-lined canals that deliver the water to the fields. The Tribe owns and operates Avi Kwa Ame Farms, which uses Colorado River water to irrigate 12,000 acres of reservation lands. The Tribal corporation exports much of its production—including cotton, fiber, and Bermuda seed—to buyers within the United States as well as in Asia and the Middle East. (Agworld 2025) Its alfalfa hay crop largely serves the 4,000 head of cattle and 10,000 sheep that are winter-pastured on the reservation. (Fort Mojave Indian Tribe 2026b) The Tribe also delivers water to Tribal and non-Tribal farmers within the reservation, whose main crops are upland cotton and alfalfa. The Tribe uses about 90 percent of its Colorado River water for these irrigation uses. (US Department of the Interior et al. 2018)

In addition, the Fort Mojave Tribal Utilities Authority supplies groundwater to homes and businesses within the reservation, including the Avi Resort and Casino in Laughlin, Nevada, and the neighboring Mojave Resort Golf Club. The Tribe also uses its lands along the Colorado River to support tourism and recreational uses. (Fort Mojave Indian Tribe 2026a; University of Arizona 2025a)

The Fort Mojave Tribe also suffers from inadequate and antiquated water supply and distribution infrastructure. These problems are compounded by the difficulty in providing water service to the undeveloped practicably irrigable acreage within the reservation. These lands "can be accessed with gravity canals, but that requires siphons under checkerboard intersections with multiple buried utilities. These engineering challenges are compounded by the lack of reliable federal funding for infrastructure improvements and operating costs. (US Department of the Interior et al. 2018)

The Fort Yuma Quechan Indian Tribe

The Fort Yuma Quechan Indian Tribe diverts about 71 percent of its current 70,966 afa entitlement for uses within the reservation.[68] Most of these diversions (96%) serve reservation lands in California. As described in more detail below, the Tribe also benefits from an additional 13,000 afa that it may choose

[67] For the California portion of the Fort Mojave Reservation, average annual diversions are about 79 percent of the Tribe's entitlement.

[68] As described below, the 2006 Consolidated Decree incorporates a 2005 settlement agreement that prevents the Tribe from diverting 7,000 afa of its full entitlement until 2035. (US Supreme Court 2006a, 2006b)

not to divert in any given year and instead allow to flow through the priority system to the Metropolitan Water District of Southern California (MWD).[69]

The Quechan Tribe receives most of its water from the Reservation Division of the Yuma Project, a federal reclamation facility that was constructed in the early 20th century and is administered by the Bureau of Reclamation.[70] The project delivers water to two sets of users in California: The "Bard Unit," which is located on privately owned land within the exterior boundaries of the reservation, serves 7,120 acres of non-Tribal farmland. The "Indian Unit" serves 7,566 acres of reservation land that is divided into individual allotments. The Quechan Tribe owns some of these allotments on behalf of its members; the remainder are owned by Tribal members. The Tribe and many individual allottees lease their land to non-Indian farm operators. (US Department of the Interior et al. 2018; University of Arizona 2025b) The Quechan Tribe also diverts some water from the Colorado River through its own pumps to supply irrigated lands that are not served by the Yuma Project. (US Department of the Interior et al. 2018; US Bureau of Reclamation n.d.)

Domestic and commercial uses within the reservation—including the Quechan Casino Resort and the Paradise Casino—are supplied primarily by groundwater. In addition, the Tribe is part of a consortium to restore riparian habitat and wetlands on the east bank of the Colorado River under a Multi-Species Conservation Program managed by the Bureau of Reclamation. The Tribe contributes an average of about 1,250 afa from the Arizona portion of its entitlement to these programs. (US Department of the Interior et al. 2018)

As noted above, the Quechan Tribe does not currently have significant water supply or distribution infrastructure deficiencies. Indeed, as described in more detail below, the Tribe is able to make 13,000 afa of its Colorado River entitlement available to MWD based on its decision to limit "proposed development and utilization of practicably irrigable acreage." (US Supreme Court 2006a, 2006b) The Tribe is pursuing funding for a variety of water conservation and efficiency improvements, however, as well as funding for new infrastructure to address the safe drinking water and sanitation problems noted previously. (Interview with Quechan Tribal Representative)

The Chemehuevi Indian Tribe

In marked contrast to the other three Tribes, the Chemehuevi Indian Tribe is only able to use about three percent of its 11,340 afa entitlement from the Colorado River. The Tribal ancestors grew crops and grazed cattle on the floodplains of the Colorado River, but these lands were lost when Parker Dam was completed and the waters of Lake Havasu flooded 9,000 acres of the Chemehuevi Reservation. The uplands portion of the reservation is marked by poor soil quality, and the Tribe lacks funding to construct a modern irrigation system. Although the federal government built a small reservoir on the reservation, it has not provided funding to divert and transport water to the Chemehuevi's irrigable lands. The Chemehuevi Tribe does divert a small amount of water itself, with which it irrigates 80 acres of fruit trees

[69] From 2023-2026, the Tribe and MWD have entered into a System Conservation Implementation Agreement with the Bureau of Reclamation to allow that water instead to remain in Lake Mead to address drought conditions in the Colorado River system. This agreement is described in greater detail below.

[70] The Yuma Project supplies water to users on both sides of the Colorado River. The Arizona service area is known as the Valley Division. The California portion of the project is called the "Reservation Division. (US Bureau of Reclamation n.d.)

and row crops. It lifts this water from the river via a single diesel-fueled pump. (US Department of the Interior et al. 2018; Olade, Farooq, and Smith 2023)[71]

Domestic and commercial uses within the Chemehuevi Reservation are primarily served by groundwater. These uses include Havasu landing Resort, Casino, and Marina, as well as a golf course, campground, and other tourist amenities. The Tribe also supplies groundwater to Vista del Lago, a gated non-Indian community located just west of the reservation. In addition, the Tribal Environmental Department manages a program to expand native vegetation habitats in riparian areas where it is replacing non-native tamarisk with native cottonwood, willow, and mesquite. This program uses less than 5 afa of the Tribe's entitlement. (US Department of the Interior et al. 2018)

The Chemehuevi Tribe's water supply infrastructure needs are compelling: Without federal investment, the Tribe cannot make any significant use of its own water.

Forbearance Agreements and Off-Reservation Water Transfers

Although irrigation and related purposes within the four reservations remain the predominant uses of the water allocated to the Lower Colorado River Tribes, they are not the exclusive uses. Two Lower Colorado River Tribes—the Quechan Tribe and the Colorado Indian Reservation Tribes—have transferred water to other parties for off-reservation use through forbearance and conserved water transfer agreements.

Tribal authority to transfer water to non-Tribal users offers several benefits for the Tribes, for the transferees, and for overall water resources management. The Tribes can earn income by choosing not to exercise their full diversion rights, or by reducing their normal diversions of water in any given year, to allow others to divert and use the water instead. They also may lease water they conserve through short-term fallowing, crop rotation and substitution, and efficiency improvements. In these situations, the Tribes may decide that they can gain greater economic value in the marketplace from the foregone or transferred water than they would by using the water themselves.

In turn, the recipients gain by acquiring water at lower prices than they would have to pay to develop new supplies. They also may use forbearance agreements, water transfers, and long-term option agreements to help diversify their water portfolios to hedge against drought and other shortages within their water supply systems. (National Research Council 1992; Joyce 2024)

Water transfers and forbearance agreements also offer broader economic and societal benefits. They create incentives to conserve water, which can reduce aggregate pressures on existing sources. They produce revenue for investment in modern irrigation infrastructure and other water efficiency measures. Transfers also can provide supplemental flows to enhance water quality, fish and wildlife, and other instream uses. (Hanak et al. 2011) And, as described below, they can help to alleviate system-wide

[71] The Chemehuevi Reservation is also an example of one of the common criticisms of the PIA standard. Although states and competing water users "often consider PIA awards to be a 'windfall' that provides tribes with far more water than they actually need, [the] more common result . . . is that a PIA award provides insufficient water for tribes that have few irrigable acres or live in areas with climates not conducive to irrigation, but do possess other resources that, with adequate water, could provide an economic base for the reservation. The focus on an agricultural method of quantification therefore can force tribes to conform to the 19th century ideal of an agrarian society at a time when agriculture is no longer necessarily profitable." (Newton and Washburn, eds. 2024)

shortages and declining reservoir levels that threaten multiple state, federal, Tribal, and international interests.

Although the 2006 Consolidated Decree in *Arizona v. California* expressly authorizes a long-term forbearance agreement between the Quechan Tribe and the Metropolitan Water District, it does not otherwise address the question of off-reservation transfers. The Bureau of Reclamation has recognized several short-term transfers of conserved Lower Colorado River water—i.e., water that the Tribes generally use for irrigation and related uses, but which they will forego during the term of the transfer agreement. In addition, Congress recently enacted legislation that expressly authorizes the Colorado River Tribes to engage in certain long-term water transfer, exchange, and off-reservation storage agreements.

The Quechan Tribe-Metropolitan Water District Forbearance Agreement

During the late stages of the *Arizona v.* California litigation, the Quechan Tribe, MWD, and several other parties signed a settlement agreement that defined the boundaries of the California portion of the Fort Yuma reservation and increased the acreage eligible to receive water from the Colorado River.[72] The agreement also increased the Tribe's diversion rights for its California lands by 20,000 afa—from a maximum of 51,616 afa to 71,616 afa.[73] Under the terms of the agreement, the Tribe had authority to divert 13,000 afa of this water immediately. It may not divert the remaining 7,000, however, until 2035. (US Supreme Court 2006b)

The settlement agreement also authorized the Quechan Tribe to forgo use of the new 13,000 afa entitlement based on a Tribal decision "to limit currently proposed development and utilization of practicably irrigable acreage . . . and instead allow such water to pass through the priority system and be diverted by [MWD]." The Tribe has sole authority to make the decision to forbear diversions, which it may exercise on an annual basis. If the Quechan Tribe forbears water in any given year, MWD must compensate the Tribe for the full amount the Tribe chooses not to divert. Beginning in 2035, MWD may terminate this payment obligation by annual written notice to the Tribe. (US Supreme Court 2006b)

The Supreme Court incorporated the terms of the settlement agreement into its 2006 Consolidated Decree. (US Supreme Court 2006a)

---

[72] The other parties were the United States, the State of California, and the Coachella Valley Water District. The district's participation was important, because it agreed "not to object to, or interfere with, the receipt and usage by [MWD] of water that may become available to [MWD]" from the Quechan Tribe under the terms of the forbearance agreement. (US Supreme Court 2006b)

The 2006 Consolidated Decree also resolved a boundary dispute over the Quechan Tribe's reservation lands in Arizona and recognized a Tribal reserved water right based the practicably irrigable acreage of those lands. This was necessary because the United States did not claim water rights for the Arizona portion of the Fort Yuma Reservation when it filed the claims that were resolved in the 1964 decree.

[73] Consistent with the Supreme Court's general definition of the water rights of the Lower Colorado River reservations, the agreement recognized the Quechan Tribe's right to divert up to 20,000 afa or "the amount of Colorado River water necessary to supply the consumptive use required for irrigation of 2,998.50 acres, and for the satisfaction of related uses," whichever is less. (US Supreme Court 2006b)

With minor exceptions, the Quechan Tribe has forgone diversions of the full 13,000 acre feet each year and made this water available to MWD.[74] The settlement agreement requires MWD to compensate the Tribe for the forgone water at a current contract rate of about $200 per acre foot. To date, MWD has paid the Tribe approximately $35.5 million for water provided under the annual forbearance agreements.[75]

In 2023, the Tribe, the United States, and MWD agreed that the Tribe will contribute the 13,000 afa forbearance water to Lower Colorado River System Conservation Program for three years (2023-2025) instead of making it available to MWD.[76] With funding from the Inflation Reduction Act, the Bureau of Reclamation paid the Tribe $400 per acre foot for the forgone diversions. (US Bureau of Reclamation 2023a; Ingram 2023)[77]

The Quechan Tribe-Metropolitan Water District Seasonal Fallowing Pilot Program

The Quechan Tribe and MWD have also created a Seasonal Fallowing Pilot Program. This conserved water program began in 2022 and has been extended through 2026. (Metropolitan Water District 2023a, 2023b) The Tribe has agreed to fallow up to 1,600 acres of irrigated farmland during the months of April through July. If the maximum acreage is fallowed, the program would produce about 3,500 afa, which MWD can store in Lake Mead or use for its own purposes. (Business Wire 2021; Metropolitan Water District 2023b)[78] MWD currently pays about $630 per acre per acre of fallowed land. (Interview with MWD Staff)

MWD also has a Seasonal Land Fallowing Program with the Bard Water District (BWD), which authorizes annual fallowing of up to 6,000 acres of irrigated lands. The BWD-MWD program began as a two-year pilot project in 2016 and now extends through 2026. (MWD 2021)[79] The two seasonal fallowing programs are closely coordinated, as many of the participating growers own or operate farms in both the Quechan Reservation and the Bard Water District. Although the amount of water contributed from the

[74] The exceptions occurred in 2007, 2014, and 2015, when the Tribe diverted and used some water that it normally forbears in favor of MWD. The quantities diverted by the Tribe in these years were: 428 af (2007); 847 af (2014); and 1,163 af (2015). (Interview with MWD Staff)

[75] The settlement agreement set a compensation rate of $125, which compounds each year at a rate of 2.5 percent. (US Supreme Court 2006b)

[76] The System Conservation Program is described below.

[77] The agreement authorizes MWD to "call-back" up to 6,500 afa of this water in 2024 and 2025 and divert it for its own uses. (US Bureau of Reclamation 2024d) MWD did not exercise this option, however. (Interview with MWD Staff)

[78] The transferable water is limited to the net consumptive use of water on the fallowed lands—i.e., the quantity of water that would have been consumed by the crops or otherwise lost through evaporation if the water had been used for irrigation rather than transfer. This "evapotranspiration" or "ET" is composed of "soil evaporation (E) and transpiration (T). Transpiration is the water transpired or lost to the atmosphere from small openings on the leaf surfaces. Evaporation is the water evaporated or lost from the wet soil and plant surfaces." (Al-Kaisi n.d.) The transferable water-to-fallowed land ratio set forth in the Quechan Tribe-MWD Seasonal Fallowing Pilot Program agreement is based on an estimate of the ET of the crops that would have been irrigated on the Fort Yuma Reservation if the land had not been fallowed pursuant to the agreement.

[79] In addition to these Seasonal Fallowing Programs, MWD has a 35-year dry year option agreement with the Palo Verde Irrigation District (PVID) that began in 2005. Under the agreement, MWD may request PVID to have its members fallow between 7 percent and 28 percent of the 91,400 acres of irrigated lands within the district in any given year. MWD then compensates PVID and the participating farmers for the conserved water based on the fallowed acreage. (MWD 2022)

Fort Yuma Reservation to date has been relatively small, the Tribe and BWD have been working collaboratively to increase grower participation. (Interview with Quechan Tribal Representative)[80]

The Lower Colorado River System Conservation and Efficiency Program

The Colorado River system has been in severe drought since 2000. For the past decade, the Department of the Interior, the Lower Basin states, several Tribes, and various water agencies have signed agreements to conserve water, improve efficiency, and reduce overall demand on the system. Many of these agreements are part of the Lower Colorado River System Conservation and Efficiency Program, which began as a pilot project in 2014 and was reconstituted in 2022. One of the goals of the program is to stabilize reservoir levels in Lake Mead and Lake Powell, which are so low that they jeopardize water deliveries and hydroelectric power production. (US Bureau of Reclamation 2026a; Congressional Research Service 2025b) The program creates financial incentives to conserve water through voluntary land fallowing and other measures and to use the conserved water to augment storage in Lake Mead. (US Bureau of Reclamation 2023c)[81]

From 2015 through 2024, seven Lower Colorado River Basin Tribes contributed almost 600,000 acre feet of water to the System Conservation Program. With the exception of the forbearance water provided by the Quechan Tribe, all of the Tribal water assigned to storage in Lake Mead derived from land fallowing on reservation lands in Arizona. See Table 3. The Tribal contributions account for approximately 28 percent of the total contributions to the program over the past decade. (US Bureau of Reclamation 2025a)[82]

[80] From 2022 through 2024, farmers within the Fort Yuma Reservation have transferred an average of 256 afa of conserved water to MWD. In contrast, contributions from growers within BWD have averaged 4,424 afa over this same period. (US Bureau of Reclamation 2023b, 2024a, 2025c)

[81] In a 2023 letter soliciting contributions to the long-term System Conservation Program, the Bureau of Reclamation offered $330/af for one-year agreements, $365/af for two-year agreements, and $400/af for three-year agreements. (US Bureau of Reclamation 2023c)

[82] From 2015 through 2024, aggregate contributions to the System Conservation Program from Tribes and water agencies in the Lower Basin were 2,125,889 acre feet. Arizona Tribes and agencies contributed 1,245,106 acre feet, while Nevada agencies contributed 91,920 acre feet. In California, contributions from the Quechan Tribe, MWD, the Palo Verde Irrigation District, the Bard Water District, the Imperial Irrigation District, the Coachella Valley Water District, and the San Diego County Water Authority totaled 788,863 acre feet over this same time period. (US Bureau of Reclamation 2025a)

Other water conservation measures—including canal lining, installation of regulating reservoirs, on-farm efficiency programs, deficit irrigation, and urban efficiency improvements—have resulted in substantial additional savings that reduce demand and allow the Bureau of Reclamation to retain more water in Lake Mead. (Colorado River Board of California 2023; Grenier and Bardeen 2024) The Quechan Tribe and the six California water agencies listed above have pledged to contribute a total of 1.6 million acre feet of conserved water to Lake Mead from 2023 through 2026. In 2023 and 2024, they conserved more than 1.2 million acre feet—the equivalent of a 16-foot increase in Lake Mead reservoir levels. (Desert Review 2024)

TABLE 3

Tribal water contributions to storage augmentation in Lake Mead

Year	Quechan	CRIT	Fort McDowell	Gila River	San Carlos Apache	Tohono O'odham	Hopi
2024	13,000	--	13,933	134,302	23,451	--	3,059
2023	13,000	--	13,933	91,319	23,804	--	2,679
2022	--	4,685	13,933	58,837	--	--	--
2021	--	4,685	13,933	40,000	--	--	--
2020	--	50,000	--	--	--	--	--
2019	--	26,885	13,683	--	--	--	--
2018	--	8,859	--	--	--	11,050	--
2017	--	8,572	--	--	--	10,080	--
2016	--	1,156	--	10,000	--	9,817	--
2015	--	--	--	--	--	10,080	--
Total	26,000	96,251	69,415	334,458	47,261	20,867	5,738

SOURCES: US Bureau of Reclamation, Lower Colorado River Water Accounting annual reports.

NOTES: (1) All water contribution data are in acre feet annually. (2) The full names and locations of the Tribes are: Fort Yuma Quechan Indian Tribe (Lower Colorado River); Colorado River Indian Reservation Tribes (Lower Colorado River); Fort McDowell Yavapai Nation (Gila River Basin); Gila River Indian Community (Gila River Basin); San Carlos Apache Tribe (Gila River Basin); Tohono O'odham Nation (Gila River Basin); Hopi Tribe (Northeastern Arizona).

The Future of Tribal Water Rights and Water Use in the Lower Colorado River Basin

The Tribes within the Lower Colorado River Basin have become important actors in regional and interstate water management in the basin. The Quechan Tribe's annual forbearance arrangements with MWD have helped to address regional water shortages in California, and the multi-Tribal contributions of conserved water to the System Conservation Program have made additional water available for users in all three states and have helped to stabilize reservoir levels in Lake Mead and Lake Powell. As the severe drought in the Colorado River Basin continues, the Tribal role is likely to increase—both in magnitude and significance. Two recent developments will influence future Tribal participation in the Lower Colorado River water markets.

The Colorado River Indian Tribes Water Resiliency Act of 2023

In 2023, Congress enacted the Colorado River Indian Tribes Water Resiliency Act, which expressly authorizes the CRIT to lease, exchange, and store conserved water off-reservation. The legislation confirms the Tribes' authority to contribute water to the System Conservation Program for storage in Lake Mead, and it grants additional authority to store and exchange water in the Arizona Water Bank and other groundwater banking facilities within the State of Arizona. It also recognizes the Tribes' rights to lease and exchange water with other parties for use on lands within Arizona. (US Congress 2023)

The statute defines conserved water as "a portion of the decreed allocation that has a recent history of use by the CRIT within the exterior boundary of the Reservation." All leases, exchanges, and storage agreements must be approved by the Secretary of the Interior, acting through the Bureau of Reclamation. The terms of the agreements are negotiable, but no lease or exchange agreement may extend beyond 100 years. The statutory authority to transfer water is limited to the CRIT's federal reserved water rights for the Arizona portion of their reservation (US Congress 2023)

The Act is a significant advancement in the field of Tribal reserved water rights, as it allows the CRIT to make their own decisions about how best to use, and benefit from, their decreed rights. It will also contribute to the federal, state, and Tribal efforts to reduce aggregate demands on the Colorado River by creating incentives for the Tribes to conserve and use water more efficiently and by reallocating the conserved water to other users or to storage in Lake Mead. Moreover, the Act could serve as model for similar legislation authorizing the other Lower Colorado River Tribes to transfer their own conserved water for off-reservation storage, exchanges, and use.

New Forbearance Agreements

The forbearance agreement between the Quechan Tribe and the Metropolitan Water District illustrates the benefits of this type of water transfer arrangement. The Tribe gains revenue from water it has not yet developed and put to use within the Fort Yuma Indian Reservation. This saves the Tribe the costs of expanding its water distribution facilities and irrigated lands and allows it to choose the most profitable way of using its available water supplies. In turn, MWD benefits by diversifying its water portfolio, which provides the option of diverting and using the water within its service area or contributing all or a portion of the water to the System Conservation Program. Moreover, as the agreement to use the forbearance water for the System Conservation and Efficiency Program during 2023-2025 demonstrates, these types of arrangements can enhance water management and availability for all users within the Lower Colorado River Basin as well.

New forbearance arrangements between MWD—or other California water agencies—and the Lower Colorado River Tribes would afford similar reciprocal and systemic benefits. Yet, it is uncertain whether additional forbearance programs would be permissible under existing law, as the 2006 Consolidated Decree only provides express authority for the Quechan Tribe-MWD agreement. (US Supreme Court 2006a, 2006b) Whether the Decree would *prohibit* similar forbearance arrangements involving Tribal water is an open question.

The incentives to clarify or change the governing law may be increasing, however, as the long-term drought in the Colorado River Basin continues to worsen. The 2007 Interim Guidelines that have governed coordinated operations of Hoover Dam and Glen Canyon Dam expired in 2025, and the seven Colorado River basin states have failed to reach an agreement on future allocation of the diminished water supplies. (Cannon 2026; Dance 2026)[83] Although hydrologic, operational, and political conditions are

[83] The deadline for the seven states to reach an agreement on how long-term shortages of water within the Colorado River Basin should be apportioned passed on February 14, 2026. (Cannon 2026; Dance 2026) The Department of the Interior then announced that it plans to issue final "Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead" on October 1, 2026. (US Department of the Interior 2026) The proposed guidelines have deeply divided the Upper Basin and Lower Basin

highly uncertain, the Lower Colorado River Tribes' senior water rights place them in a relatively favorable position. The seniority of their rights guarantees that the Tribes' respective allocations of the water available to the Lower Basin will not be curtailed. This in turn will likely increase the market value of the Tribal water—both for transfer to other users and for system-wide conservation efforts.

The Bureau of Reclamation has issued an Alternatives Report on "Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead," which proposes a variety of alternative strategies to address the myriad problems of drought and water shortage in the system. Included among them is a proposal to work with the Lower Colorado River Tribes to develop "expanded opportunities to conserve, store, and take subsequent delivery of water in and from Lake Mead." (US Bureau of Reclamation 2025d)

The Alternatives Report also articulates the goal of providing "new or enhanced opportunities for Basin Tribes to benefit from their water rights." (US Bureau of Reclamation 2025d) Although the report does not provide details, it does include an operational alternative that "incorporates a storage and delivery mechanism . . . where Basin Tribes could store their water, receive federal protection of that water, and take delivery of or otherwise use their water at a later time, including contributions to the system." The report also contemplates a "Colorado River Protection Pool" to create a "federal supply of water that could be used to mitigate Basin-wide reductions, protect infrastructure, meet federal [water supply] obligations, and provide environmental benefits." The sources of water for the pool would include "*compensated Tribal water* or dedication of an assessment assigned to the creation of new conserved water, both Tribal and non-Tribal." (US Bureau of Reclamation 2025d, emphasis added) If adopted, this alternative could facilitate additional conserved water and forbearance agreements similar to those that the Colorado River Indian Tribes and the Quechan Tribe have undertaken.[84]

Although future management of the waters of the Lower Colorado River is highly uncertain, the "Crisis on the Colorado" could serve as a catalyst for a new conception of Tribal water rights. The Lower Basin states would benefit from increased Tribal contributions to stabilize reservoir levels in Lake Mead and Lake Powell. The Bureau of Reclamation and the various water agencies that receive water from the Colorado River would gain operational flexibility, both for direct water supply and for their respective responsibilities in meeting the goals of the System Conservation Program or a broader Colorado River Protection Pool. And the Tribes would have greater opportunities to strategically deploy their water resources.

The Lower Colorado River Tribes would gain efficiency in their own water diversions and use, as the Bureau could time releases from the reservoir to better match Tribal demands. The Tribes would obtain carryover storage rights in Lake Mead, which would enable them to make greater use of their respective water entitlements. And, with expanded opportunities to transfer water, they would be able to capture at

---

states. (James 2026) As this report goes to press, the only real certainty is that the average annual flows of the Colorado River will continue to be inadequate to fulfill all water rights and that collective constructive action to address systemic shortages, operational challenges, environmental quality, and Tribal water rights remains imperative. For an illuminating overview of the "Crisis on the Colorado," see Yale Environment 360 (2019) and Walker (2025).

[84] The Bureau of Reclamation is currently drafting an environmental impact statement for the Post-2026 Operational Guidelines. The Bureau expects to have the final EIS completed by October 1, 2026. (US Bureau of Reclamation 2026b)

least some of the economic value of water that they are currently not capable of using—or that they voluntarily forbear the use of—on their respective reservations. See Table 4.

TABLE 4

Estimated annual economic value of water forgone by the Lower Colorado River Tribes

Tribe	Undiverted Water	Market Value
Colorado River Indian Tribes	169,992 afa	$34.0 million
Fort Mohave	48,471 afa	$9.7 million
Chemehuevi	11,000 afa	$2.2 million
Fort Yuma (Quechan)	7,766 afa	$1.6 million
Total	237,229 afa	$47.5 million

SOURCES: US Bureau of Reclamation, Lower Colorado River Water Accounting annual reports.

NOTES: (1) "Undiverted Water" is the difference between each Tribe's maximum annual diversion rights under the 2006 Consolidated Decree in *Arizona v. California* and the Tribe's actual average annual diversions from 2014-24. (2) The estimate of the Quechan's Tribe's potential undiverted water is reduced from 27,766 afa to 7,766 afa to account for the 13,000 afa of surplus water that it currently transfers to MWD or contributes to the System Conservation Program and the 7,000 afa to which it does not have diversion rights until 2035. (3) The table assigns a $200 per acre foot market value to the undiverted water. This imputed annual market value is based on the approximate current rate ($200/af) that MWD pays for water it receives under its forbearance agreement with the Quechan Tribe. The $200 per acre foot imputed value is also in the middle range of the prices of conserved water that the CRIT transferred to the US Bureau of Reclamation and the Arizona Department of Water Resources from 2016 through 2022. (Colorado River Indian Tribes 2019; Arizona Department of Water Resources 2019; US Bureau of Reclamation 2021; Congressional Research Service 2025b).

The Legacy of Arizona v. California

The Supreme Court's quantification of the Lower Colorado River Tribes' federal reserved water rights in *Arizona v. California* was significant both for the Tribes and for subsequent litigation and Tribal water rights settlements. The Court confirmed the principles of the *Winters* doctrine, including its core holding that the Tribes are entitled to enough water from river "to satisfy the future as well as the present needs of the Indian Reservations." (US Supreme Court 1963) Although the Court quantified the Tribes' water rights based on the "practicably irrigable acreage" standard, its purpose was to ensure that the Tribes have rights to enough water to establish self-sustaining communities within their respective reservations. Indeed, the 2006 Consolidated Decree has proved to be capacious enough—both by its own terms and in practice—to enable the Tribes to build diverse and dynamic modern economies.

The Lower Colorado River Tribes also have become important actors in the multifaceted process of managing the waters available to the lower basin. This is a consequence of the quantities of water allocated to the Tribes in *Arizona v. California,* the seniority of these rights, and the willingness of the Tribes and other parties to explore new uses of some of their water to benefit both themselves and the Lower Colorado River water supply system itself. It is also a recognition of the Tribes' authority to determine how best to use their lands and water resources and to participate in regional water management decisions as sovereign governmental entities.

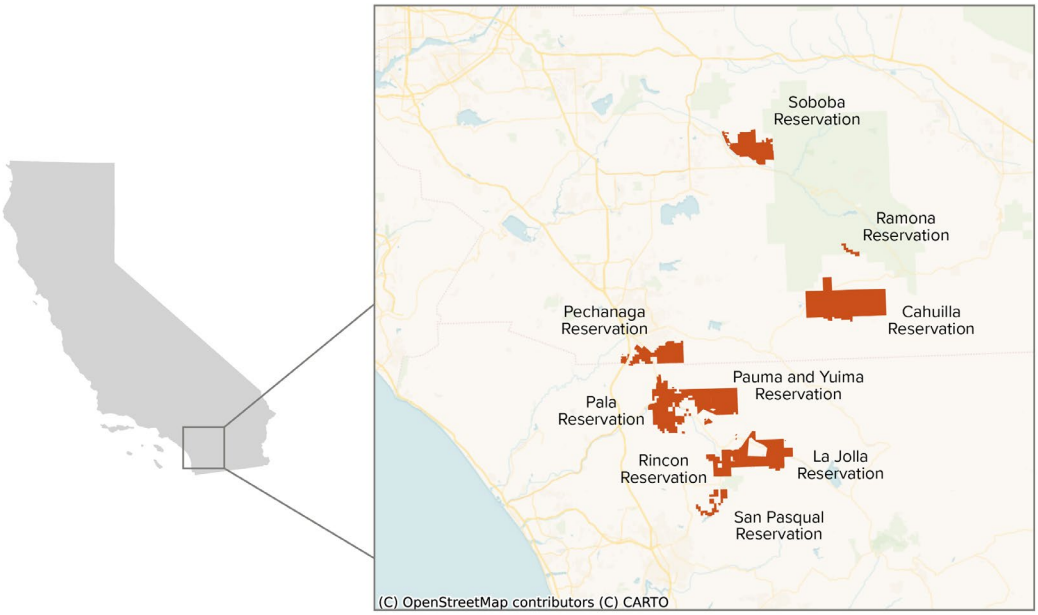
Part 4: The "Mission Indian" Settlement Acts

Seven Southern California Tribes have quantified federal water rights that have been confirmed by settlement agreements and Acts of Congress. The first of these—involving the La Jolla Band of Luiseño Indians, the Pauma Band of Luiseño Indians, the Rincon Band of Luiseño Indians, the Pala Mission Indians, and the San Pasqual Band of Mission Indians—recognize Tribal rights to imported water and expressly preserve the Bands' federal reserved rights. The other two settlement agreements and confirming legislation—to which the Soboba Band of Luiseño Indians and the Pechanga Band Luiseño Mission Indians, respectively, are parties—quantify the Bands' water rights based on the federal reserved rights doctrine. For all three settlements, Congress has authorized funding to secure the Tribal water and to facilitate implementation of the other terms of the agreements.

The seven Bands inhabit relatively small reservations located in San Diego and Riverside Counties. See Figure 7. They are commonly known as "Mission Indians," because their ancestral lands were seized by the Spanish for incorporation into Mission San Diego de Alcala, Mission San Luis Rey, and Mission San Juan Capistrano, whose vast landholdings covered most of the Southern California coastal plains, inland valleys, and coastal mountains.

FIGURE 7

The Mission Indian reservations with confirmed federal water rights



SOURCE: Reservation boundaries are obtained from the US Bureau of Indian Affairs. Basemap features from OpenStreetMap contributors under the Open Database License.

NOTE: This map shows the reservations of the seven Mission Indian Bands with water rights that have been quantified by settlement agreements and authorizing federal legislation. These are the five San Luis Rey Bands—the La Jolla, Pala, Pauma, Rincon, and San Pasqual—and the Soboba and Pechanga Bands. The map also shows the location of the Ramona Reservation and the Cahuilla Reservation whose federal reserved water rights have been confirmed by judicial decree, but which have not yet been quantified.

Pre-Contact History and Establishment of the Reservations

The Acjachemen (Juaneño), Payómkawichum (Luiseño), and Kuupangaxwichem (Cupeño) Tribes lived on the beaches, coastal plains, and inland river valleys from the Santa Ana River southward to the Escondido River. Their lands abutted those of the Tongva to the north, the Cahuilla to the east, and the Kumeyaay to the south. See Figure 3. These First Peoples of Southern California built their villages along the region's waterways—from the beaches and estuaries, to the slow-moving rivers and wetlands of the coastal plains, and up into the foothills, mountain valleys, and headwater streams. They shared a common language, and they traded extensively—both among themselves and with neighboring Tribes and with those as distant as the Lower Colorado River. (Heizer and Elsasser 1980; Frausto 2024)[85]

During the period of conquest and settlement by the Spanish, a number of Juaneño, Luiseño, Cupeño, Cahuilla, and Kumeyaay People were conscripted to build and to work at the missions. Others were forced to work on the vast mission agricultural lands that extended along the coast and more than 100 miles inland—lands that the Spanish had taken from the native inhabitants. When the Mexican government abolished the mission system, it returned some of these lands to the Mission Indians—in a few instances creating Indian pueblos. Most of the former mission lands remained under non-Indian control, however, as the Mexican government converted the agricultural lands into ranchos and granted title to this property to its own citizens. Although these grants were made subject to the Mission Indians' right of prior occupancy and continued use, these conditions were seldom honored. (Wood 2008)

The encroachments onto the ancestral lands accelerated after the Gold Rush and California statehood. Two of the treaties that the United States Senate refused to in 1852 would have provided protected areas for the Tribes. Instead, they became fragmented as their members were displaced from their villages, fields, and hunting and fishing grounds. Some of the survivors took sanctuary in the remote mountain watersheds, and it was there that most of the reservations were created. (Jackson 1892; Shipeck 1978)

Between 1870 and 1910, the United States established 32 reservations for the Mission Indians and other Southern California Tribes. (Shipeck 1978) All but three of these reservations are located in San Diego and Riverside Counties. As noted above, seven of these Tribes have federal water rights that are recognized by settlement agreements and Acts of Congress. See Table 5.

[85] The Acjachemen, Payómkawichum, Kuupangaxwichem, and Cahuilla were part of the Cupan subgroup of the Takic language family of Uto-Aztecan. The Kumeyaay were part of the Yuman language group spoken by the Quechan and Cocopah Tribes of the lower reaches of the Colorado River and Delta. The modern names of the first three Tribes—the Luiseño, Juaneño, and Cupeño—were assigned by the Spanish. (Bugbee 2025)

TABLE 5

Congressionally recognized water rights of the "Mission Indian" reservations

Tribe and Reservation	Date of Legislation	Quantified Water Rights (afa)	Water Basin	Sources of Settlement Water	Federal Appropriations	Additional Monetary Payments
La Jolla, Pauma, San Pasqual, Rincon, and Pala Bands	1988 2016	16,000	San Luis Rey River	"Supplemental" Imported Water	$30 million	$70 million
Soboba Band	2008	9,000	San Jacinto River	Native Groundwater and Imported Water	$21 million	$18 million
Pechanga Band	2016	4,994	Santa Margarita River	Native Surface Water, Native Groundwater, and Imported Water	$30 million	- 0 -

SOURCES: US Congress (1988, 2008, 2016).

NOTES: (1) The San Luis Rey River Indian Water Authority manages the water supplies for the La Jolla, Pauma, San Pasqual, Rincon, and Pala reservations. (2) The San Luis Rey settlement agreements and authorizing legislation grant the five Tribes 16,000 afa of "supplemental" imported water. The agreements and legislation expressly preserve the Tribes' federal reserved water rights, which remain unquantified, as well as their rights to use other surface water in the San Luis Rey River basin and native groundwater underlying their respective reservations. (3) "Native Surface Water" and "Native Groundwater" is water that originates in the water basin defined in Column 4. "Imported Water" means surface water that is imported into the basin for direct use or storage in local groundwater basins.

These agreements, and the confirming federal legislation, all recognize that the Tribes had made extensive use of the waters on their ancestral lands—to supply their homes and villages, to irrigate crops, to hunt and fish, to produce goods for trade, and for religious and ceremonial purposes. These documents also acknowledge that the Tribes lost their ancestral water rights when they were displaced and forcibly removed to reservations in the late 19th and early 20th centuries. Indeed, continuing diversions of surface water and extractions of groundwater by non-Tribal users depleted even those sources that remained available to the Tribes after they were relocated to their respective reservations.[86]

The San Luis Rey Indian Reservations Water Rights Settlement Act (1988)

The San Luis Rey Indian Reservations are comprised of the reserved lands of five Tribes: the La Jolla Band of Luiseño Indians, the Pauma Band of Luiseño Indians, the Rincon Band of Luiseño Indians, the Pala Mission Indians, and the San Pasqual Band of Mission Indians. These Tribes' ancestral lands included the watershed of the San Luis Rey River or, for the San Pasqual, the adjacent watershed of the Santa Isabel Creek, a tributary of the San Dieguito River. The Tribes used these waters from time immemorial, and they possessed federal reserved water rights based on the creation of their respective reservations. See Text Box 2.

[86] There are several Bands of Mission Indians that do not have reservation lands and which remain unrecognized by the United States. One of these is the San Luis Rey Band of Mission Indians, whose ancestral village was located along the lower reaches of the San Luis Rey River at what became the site of Mission San Luis Rey. For an account of the Band's efforts to secure federal acknowledgement, see Chilcote (2024).

Box 2: Establishment of the San Luis Rey Mission Indian Reservations

La Jolla Reservation (1875). The La Jolla Reservation was created by executive orders issued by President Ulysses S. Grant in 1875 and 1876 as a protected area for the La Jolla Band of Luiseño Indians. Some of the reservation land was returned to the public domain in 1877, and the reservation was reestablished in 1892 under the Mission Indian Relief Act. The reservation covers approximately 10,000 acres along the upper reaches of the San Luis Rey River on the southern slopes of Palomar Mountain. It is home to a population of 221. (La Jolla Band of Luiseño Indians n.d.)

Rincon Reservation (1875). The Payómkawichum (Rincon) People inhabited a wide swath of Luiseño ancestral lands from the ocean and coastal plain of the San Luis Rey River to its mountain headwaters. The Rincon Reservation was created by executive order in 1875. It was increased in size in 1881 and reestablished in 1892. Today, the reservation includes 4,725 acres along the upper San Luis Rey River, downstream of the La Jolla Reservation. It has a population of 1,059. (Rincon Band of Luiseño Indians n.d.)

Pauma Reservation (1875). The Pauma Reservation was the third created by executive order in 1875, and it too was reestablished in 1892. The reservation is located in the upper watershed of the San Luis Rey River system where many Luiseño Indians had migrated after being displaced from their farmland, grazing land, and fishing grounds downriver. Today, the reservation covers 5,877 acres and has a population of 132. The reservation includes two small tracts of land to the east, which are known as the Yuima Reservation. (Pauma Band of Luiseño Indians 2024)

Pala Reservation (1875). The Pala Reservation was created in 1875 and was reestablished in 1891 under the Mission Indian Relief Act. It was originally designated as a home for landless Luiseño and for the surviving members of the Kuupangaxwichem People, whom the Spanish named Cupeño. The Cupeño were a small Tribe, whose ancestral lands included 6,400 acres of mountainous lands in the upper watershed of the San Luis Rey River system. They were removed from their lands by court order. The Cupeño call their removal to the Pala Reservation their Trail of Tears." Today, the reservation includes 12,273 acres in the upper San Luis Rey watershed just downstream of the Pauma Reservation. It is home to 924 Tribal members. (Pala Band of Mission Indians 2026)

San Pasqual Reservation (1910). The San Pasqual People were a band of Kumeyaay Indians who lived along Santa Ysabel Creek, which is a tributary of the San Dieguito River. The Spanish forced them from their lands to work at Mission San Diego de Alcala. Following the abolishment of the mission in 1833, the Mexican government created San Pasqual Pueblo as a home for displaced Kumeyaay. In the early years of California statehood, however, the pueblo lands were overrun by squatters and other settlers, and the San Pasqual again lost their lands in the Santa Ysabel Valley. To protect the Native inhabitants, President Grant declared the pueblo lands to be an Indian Reservation in 1870. He rescinded this order the following year, however, in response to white opposition. The United States created a new reservation for the Tribe in 1910 in the more remote foothills of the San Luis Rey River basin. Today, the reservation consists of five, non-contiguous parcels that total about 1,380 acres. It has a population of 1,153. (San Pasqual Band of Mission Indians 2018)

The reservations provided residual protection for these remnants of—or, in the case of the Pala and San Pasqual, replacements for—the Tribes' ancestral land base. Although the Tribes initially had enough water for their domestic and irrigation uses, their water resources became threatened by two actions. In 1895, the Escondido Mutual Water Company and the Escondido Irrigation District began diverting water from the San Luis Rey River for municipal and irrigation uses on the coastal plains of northern San Diego County. (San Luis Rey Indian Water Authority n.d.) The point of diversion for the project was within the

La Jolla Reservation, and the Escondido Canal crossed the La Jolla Reservation, Rincon and San Pasqual reservations. (US Supreme Court 1984)

Then, in 1901, the US Supreme Court rejected the Cupeño Indians' claims to aboriginal title to Warner's Ranch, 44,332-acre former Mexican land grant in the Valle de San Jose, which encompasses the headwaters and artesian springs that formed the San Luis Rey River and Santa Isabel Creek. (US Supreme Court 1901; Akins and Bauer 2021) This decision facilitated the construction of Henshaw Dam and reservoir in 1923, which allowed greater diversions of San Luis Rey River water to municipal, commercial, and irrigation uses in the rapidly developing coastal plain around Escondido. The Vista Irrigation District (VID)—which supplies water to the cities of Vista, Escondido, and several other communities in San Diego County—acquired Warner's Ranch and water rights in 1946. (Association of California Water Agencies 2023)

As downstream demands for water increased during the post-World War II development boom, Escondido and Vista diverted more water from the San Luis Rey River and supplemented the available surface water with groundwater from beneath Warner's Ranch. The increased diversions depleted river flows by an average of 90 percent. The Tribes suffered from water shortages, destruction of riparian habitat and fisheries, frequently dry riverbeds, and loss of groundwater recharge within their reservations. (San Luis Rey Indian Water Authority n.d.)

The five San Luis Rey Mission Bands sued Escondido and VID in 1969, claiming violations of the Mission Indian Relief Act of 1891, breach of contract, trespass, and unlawful diversion and use of 16,000 afa of Tribal water. After 15 years of litigation, including a 1984 US Supreme Court decision that rejected some of the Bands' claims,[87] the parties agreed to negotiate a settlement that they would submit to Congress for its approval and authorization. (San Luis Rey Indian Water Authority n.d.) With significant assistance from Representative Ron Packard, whose congressional district included the San Luis River system and the areas served by Escondido and VID, negotiations began in 1984. President Ronald Reagan signed the San Luis Rey River Indian Water Rights Settlement Act into law in November 1988.

The statute acknowledged that there was insufficient water in the river system to fulfill the needs of all parties, and it recognized that the uncertainty over the Bands' water rights had "severely impaired [their] efforts to achieve economic development on their respective reservations [and] contributed to the continuation of high rates of unemployment" among their members. It directed the Secretary of the Interior to arrange for the development or acquisition of 16,000 afa of "Supplemental Water" for the "benefit of the Bands and the local entities."[88] In addition, the statute authorized the appropriation of $30

[87] The Supreme Court held that the La Jolla, Rincon, and San Pasqual Bands' claims that the pipeline easements across their reservations violated the Mission Indian Relief Act (MIRA) were preempted by the Federal Power Act of 1920. Section 8 of MIRA declares that private contracts to construct canals, pipelines, and other water conveyance facilities across Tribal reservation lands "shall not be valid unless approved by the Secretary of the Interior." The Court ruled that, although this section "gave the Bands extensive authority to determine whether to grant rights-of-way for water projects," that authority did not include the power to override Congress' subsequent decision in the Federal Power Act to vest in the Federal Energy Regulatory Commission the power to determine which "Tribal lands, could, upon compliance with the provisions of the FPA, be utilized to facilitate licensed hydroelectric projects." (US Supreme Court 1984)

[88] The Act stated that the Supplemental Water could come from one of three sources: (1) development of additional water from the federal public lands outside the service area of the Central Valley Project; (2) conserved water produced by lining of the All-

million to establish a San Luis Rey Tribal Development Fund, and it created the San Luis Rey River Indian Water Authority as a "permanent inter-tribal entity" with authority to manage the Supplemental Water and to administer the Development Fund of the benefit of the five Bands. (US Congress 1988a)[89]

The source of the Supplemental Water was determined by separate negotiations among the five Bands, the United States, the Imperial Irrigation District (IID), the Coachella Valley Water District (CVWD), the Metropolitan Water District (MWD), and the San Diego County Water Authority (SDCWA), which culminated in the Quantitative Settlement Agreement (QSA) of 2003. Among other features, the QSA provided that IID and CVWD would conserve approximately 96,000 afa of Colorado River water by lining the All-American and Coachella canals. The QSA allocated 16,000 afa to the Indian Water Authority, with the balance going to SDCWA, which would pay the costs of the canal lining. (San Diego County Water Authority n.d.; San Luis Rey Indian Water Authority n.d.)[90]

The transportation of the Supplemental Water from the Colorado River to the Indian Water Authority is somewhat complicated. Pursuant to the "Supplemental Water Agreement" and the "Conveyance Agreement," both signed in 2003, the US Bureau of Reclamation releases water from Lake Mead and delivers it to Lake Havasu. MWD then diverts the water into its Colorado River Aqueduct and transports it to northern San Diego County. From there, SDCWA conveys the water through its facilities to the Valley Center Municipal Water District, which wheels the water to the San Pasqual Reservation. The United States collects funds from the Indian Water Authority for the conveyance of the water to northern San Deigo County, which the government then pays to MWD. The Indian Water Authority pays SDCWA directly for its conveyance of the water. (San Luis Rey Indian Water Authority 2003a, 2003b)

The San Pasqual Band is the only Tribe that currently has the infrastructure needed to take physical delivery of the Supplemental Water. The Band receives its water from the Valley Center Municipal Water District, which wheels it from the SDCWA facilities to the San Pasqual Reservation.[91] The balance of the Supplemental Water goes to Escondido and VID as part of their water service from SDCWA. The two water agencies pay the Indian Water Authority for this water at the same price charged by SDCWA. The Conveyance Agreement provides for the delivery of Supplemental Water to the other four Bands, at their request, if infrastructure to deliver the water is developed. (San Luis Rey Indian Water Authority 2003b)

American Canal (which was authorized by the same legislation); or (3) acquired water from the Metropolitan Water District of Southern California. (US Congress 1988a)

[89] Congress declared that the overall purposes of the legislation were "to provide for the settlement of the reserved water rights claims of the [five Tribes] in a fair and just manner which—(1) provides the Bands with a reliable water supply sufficient to meet their present and future needs; (2) promotes conservation and the wise use of scarce water resources in the upper San Luis Rey River System; (3) establishes the basis for a mutually beneficial, lasting, and cooperative partnership among the Bands and the local entities to replace the adversary relationships that have existed for several decades; and (4) fosters the development of an independent economic base for the Bands." (US Congress 1988a) For detailed accounts of the history of the settlement negotiations and legislation, including first person accounts, see San Luis Rey Indian Water Authority (2024).

[90] The primary purpose of the QSA was to reduce the California water agencies' use of Colorado River water by 800,000 afa over the ensuing 14 years to enable California to stay within its 4.4 million afa allocation of the 7.5 million afa available to the three Lower Colorado River Basin states. See Part Three. For a description of the conservation and water transfer policies of the QSA and other agreements, see San Diego County Water Authority n.d.

[91] This arrangement is especially important for the San Pasqual Band, because it is the only one of the five Bands that does not have access to groundwater. (San Luis Rey Indian Water Authority 2022, 2024)

The settlement agreements and legislation afford both the Indian Water Authority and the two local water agencies (Escondido and VID) flexibility to distribute and use the Supplemental Water. As just described, the Indian Water Authority may sell Supplemental Water that it determines to be surplus to its own needs to Escondido and VID. This is an important source of revenue for the Bands. Similarly, the two agencies may supply water to the Indian Water Authority in excess of its 16,000 afa entitlement at the same rates. (San Luis Rey Indian Water Authority 2022a) In addition, the settlement agreements and legislation recognize the five Bands' rights to continue to use native surface water in the San Luis Rey River basin and native groundwater from the aquifers that underlie their respective reservations. (US Congress 1988a) As four of the Bands are currently unable to use the imported Supplemental Water, this flexibility is essential.

Although the water rights settlement agreements and legislation were highly detailed, they left open the question whether the settlement had recognized and quantified the five Bands' federal reserved water rights or whether it had replaced those rights with the grant of Supplemental Water. In 2016, Congress answered this question by amending the 1988 Settlement Act to declare:

"Notwithstanding any other provision of law, including any provisions in this Act, the Bands had, have, and continue to possess federally reserved rights and other water rights held in trust by the United States." (US Congress 2016)

The amendment makes clear that the Supplemental Water is, as its name connotes, a supplemental source of water for use by the parties to the settlement. It is not a final quantification of the Bands' federally reserved water rights, nor does it replace those rights. The Bands retain their full rights to local surface water and groundwater, including those under the *Winters* doctrine.

Based on these agreements and clarifying legislation, the 38-year litigation between the five Bands and Escondido and VID was dismissed in 2017. At that point, the Indian Water Authority "received approximately $100 million to support its future operations and to provide funds for economic development on the five reservations." Of this amount, $30 million (plus interest) came from the funding appropriated by Congress in the Settlement Act. MWD paid the balance to compensate the Tribes for the Supplemental Water MWD received before the court's judgment dismissing the litigation became effective. (San Luis Rey Indian Water Authority 2022a)[92]

The five Bands that are parties to the San Luis Rey River Indian Water Rights Settlement have different histories, water supply needs, and contemporary economic policies. Nonetheless, the settlement agreements and authorizing legislation have been of great individual and collective benefit. The settlement negotiations helped to identify common interests and fostered collective action. Creation of the Indian Water Authority has enabled the Bands to continue to work cooperatively in pursuit of shared goals. This has included regional water management of the water resources available to the Bands, including conjunctive management of the imported Supplemental Water and local surface water and groundwater resources.

[92] The Indian Water Authority also received a $15 million grant from the California Department of Water Resources in 2022 for a variety of water infrastructure projects on the five reservations. (California Department of Water Resources 2022a)

These waters support diverse residential, commercial, agricultural, and tourist economy on the five reservations. Revenues from the settlement and water sales have allowed the Bands to fund a broad array of projects, including housing, water infrastructure, wastewater treatment, agricultural and timber production, golf courses, resorts, restaurants, casinos, campgrounds, a brewery, and a racetrack. They also have enabled the Bands to reacquire portions of their ancestral lands and to restore habitat in the upper watersheds of the Escondido and San Luis Rey Rivers. These developments in turn have helped to protect and enhance traditional, cultural, and ceremonial uses of the waters. (San Luis Rey Indian Water Authority 2022b, 2024)

The Soboba Band of Luiseño Indians Water Rights Settlement Act (2008)

The Soboba Band of Luiseño Indians are descendants of two ancestral Tribal groups. The Soboba were a band of Cahuilla People who lived in the San Jacinto River Valley and on the uplands that formed the slopes of the San Jacinto Mountain Range. They irrigated melons, beans, corn, and fruit trees with water from river and its tributaries, as well as from perennial artesian springs. The Soboba also tended livestock, and they were renowned for their pottery. (Heizer and Elasser 1980; Soboba Band of Luiseño Indians. n.d.)

The Soboba People's lives were irreversibly changed by the expansion of San Luis Rey Mission lands eastward into their territory. In 1815, the Spanish established Rancho San Jacinto, which included the San Jacinto River Valley and much of the surrounding lands inhabited by the Soboba. The cattlemen brought with them Payómkawichum (Luiseño) People taken from their own ancestral lands to work as conscripted laborers on the rancho.[93] Over time, many of the Soboba and Luiseños intermarried. (Soboba Band of Luiseño Indians. n.d.)

Following secularization of the missions and their landholdings, the Mexican government granted title to Rancho San Jacinto Viejo to José Antonio Estudillo in 1842. The Estudillo family honored the Soboba Tribe's prior rights of occupancy, and members of the Tribe continued to live and farm in the valley. Beginning in 1868, however, Estudillo's heirs began subdividing and selling portions of the rancho. (McShane 1969) In 1887 a large majority of the rancho lands—extending from the San Jacinto River Valley to the Garner Valley in the San Jacinto Mountains—were sold to the to the Hemet Land Company and the jointly owned Lake Hemet Water Company. These lands included the entire watershed of the upper San Jacinto River and its tributaries. The Lake Hemet Water Company constructed Lake Hemet Reservoir on the south fork of the San Jacinto River in 1891. (Lake Hemet Municipal Water District 2025)

In an effort to protect the Soboba and Luiseño People from these incursions, President Chester Arthur created the Soboba Indian Reservation in 1883. The reservation covered 3,172 acres and included Soboba Village along the river and the adjacent hills. (Soboba Band of Luiseño Indians n.d.) President Grover Cleveland removed lands from the reservation in 1886 and 1887. Under authority of the Mission Relief Act, President Benjamin Harrison reestablished the reservation in 1891. This executive order added the

[93] As noted above, the Spanish called the Native People who lived on the lands surrounding Mission San Luis Rey "Luiseño Indians."

watersheds of Indian Creek and Poppet Creek, which are tributaries of the San Jacinto River, and increased the size of the reservation to 4,310 acres. (US Indian Claims Commission 1976)

During this period, upstream diversions by the new landowners and other settlers severely diminished flows in the San Jacinto River, creating shortages for Tribal domestic and agricultural uses. The Tribe's gravity-flow irrigation system stopped working in 1899. The federal government installed a well system on the reservation 1909, but the upstream surface diversions and groundwater extractions by the non-Indian landowners were depleting the aquifer as well. By 1920, the river was dry except during winter and spring run-off. By the early 1930s, the Tribe's wells began to fail. (US Indian Claims Commission 1976; Soboba Band of Luiseño Indians n.d.)

Tribal members who lived in the uplands portions of the reservation continued to have access to water from Indian Creek and Poppet Creek and from artesian springs in the upper watersheds. These supplies were depleted, however, by the Metropolitan Water District's construction of the Colorado River Aqueduct in 1933. The project included a 13-mile tunnel beneath the San Jacinto Mountains that was approximately 1,500 feet downgradient of the waters of the San Jacinto River system. The excavation for the tunnel drew about 220,000 acre feet of water into the construction area and onto adjacent lands. These water losses continued after the aqueduct and tunnel began operations in 1941. The Department of the Interior estimated that the losses of groundwater from the aquifer that underlies the Soboba Reservation ranged from 3,000 afa to 8,000 afa. (US Indian Claims Commission 1976)

In 1950, the Soboba Tribal government sued the United States in the Indian Claims Commission for damages for its failure to protect the reservation's water resources. Twenty-six years later, the commission ruled in favor of the Tribe. (US Indian Claims Commission 1976) In 1991, the Tribe and the United States reached a settlement. As part of the settlement, the government agreed to assist the Tribe in its negotiations with the Lake Hemet Municipal Water District (LHMWD) and the Eastern Municipal Water District EMWD), which divert surface water and groundwater from the upper watershed of the San Jacinto River to serve Hemet, San Jacinto, and other communities. (Soboba Band of Luiseño Indians n.d.)[94]

The Soboba Band filed suit against the Metropolitan Water District in 2000 to adjudicate MWD's liability for removing groundwater from the basin during the construction of the Colorado River Aqueduct. MWD subsequently joined the negotiations between the Tribe and the two municipal water districts. Although MWD holds no water rights in the San Jacinto River basin, its inclusion served as a catalyst for the eventual settlement agreement among the parties. (Soboba Band of Luiseño Indians n.d.) President George W. Bush signed the Soboba Band of Luiseño Indians Water Rights Settlement Act into law in

[94] LHMWD was formed in 1955 to purchase the lands, water rights, and other assets of the Lake Hemet Water Company. The district has expanded over the years and now serves approximately 14,500 customers in a 26-square mile area that includes portions of the cities of Hemet and San Jacinto and adjacent unincorporated areas of Riverside County, including the Garner Valley in the San Jacinto Mountains east of Lake Hemet. Most of the district's water supply is from the San Jacinto River basin. (Lake Hemet Municipal Water District 2025) EMWD was created in 1950 for the primary purpose of joining MWD and thereby receive Colorado River water (and later water from the State Water Project). Although almost all of its supplies come from MWD, the district obtains some water from wells in the upper San Jacinto watershed. The district is the sixth largest retail water service provider in California, and it delivers water to about one million customers in western Riverside County and northern San Diego County. (Eastern Municipal Water District 2025)

2008. The legislation incorporated the terms of the 2006 settlement agreement reached by the parties and authorized federal funding. (Soboba Band of Luiseño Indians et al. 2006)

The legislation recognized the Soboba Band's federal reserved rights to the waters of the San Jacinto River basin and confirmed LHMWD's and EMWD's acknowledgment of the Tribe's "prior and paramount right" to pump 9,000 afa of native or recharged groundwater from the basin.[95] The Tribe may apply this water to any uses "it deems advisable" within its reservation, as well as on lands it owns that are contiguous to the reservation or within the groundwater basin. In addition, the Tribe may lease or exchange water with other users within the groundwater recharge management area in the upper watershed of the San Jacinto River system. (Soboba Band of Luiseño Indians et al. 2006; US Congress 2008)[96]

In addition, Congress appropriated $11 million create the "Soboba Band of Luiseño Indians Water Development Fund" to finance Tribal water supply and sewer infrastructure. It also appropriated $10 million for establishment of a "San Jacinto Basin Restoration Fund" to help pay for the construction of groundwater recharge facilities. The two municipal water districts administer this project pursuant to a water management plan approved by the Soboba Tribal government. The goal of the plan is to achieve sustainable groundwater use of the native and imported waters of the basin. To this end, the districts purchase an average of 7,500 afa of Colorado River water from MWD to recharge the aquifer. The imported water program terminates in 2035, unless renewed by the parties. (Soboba Band of Luiseño Indians et al. 2006; US Congress 2008)

In accordance with the settlement agreement and legislation, LHMWD and EMWD paid the Soboba Band $18 million to fund economic development within the reservation. MWD and EMWD also conveyed title to approximately 128 acres of land near Diamond Valley Reservoir to the Soboba Band for commercial development. In return, the Tribe pledged to grant up to 100 acres of reservation land to its neighboring communities for endangered species habitat. (US Department of the Interior 2011)

The Obama Administration initially refused to transfer the federal funds to the Tribe and to the water agencies. Under pressure to honor its commitments, the United States completed its obligations under the Settlement Act in 2011. (US Department of the Interior 2011)

Today, the Soboba Reservation encompasses approximately 7,900 acres, 400 of which are devoted to residential use. There are more than 1,600 enrolled Tribal members, about half of whom live on the reservation. The Soboba Band uses its water for a variety of uses within their reservation, including domestic water service, irrigation, commercial uses, and ceremonial practices. The Tribal government has created the Soboba Economic Development Corporation to manage the economic development funds and other revenues. Completed projects include the Soboba Casino Resort, a shopping center, grocery and

[95] In the 2006 settlement agreement, the Band agreed to limit its groundwater extraction to 4,100 afa for the first 50 years of the agreement. (Soboba Band of Luiseño Indians et al. 2006) The other 4,900 afa will be committed to groundwater recharge. (US Department of the Interior 2011)

[96] The leases may be short- or long-term (up to 100 years). The settlement agreement also stipulates that no contract for the transfer of Tribal water shall "provide for permanent alienation of any portion of the Tribal Water Right." (Soboba Band of Luiseño Indians et al. 2006)

drug stores, a beverage company, and Legacy Bank—the only Tribally owned bank in California. (Soboba Band of Luiseño Indians 2025)

The Pechanga Band of Luiseño Mission Indians Water Rights Settlement Act (2016)

The Pechanga Band of Indians are descendants of the Payómkawichum People (the People of the West), as are their neighbors in the adjacent San Luis Rey River system—the Pauma, Pala, Rincon, San Luis Rey, La Jolla, and Soboba. The Pechanga inhabited the Temecula Valley for thousands of years before contact and colonization. They built villages along Tatámay, which the Spanish named the Santa Margarita River. They fished and hunted, irrigated crops, created pottery, and were part of the trading network that extended from the Pacific Coast to the Colorado River.

Like the other Payómkawichum Bands, the Pechanga were conscripted to work at Mission San Luis Rey and Mission San Juan Capistrano during the early years of Spanish colonization.[97] As the mission lands expanded eastward, the remaining Pechanga were forced to work on their own ancestral lands under the Spanish peonage system. Many Tribal members died of disease, malnutrition, and violence. The survivors moved further east and south into the foothills of the Palomar Range. Following secularization of the missions, some Pechanga returned to their lands along the Santa Margarita River and its tributaries, and they reestablished Pechanga Village at the confluence of Murrietta and Temecula creeks. (Pechanga Band of Indians 2025a)

In the 1840s, however, the Mexican government made three land grants that covered much of the Pechanga People's ancestral lands. One of these grants—for the 2,200-acre Little Temecula Rancho—included Pechanga Village and adjacent farmlands. In 1859, a dispute arose between the successors-in-title to the grant and the Pechanga over their respective rights to the land. The court recognized the Band's rights to Pechanga Village and access to the river, but it granted some Pechanga farmlands to the competing claimants.

This arrangement lasted until 1873, when a new group of ranchers acquired a majority of the Little Temecula Rancho and the two adjacent ranchos. The new owners filed suit in federal court to confirm their title to the ranchos. After the court ruled in their favor, the San Diego County Sheriff and a posse of armed men evicted the members of the Tribe from Pechanga Village and their other remaining lands. Some Tribal members moved to lands in the foothills owned by John Magee, one of Temecula's early American settlers, and his wife, Custoria Nesecat, who was a Pechanga woman.

Others moved further south into Pechanga Canyon, where they established a settlement along Pechanga Creek.[98] The displaced Tribal members lost most of their livestock and personal possessions. In 1882, President Chester Arthur established the Pechanga Indian Reservation to protect the Band and its people

[97] The Spanish named the Santa Margarita River valley "Temecula" and called the native inhabitants the "Temecula Indians." The Tribe did not adopt the name Pechanga until its members were relocated to their existing reservation in 1873. (Pechanga Band of Indians 2026a)

[98] The Tribe and the reservation take their name from the nearby Pechá'a spring. Pechá'anga, means "at Pechaa'a"—"the place where water drips." (Pechanga Band of Indians 2026a)

from further incursions and violence. The reservation was reestablished in 1892 following enactment of the Mission Relief Act. (Pechanga Band of Indians 2026b)

Initially, the Pechanga were able to make do on the new reservation; but a series of droughts in the early 20th century forced many Tribal members to leave the reservation to avoid starvation. In 1907, the federal government purchased an adjacent 235-acre parcel known as the Kelsey Tract, which the Pechanga irrigated with groundwater. This small agricultural production was enough for the remaining members of the Tribe to survive. (Pechanga Band of Indians 2026a)

In 1951, the United States filed a basin-wide adjudication of all water rights in the Santa Margarita River system in which it asserted the federal reserved water rights of the Pechanga Reservation and two other Indian reservations, the Ramona and Cahuilla. After more than eleven years of litigation, the US District Court determined that the Pechanga have federal reserved rights to all surface water and groundwater of the Santa Margarita River system that, "under natural conditions, would be available to the Reservation" in quantities that are "sufficient for the present and future needs of the Indians residing thereon." The priority date of these reserved rights is 1882 for the lands included in the original reservation with later priorities for lands added to the reservation. (US District Court 1962) The court included these findings and legal conclusions in its 1966 consolidated judgment, which is known as the "Fallbrook Decree." (US District Court 1966)[99]

By the mid-1960s, the Temecula Valley was experiencing rapid urbanization, which depleted the surface waters throughout the Santa Margarita River system, transformed Pechanga Creek from a perennial to an intermittent stream, and caused the groundwater table beneath the Pechanga Reservation to decline. In 1975, the Pechanga Tribal government intervened in the Santa Margarita River adjudication to protect its reserved water rights. This led to multi-party, multi-decade negotiations to establish a regional plan for sustainable groundwater management within the basin and to quantify the Pechanga Band's federal reserved water rights.[100] The key parties included the Tribe, the Rancho California Water District (RCWD), the Eastern Municipal Water District, the Metropolitan Water District, and the United States. (Pechanga Band of Luiseño Mission Indians, et al. 2017)[101]

The Pechanga Tribal government signed a groundwater management agreement with RCWD in 2006 and a recycled water agreement with EMWD in 2008. These were followed by a comprehensive water rights settlement agreement and confirming legislation. President Barak Obama signed the Pechanga Band of Luiseño Mission Indians Water Rights Settlement Act into law in December 2016 as part of omnibus water legislation. (US Congress 2016b)

---

[99] The court's findings and judgment also applied to the Ramona and Cahuilla reservations. The history and current status of these federal reserved rights are described below.

[100] The settlement negotiations were delayed in part by concurrent negotiations to settle a class action lawsuit involving the alleged federal mismanagement of approximately 300,000 individual Native American trust fund accounts. (Native American Rights Fund 2025)

[101] RCWA provides water and reclamation services to the cities of Temecula and Murrieta, as well as other unincorporated communities in Riverside County. It obtains its water from three sources: local groundwater (25-40%), imported surface water via MWD and EMWD (60-70%), and reclaimed wastewater (6%). (Rancho California Water District 2016)

The settlement agreement and legislation recognized a Tribal reserved water right of up to 4,994 afa of surface water and groundwater from the Santa Margarita River basin. Consistent with the Fallbrook Decree, the Settlement Act states that this right is to water that, "under natural conditions, is physically available on the Reservation." The settlement was made possible, however, by the availability of imported water—i.e., water derived from sources outside the Santa Margarita River watershed—made available by MWD and EMWD. Thus, the settlement agreement and legislation created a Tribal water portfolio of approximately 1,575 afa from local groundwater from the Wolf Valley sub-basin, 525 afa to 700 afa of recycled water from RCWD and EMWD, and 2,100 afa to 2,275 afa of imported water supplied by EMWD. (US Congress 2016b; Pechanga Band of Luiseño Mission Indians, et al. 2017)

The Tribe may "use, allocate, distribute, and lease" this water for any purpose on the Pechanga Reservation.[102] It also has authority to bank up to 6,000 acre feet as groundwater recharge and storage in the Wolf Valley sub-basin. The Tribe also must provide a "just and equitable allocation" to serve individual allottees (Tribal and non-Tribal) who live within the reservation. Neither the settlement agreement nor the statute authorizes Tribal water to be used or transferred for use off-reservation, however. (US Congress 2016b; Pechanga Band of Luiseño Mission Indians, et al. 2017)

Congress also appropriated approximately $30 million to the Pechanga Tribal government to fund a variety of projects included in the settlement agreement. These include funding of the Tribe's contribution to the construction of new surface water storage facilities and a desalination plant to treat reclaimed water so that it can be used to irrigate crops. The funding also defrays some of the Tribe's costs of acquiring imported water from MWD and EMWD. (US Congress 2016b; US Department of the Interior 2017a)

Today, the Pechanga Band manages its water pursuant to a Tribal water code, which established Pechanga Water Systems as the Tribal water authority. (Pechanga Water Systems 2012) The Tribe's water resources serve a variety of uses. These include domestic water service for approximately 600 residents, commercial water supply for the Pechanga Resort & Casino, irrigation water for the Journey at Pechanga golf course, and service to Tribal government buildings and other small commercial users. There is no irrigation within the reservation other than the golf course and residential gardens. Since 2009, the total demands for water have ranged from 900 afa to 1,400 afa. (Dudek 2024) The Pechanga also continue to use their water resources for religious and ceremonial purposes. (Pechanga Band of Indians 2026a)

[102] An Extension of Service Area Agreement, which was included in the settlement and implementing legislation, expressly authorizes the provision of settlement agreement water to a portion of the reservation that primarily serves commercial uses, including the Pechanga Resort & Casino. (US Congress 2016b; Pechanga Band of Luiseño Mission Indians, et al. 2017)

The Benefits of Negotiated Settlements and Authorizing Legislation

The San Luis Rey, Soboba, and Pechanga settlements provide myriad examples of the benefits of both negotiated resolutions of Tribal water rights disputes and congressional approval and authorization.[103] These benefits include:

- The Bands receive a secure and reliable supply of water in defined quantities and priorities vis-à-vis other water right holders. This allows Tribal water managers to serve current uses within their respective reservations and to plan for future economic development and population growth. These, in turn, help to strengthen Tribal community, Tribal culture, and Tribal sovereignty.
- The settlement agreements and confirming legislation also authorize the Bands to use their water supplies as they determine would best serve their respective community, economic, and environmental interests. In two of the three settlement acts, this includes authority to lease conserved and surplus Tribal water to off-reservation uses. Water transfers are potentially important source of revenue for the Bands. They also can help to augment water supplies for the surrounding communities.
- The Bands also receive significant funding for water supply infrastructure, water quality improvements, and habitat restoration, as well as money to support new housing, public utilities, and other economic development within their respective reservations.[104] The funds included in the settlement agreements and legislation also help to compensate the Bands for past use of, or interference with, water to which they were entitled under their federal reserved water rights.
- The water agencies that participated in the settlements gain greater certainty in managing their own water supplies because their water rights vis-à-vis the Tribes are now defined. The agencies were also able to resolve long-standing disputes with the Tribes over their respective rights to shared water resources. These developments in turn set the stage for more collaborative management of the various sources of water that serve the parties within each watershed.
- Integration of native surface water, native groundwater, imported surface water, treated wastewater, and groundwater recharge and storage will facilitate more efficient regional water management—including compliance with the Sustainable Groundwater Management Act and development of regional water markets—that will benefit all parties.[105]

As noted above, the availability of imported water supplies from the Colorado River was a key factor in all three settlements. By augmenting native supplies, the imported water made the negotiations less of a zero-sum game. Thus, while the settlement agreements and enabling legislation set important precedents, they serve as limited models for future Tribal water rights negotiations where the parties do not have access to imported or other supplemental supplies.

---

[103] For an excellent overview of the benefits, guiding criteria, and political realities of negotiated Tribal water rights settlements, see Cosens (2006) and Leshy (2022). Professor Cosens' article includes lessons drawn from her experience as General Counsel for the Montana Reserved Water Rights Compact Commission. Professor Leshy's article draws in part on his service as Solicitor of the US Department of the Interior.

[104] This funding is essential because Tribes generally lack authority "to tax trust lands and face barriers to fully accessing tax-exempt bond financing, which makes it difficult for them to fund the infrastructure necessary to put their water to use." (Sanchez, Edwards, and Leonard 2022)

[105] Although several Mission Indian Tribes have participated in the formulation of the San Diego Integrated Regional Water Management Plans (San Diego Integrated Regional Water Management 2019), most of the collaborative work to date has been though implementation of the three settlement agreements described in the text.

Coda: The Decreed Water Rights of the Cahuilla and Ramona Reservations

The Cahuilla Band of Mission Indians and the Ramona Band of Cahuilla Indians are descendants of the "Mountain Cahuilla," whose ancestral lands included the western slopes and canyons of the San Jacinto and Santa Rosa Mountains and the area formerly known as the Hamilton Plains. They lived in small communities along Cahuilla Creek in what is now the Anza Valley and among its headwater streams near artesian springs. Because water was scarce and the Mountain Cahuilla's homes and villages were remote from other settlements, they remained relatively unaffected by the Spanish and Mexican occupancy of Alta California. (Bean 1972, 1978; Cahuilla Band of Indians 2025; Ramona Band of Cahuilla Indians n.d.)

This changed following California statehood, as ranchers and small farmers began to displace the Cahuilla from their valley lands. In 1875, President Ulysses S. Grant created the Cahuilla Indian Reservation on Tribal lands surrounding the Paui Village. The Ramona Reservation, located at the site of the Ramona Village, followed in 1891. (Shipek 1978)[106] Both reservations are located in the upper watershed of the Santa Margarita River system described in the preceding section. The headwater streams are small and seasonal, but they were initially adequate to support subsistence farming and domestic uses and to recharge the groundwater basins that underlie the reservations

During the 20th century, the upper watershed underwent extensive development for (non-Tribal) agricultural and residential uses. This development not only brought competing water users to the area. It also diminished the riparian corridors and wetlands that helped to retain and infiltrate rainfall and snowmelt that now runs downstream more quickly.[107] Climate change is exacerbating these water supply and retention problems.[108] Today, the two Tribes are almost entirely dependent on groundwater, which is at continuing risk from overdraft and diminished water quality from agricultural pollutants and residential septic systems. (US Geologic Survey 2020; Stern et al. 2021)

In 1958, the United States claimed federal reserved water rights on behalf of the Cahuilla and Ramona Bands in a comprehensive adjudication of all water rights in the Santa Margaria River System that began seven years earlier. The federal district court recognized the two Tribes' water rights in 1962.[109] The court

---

[106] The United States modified the Cahuilla Reservation on several occasions, adding lands in 1877, 1926, and 1931. Today, the reservation consists of 18,884 acres of which 2,00 acres are held by the Tribe, with the remainder allotted to individual members of the Cahuilla Band. (Southern California Tribal Chairman's Association 2026) The Ramona Reservation, which is located north and upstream of Cahuilla, was originally 560 acres. 80 acres were added in 2022. (Ramona Band of Cahuilla Indians n.d.; SCS Engineers 2024)

[107] These hydrologically functional lands decreased from approximately 91 percent of all lands in the upper watershed 1934 to 85 percent in 2005. During this period, about 5,000 acres of watershed lands were converted to other uses. (US Geological Survey 2020)

[108] A recent study published in the Journal of the American Water Resources Association determined that, in the 30-year period from 1981 through 2010, only four years reached or exceeded the long-term average groundwater recharge. According to the authors, this both highlights the interannual variability and suggests that "ten-year periods of alternating wet and dry periods no longer describe the climatic patterns in this area." The authors concluded that "recharge and runoff do not occur in large amounts every year, and when very wet years occur, most of the water becomes runoff and a lesser component becomes recharge." (Stern et al. 2021)

[109] In this same decision, the court recognized the federal reserved rights of the Pechanga Band of Luiseño Mission Indians, which are described in the preceding section of this report.

determined that portions of both reservations were within the Santa Margarita River system and these reservation lands overlie groundwater basins that are hydrologically connected to that system.[110] The court concluded that, when the United States established the Cahuilla and Ramona reservations, it "intended to reserve rights to the use of the waters of the Santa Margarita River stream system which under natural conditions would be physically available on the Indian Reservation, including rights to the use of the ground waters, sufficient for the present or future needs of the Indians residing thereon." (US District Court 1962)[111]

Although the court included these findings and legal conclusions in its 1966 consolidated judgment (the "Fallbrook Decree"), it did not fully quantify the Tribes' water rights. Rather, the court adhered to its previous decision that "there is no issue presently presented" that would require it to precisely determine the quantities of the Tribes' reserved water rights. The court did retain jurisdiction over the case to adjudicate the quantity of the Tribal water rights if conditions change. (US District Court 1962, 1966)[112]

The Cahuilla and Ramona Tribal governments intervened in the Santa Margarita River litigation in 2007, asking the court to quantify their respective reserved water rights and to enjoin as many as 3,000 other users of water from the Anza-Cahuilla groundwater basin from interfering with those rights. Two years later, the court entered a stay of the litigation to allow the parties time to reach a settlement of the Tribal claims. (US District Court 2017) The court has granted a series of orders to extend the stay in the proceedings, and the parties continue to attempt to negotiate a settlement agreement to present to Congress for its approval and authorization. (Congressional Research Service 2025a)

As noted above, the Cahuilla and Ramona water rights claims were originally paired with those of the Pechanga Band of Luiseño Mission Indians, whose reservation also lies within the Santa Margarita River watershed. Although the Pechanga Band was able to reach a settlement that included quantification of its water rights, the Cahuilla and Ramona Bands have not been able to duplicate this success. One sticking point is that the Cahuilla and Ramona reservations are located in a more remote portion of the Santa Margarita River watershed and—unlike the Pechanga—are not within the service area of the Eastern Municipal Water District or any other utility. It is therefore currently not physically possible to convey imported or treated water to the reservations to augment or recharge native groundwater supplies. This has made a negotiated settlement more difficult to achieve.

---

[110] The court found that 17,312 acres of the 18,292-acre Cahuilla Reservation were within the Santa Margarita River watershed. Of these, it concluded, 12,998 acres were irrigable "under present conditions." It determined that 321 acres of the 560-acre Ramona Reservation were within the watershed, of which 104 acres were irrigable. The court noted, however, that at that time there were no Tribal members residing on the Ramona Reservation—although the Cahuilla were grazing livestock on some of the Ramona's lands. (US District Court 1962)

[111] The priority date of these reserved rights is 1875 for the lands included in the original Cahuilla Reservation with later priorities for lands added to the reservation. The priority date for the Ramona Reservation is 1893. (US District Court 1962)

[112] The court did make a rough calculation of the quantities of water to which the two Bands would be entitled. It identified a crop mix that could be grown on the reservations. It determined the number of arable acres on each reservation. It assigned a water duty to those crops and thus calculated a volume of water that would be needed to grow those crops. The court did not undertake a complete "practicably irrigable acreage" analysis under the *Arizona v. California* standard, however. See Part Three. For example, the court did not make any findings regarding the economic feasibility of irrigating reservation lands or of the availability of water to serve this practicably irrigable acreage. (Interview with Ramona and Cahuilla Tribal representatives)

The Bands have explored the possibility of constructing a pipeline that would connect their reservations to the Eastern Municipal Water District's water supply system through which they could receive imported water supplied by the Metropolitan Water District. Such an arrangement is contingent on federal funding, however, which the two Bands have not yet secured. Indeed, the Bands probably cannot secure infrastructure funding without a settlement agreement to present to Congress. (Interviews with Ramona and Cahuilla Tribal representatives)

The current inability to obtain imported water to augment local sources does not preclude other options to fulfill the Bands' reserved water rights, however. These include federal and state funding to install new and deeper well systems and to construct irrigation works, water treatment facilities, and sanitation systems to enable the Bands to make full and safe use of their own water sources. The federal and state governments also could assist the Tribal governments' efforts to improve water management and efficient use within their respective reservations and to participate in broader programs to improve the conjunctive management and use of the available surface water and groundwater in the upper Santa Margarita River watershed.

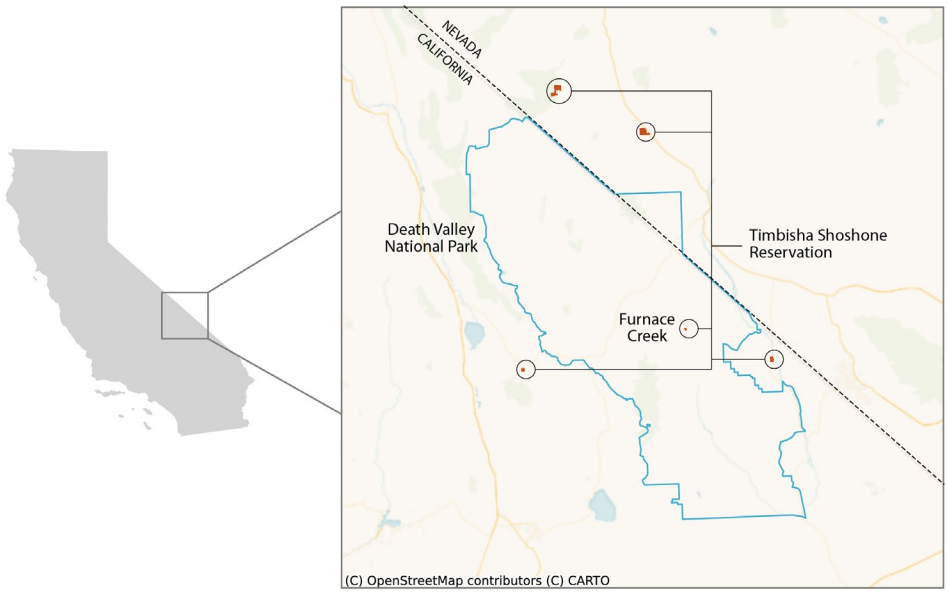
These options, of course, should be available to all Tribes seeking to secure their federal reserved water rights.

Part 5: The Timbisha Shoshone Homeland Act

The Timbisha Band of Shoshone Indians also have federal reserved water rights that were recognized and quantified by federal legislation. The Timbisha Shoshone Homeland Act, which President Bill Clinton signed into law in 2000, is significant because it also created a reservation for the Tribe. The reservation lands are in five separate areas in California and Nevada that were once part of the Timbisha Shoshone Peoples' ancestral lands. The smallest of these parcels—the 314-acre "Indian Village" at Furnace Creek in Death Valley National Park—represents the centerpiece of Tribal history and Tribal culture. It is also the first area within a national park that the United States returned to its aboriginal inhabitants. (US Senate 2000; Martin 2024) See Figure 8.

FIGURE 8

The Timbisha Shoshone reservation



SOURCE: Reservation boundaries are obtained from the US Bureau of Indian Affairs. State borders are obtained from the US Census Bureau. The Death Valley National Park boundary is obtained from the National Parks Service. Basemap features from OpenStreetMap contributors under the Open Database License.

NOTE: This map shows the five non-contiguous parts of the Timbisha Shoshone reservation, including the Tribal Village at Furnace Creek. It also shows the boundaries of the Death Valley National Park, large portions of which are designated as the Timbisha Natural and Cultural Preservation Area.

Pre-Contact History and Establishment of Death Valley National Park

The Timbisha are a Band of the Shoshone People whose ancestral lands included much of the Great Basin. The Timbisha Shoshone inhabited Death Valley, as well as surrounding lands in what are now eastern California and western Nevada. They spoke a dialect of Panamint, which they shared with the Owens Valley Paiute and the Chemehuevi People. (California Language Archive 2025c)[113] The Timbisha hunted bighorn sheep and mule deer, caught yellow-bellied marmot and black-tailed jackrabbits, and harvested pupfish from the tiny streams, marshes, and subterranean pools in Death Valley and adjacent areas. They gathered seeds, wild fruit, and pine nuts, and they cultivated devil's claw, corn, beans, and quash. (Moyle 2002; National Park Service n.d.)

The Timbisha moved seasonally between semi-permanent villages in Death Valley and in the surrounding deserts and mountains. Their principal winter villages were in Death Valley, Panamint Valley, and Saline

[113] The contemporary Tribal name Timbisha is derived from "Tümpisa," which the Tribal ancestors called the red ochre that they obtained from the hills above Furnace Creek. The Timbisha would paint their faces with ochre to protect and heal themselves and to strengthen their spirituality. Tümpisa, rather than the more foreboding "Death Valley," was also what the original inhabitants called their homelands. (Catton 2009; Stringfellow 2016)

Valley. Furnace Creek was their principal communal gathering spot. Families lived in conical brush houses set among mesquite groves, which provided cover for the tracking of game and an ample supply of mesquite beans. In the summer months, the Timbisha moved to higher ground in the mountains to seek refuge from the intense heat. (Stringfellow 2016) Perennial springs were vital to their survival, and the Timbisha assiduously cleared and cleaned their known water sources "to ensure a continued supply of clean, potable water for humans, animals, and migratory birds." (US Senate 2000; Catton 2009)

The Timbisha People maintained their way of life for thousands of years before contact with Europeans and Americans. The Tribe's remote location protected it throughout most of the Spanish and Mexican colonization of Alta California. The Gold Rush brought miners, ranchers and homesteaders to the region, however, and many Timbisha were forced off their valley lands. The discovery of borax in a Death Valley salt marsh in 1881 contributed to the Tribe's dislocation as the mining fouled water sources and brought new prospectors to the Tribal homelands. By the end of the 19th century, the Tribe had lost access to its most valuable lands and water resources, and Tribal members resorted to working for the borax mining companies and ranchers in order to survive on their native lands. (US Senate 2000; Catton 2009)

In the early 1920s, the Pacific Coast Borax Company established a ranch in Death Valley and began cultivating grapes, citrus trees, and date palms. Two hotels followed in 1927—one at Stovepipe Wells, the second at Furnace Creek. As tourism increased, the United States forced the remaining Timbisha to move, twice, to new locations. Neither of the new Tribal "camps" had access to water. (Miller 2000)

By 1933, more than 9,000 tourists were visiting the valley each year. To ensure the protection of the lands and archeological resources of the region, President Herbert Hoover established the Death Valley National Monument shortly before he left office. The monument included more than 1.6 million acres of public lands in Death Valley, Saline Valley, portions of Panamint Valley, and the surrounding canyons and mountains. It embraced a large swath of Timbisha ancestral lands and included all of the Tribe's principal villages. (Miller 2000)

These developments were disastrous for the Timbisha People. President Hoover's proclamation made no provisions for the Indigenous residents, and the continued Tribal presence was quickly regarded as antithetical to the preservationist goals of the new national monument. The National Park Service (NPS) suspended the Tribe's hunting, fishing, and grazing rights in the mid-1930s, and it prohibited new Tribal dwellings because the Superintendent of the Death Valley Monument believed that the Timbisha were using scarce water resources that would be better used to serve tourists and NPS personnel. In 1937, the Park Service moved the remaining Tribal members to a 40-acre tract of leased lands south of Furnace Creek away from the areas most visited by tourists. The new "Indian Village" consisted of eleven adobe houses served by a communal laundry, toilet facilities, and a single water spigot. (Miller 2000)

Federal policy toward the Timbisha Shoshone vacillated over the ensuing decades. In 1939, the new Superintendent proposed to convert the 40-acre village into an Indian reservation. The Department of the Interior rejected the idea out of concern that it would set a precedent for other Tribes that continued to reside in other national parks and monuments. Following the conclusion of World War II, the successor Superintendent decided that it would be best to drive the Timbisha from the national monument entirely. The NPS increased the rent that Tribal members paid for their housing, evicted residents who failed to make rent payments, and razed vacant Tribal structures. This policy reached its nadir in 1957 when the Park Service destroyed five of the Tribal members' adobe homes with high-powered water hoses when

they temporarily left the village to move to their traditional summer residences in the mountains. (Miller 2000; US Senate 2000)

By the 1970s, the Indian Village was in disrepair. Twenty-five Timbisha Shoshone occupied the nine remaining dwellings, which were trailers that lacked plumbing and electricity. Although some of the village residents worked at the hotels and Park Service facilities, most Tribal members had left the reservation to seek work in nearby towns or more distant larger cities. In response, the Timbisha Shoshone began to advocate for two important changes: federal recognition as an Indian Tribe and reservation of land to serve as a permanent home for the Tribe and its people.

Creation of the Timbisha Shoshone Reservation

With assistance from California Indian Legal Services, the Timbisha Shoshone Tribal government submitted historical records, oral testimony, and academic analysis to the Bureau of Indian Affairs to establish the Tribe's long-standing existence and current status as a functioning Tribal unit. The BIA officially acknowledged the Timbisha Shoshone Tribe in 1983. (Miller 2000, 2006) As a federally recognized Tribe, the Timbisha Shoshone now qualified for both federal reserved land and federal reserved water rights.

In 1994, Congress enacted the California Desert Protection Act, which converted the Death Valley and Joshua Tree National Monuments into national parks, created a new national preserve to protect a large swath of the Mojave Desert, and designated other areas as wilderness. The legislation also included a special provision that directed the Secretary of Interior, "to identify lands suitable for a reservation for the Timbisha Shoshone Tribe that are located within the Tribe's aboriginal homeland area within and outside the boundaries of the . . . Death Valley National Park," and report back to Congress the following year. (US Congress 1994) After six years of additional negotiations and mediation, the United States and the Tribe came to an agreement. President Bill Clinton signed the Timbisha Shoshone Homeland Act into law on November 1, 2000.[114]

The legislation granted the Tribe a total of 7,754 acres of land in five non-contiguous parcels. 1,954 acres are in California, and the other 5,800 acres are in Nevada. As noted above, the 314-acre Furnace Creek parcel is the site of the Timbisha Shoshone Indian Village and lies within Death Valley National Park. Two of the remaining parcels are located in California, and two are in Nevada. These parcels were previously public domain lands managed by the US Bureau of Land Management. All five parcels are fragments of the ancestral lands of the Timbisha People. (US Senate 2000; US Congress 2000)

Congress also expressly reserved surface water and groundwater rights for the Tribe for use on its reservation lands. See Table 6. It defined the priority date of the reserved rights as the date of enactment of the legislation, and it explicitly made the Tribal rights "junior to Federal and State water rights existing on such date of enactment." Consistent with the general law governing federal reserved rights, Congress

[114] A variety of factors enabled the parties to reach agreement. These included a $600,000 grant that enabled the Timbisha Shoshone to document their ancestral villages, encampments, burial sites, hunting grounds, and places of religious and ceremonial practices, as well as President Clinton's 1994 directive that all federal agencies "ensure that the Federal Government operates within a government-to-government relationship with federally recognized Native American Tribes." (US Department of the Interior 1994) For more detailed analyses of the negotiations and the other circumstances that led to the 2000 agreement, see Miller (2000) and Catton (2009).

also provided that the Tribal water rights "shall not be subject to relinquishment, forfeiture or abandonment." (US Congress 2000)

TABLE 6

Congressionally recognized water rights of the Timbisha Shoshone reservation

Location	Acres	Water Right (afa)	Type of Water	State
Furnace Creek Death Valley National Park	314	92	Native Surface and Groundwater	California
Death Valley Junction	1,000	15.1	Native Groundwater	California
Centennial	640	10	Native Groundwater	California
Scotty's Junction	2,800	375.5	Native Groundwater	Nevada

SOURCES: US Congress (2000).

The statute detailed how the Tribe may use the Furnace Creek area, authorizing residential and community development, historic restoration, and visitor-related economic development. The Furnace Creek area also includes a 25-acre non-development zone and an "adobe restoration" zone, which the Tribe will manage as an historical district.[115] There are no similar restrictions on the Tribe's use of the other homeland areas. (US Congress 2000)

Finally, in recognition of the "significant contributions the Tribe has made to the history, ecology, and culture of the Park, and to ensure that the visitor experience in the Park will be enhanced by the increased and continued presence of the Tribe," Congress established three "nonexclusive special use areas."[116] The Timbisha Shoshone may use these areas "for low impact, ecologically sustainable, traditional practices" pursuant to a management plan created by the Tribe and the Department of the Interior. The statute adds, however, that these Tribal uses "shall not include the taking of wildlife and shall not be in derogation of purposes and values for which the Park was established." (US Congress 2000)

The Timbisha Shoshone Homeland Act has enabled the Tribe and its members to reestablish their community and culture in Death Valley and the other reservation lands. It also provided them a secure land base on which to build an economic future. Unlike the Mission Indian water rights legislation, however, the statute does not include any significant federal funding to ensure that the Timbisha

[115] Two points of contention during the negotiations were whether the Tribe would be permitted to maintain residences in the Furnace Creek area and engage in commercial activities within Death Valley proper. (Miller 2006) The legislation approved the compromise reached by the parties. It limits the structures within the Furnace Creek area to a maximum of 50 single-family residences, a Tribal community center ("with space for Tribal offices, recreation facilities, a multipurpose room and kitchen, and senior and youth facilities"), a "small-to-moderate desert inn," a Tribal museum and cultural center with a gift shop, and related infrastructure. The Tribe also agreed not to operate any gaming facilities inside the boundaries of the park. (US Congress 2000)

[116] The largest of these areas, the Timbisha Shoshone Natural and Cultural Preservation Area, includes most of Death Valley National Park. The other two, the Mesquite Use Area and the Buffer Area, are located at Furnace Creek. (Catton 2009)

Shoshone are able to put their quantified water rights to use. Moreover, because the reservation was established simultaneously with the recognition of the Tribal reserved water rights, those rights carry a late (i.e., junior) priority vis-à-vis other water right holders in the same groundwater basins.

Although the demographics of Furnace Creek are changing, the modest amount of surface water and groundwater reserved for that portion of the reservation appears to be adequate to serve the Timbisha Shoshone's population center and Tribal businesses.[117] The plans to construct a casino, hotel, and travel center on its property at Death Valley Junction is a different matter, however. Whether the Tribe's reserved rights to extract 15.1 afa of groundwater for this property will be adequate to serve these more water intensive uses is uncertain. The Tribe is relying on income from this proposed development to support its community goals, which include creation of new housing and modernization of existing homes at Furnace Creek, installation of green infrastructure, stewardship of its reservation lands and cultural resources, and job training, education, and healthcare for its members. (Timbisha Shoshone Tribe 2025) A sufficient and secure source of water to support this economic development will be essential.

Part 6: Water Rights Settlements Awaiting Congressional Approval

Two other Tribes have quantified their federal reserved water rights through settlement agreements with other users in their respective surface water and groundwater basins. The Tule River Tribe, whose reservation lies in the foothills and lower slopes of the Sierra Nevada east of the City of Porterville, reached its water rights settlement in 2007. The Agua Caliente Band of Cahuilla Indians, whose reservation includes sections of Palm Springs and two other cities in the Coachella Valley, completed its agreement in 2025. See Table 7. Congress has not yet acted on these settlement agreements, however.

[117]The 2010 US Census reported that the population of Furnace Creek was 24 individuals, 75% of whom identified as Native American or mixed race. The 2020 census reported that the population had risen to 136, but only about one-quarter identified as Native American or mixed race. (Anishinaabe History 2025)

TABLE 7

Water rights settlements pending congressional authorization

Tribe and Reservation	Date of Settlement Agreement	Water Right (afa)	Water Basin	Sources of Settlement Water	Requested Federal Appropriations	Requested Non-Federal Contributions
Tule River	2007	5,828	Tule River South Fork	Native Surface Water and Groundwater	$518 million	- 0 -
Agua Caliente	2025	20,000	Indio Subbasin	Native Groundwater and Surface Water	$500 million	$15 million

SOURCES: US Senate (2025a); US House of Representatives (2025b).

NOTES: The Tule River and Agua Caliente settlement agreements have not yet been approved by Congress. The Federal Appropriations and Non-Federal Contributions Additional Monetary Payments columns therefore show the dollars requested in the settlement agreements.

The Tule River Indian Reservation Water Rights Settlement (2007)

The Tule River Tribe was created "from several closely related but politically and dialectically distinct Southern Valley and Foothill Yokuts Tribes" during the first several decades of California statehood. (Frank and Goldberg 2010)

Pre-Contact History and Establishment of the Reservation

Before contact, the Southern Valley Yokuts occupied most of the Tulare Basin and adjacent foothills. They lived in villages along the lower reaches of the rivers that flow into the basin from the Sierra Nevada and on the shores and uplands surrounding Tulare Lake. They gathered seeds, herbs, roots, and fiber to construct their homes, canoes, and clothing. They hunted antelope and elk that would come to the shores of the lakes to drink. They captured turtles, geese, ducks, and other waterfowl in the wetlands and riparian forests that extended south to Buena Vista and Kern lakes. They fished for trout, chub, and perch, and periodically they would harvest salmon, steelhead, and sturgeon that would spill over from the San Joaquin River during high flow conditions into the distributaries of the Kings River delta. The Southern Valley Yokuts also traded with their foothill neighbors for acorns. (Wallace 1978a)

The Foothill Yokuts located their villages along the Fresno and San Joaquin Rivers in the north and on the Kings, Kaweah, Tule, and Kern Rivers to the south. Artesian springs provided water for drinking and other domestic uses. They fished for salmon and trout, and they hunted deer, antelope, elk, rabbits, squirrels, quail, and ducks. Acorns were a dietary staple. The Foothill Yokuts traded among their own villages and with their neighbors to the west, the Northern Valley and Southern Valley Yokuts. Although these groups spoke a common language, each had a distinct dialect and multiple sub-dialects that varied from village-to-village. (Spier 1978)[118]

[118] In combination, the Yokuts were "the most populous indigenous group in California at the time of first European contact. They held one-ninth of the territory of California, comprising the entire San Joaquin Valley, an area over 450 miles long and 200 50 miles wide, from Stockton to the Tehachapi Pass." (Frank and Goldberg 2010)

These ways of life began to change during the Spanish and Mexican occupation of Alta California. The Spanish Friars sent kidnapping parties into the Central Valley, and conscripted Yokuts men and boys to work at the missions' agricultural lands along the coast. The ranchos established by Mexican land grants in the valley also used conscripted Yokuts labor, and their longhorn cattle and sheep grazed on the seasonal grasslands that were part of the Valley Yokuts' ancestral home. The Valley and Foothill Yokuts' villages, homes, and hunting and gathering areas remained relatively unscathed during the years of Spanish and Mexican rule, however. (Spier 1978; Wallace 1978a; Frank and Goldberg 2010)

The California Gold Rush radically changed the lives of the Yokuts. In the 1850s, prospectors moved first into the Stanislaus, Tuolumne, Merced, and upper San Joaquin River watersheds and then further south into the foothills and canyons of the Tulare Basin. The miners displaced the Foothill Yokuts from their villages, and the lands and waters that were the source of their sustenance and livelihoods were fouled with mining debris, mercury, and other pollutants. The United States moved some of the survivors to the Tejon Reservation in the Tehachapi Mountains, which the government opened in 1853. (Spier 1978)

The Southern Valley Yokuts were spared direct onslaught by the goldminers, but they too lost their villages and ancestral lands as increasing numbers of farmers, ranchers, speculators, and businessmen invaded the valley. Following the discovery of gold in the Kern River watershed in 1855, more than 6,000 individuals immigrated to Tulare County in a single year. (Wallace 1978a; Frank and Goldberg 2010)

In response, the United States created a 1,280-acre Indian reservation in 1856 on the site of a Koyeti village along the lower reach of the Middle Fork of the Tule River to which it moved many of the surviving Foothill and Southern Valley Yokuts.[119] The reservation was designed both to protect the Tribal members from violence and to create an incentive for them to abandon their ancestral lands. Indeed, in the ensuing years, conflicts broke out between the white settlers and the remaining Indigenous population. The new Tule River Reservation became a refuge for the surviving Yokuts. (Frank and Goldberg 2010)[120]

Although the initial years were difficult, the inhabitants of the Tule River Reservation managed to create a sustainable agricultural economy for their small community. The land was fertile, Tribal members constructed irrigation works to bring water from the river, and they proved to be skilled agriculturalists. (Frank and Goldberg 2010) Unfortunately, the original Tule River Reservation would be short-lived.

In 1860, an Indian affairs official named Thomas Madden obtained title to the lands that comprised the Tule River Reservation. Although Madden's claim was probably fraudulent, it nevertheless placed a cloud on the United States' title, and the federal government began paying Madden rent for the Yokuts' occupancy of "his" land. Indeed, the reservation became known as the "Madden Farm." In 1863, the government moved members of the Owens Valley Paiute Tribe to the Tule River Reservation following their defeat by the United States Army. It also closed the Tejon Reservation and moved the Yokuts who had been living there to Tule River. (Wallace 1978a; Frank and Goldberg 2010)

---

[119] The Koyeti were a Band of Southern Valley Yokuts. (Frank and Goldberg 2010)

[120] For example, some of the new farmers and ranchers claimed that the Yokut were taking grass seeds and acorn that could better feed their cattle and pigs. In 1858, about 250 Southern Valley Yokuts were forced off their lands and moved at gunpoint to the Fresno Reservation. "The Americans burned Yokuts villages along the Kings River and Tulare Lake and destroyed the Tribes' remaining food stores." (Frank and Goldberg 2010)

These two events doubled the population of the Tule River Reservation to about 800 and led to food shortages.[121] Federal proposals to expand the size of the reservation to accommodate the larger population provoked protests and acts of violence from recent immigrants who wanted the valley lands for their own farms and ranches. The United States succumbed to the public pressure to relocate the reservation to a more distant location. (Wallace 1978a; Frank and Goldberg 2010)[122]

In January 1873, President Grant created a new Tule River Reservation located in the watersheds of the Middle and South Forks of the Tule River in the foothills and lower elevations of the Sierra Nevada. Ten months later, he issued a second executive order that extended the reservation boundaries to include a portion of the watershed of the North Fork of the Tule River. Unlike the rich valley lands of its predecessor, the new reservation contained few arable lands. As a result, most of the Yokuts refused to leave the original reservation. By the fall of 1874, only seven families lived on the new reservation—all along the South Fork. In December 1876, however, federal authorities forcibly removed the remaining Tribal members from the Madden Farm.

The new reservation lands, though inadequate to support significant farming, were heavily timbered. The foothill oak and pine, fir, and redwood forests of the higher elevations were attractive to commercial interests, however. In 1878, President Rutherford B. Hayes excised the northern half of the reservation—reducing it in size from 91,837 acres to its original 48,551 acres. The northern portion of the reservation returned to the public domain and was opened for timber harvesting. (Frank and Goldberg 2010)

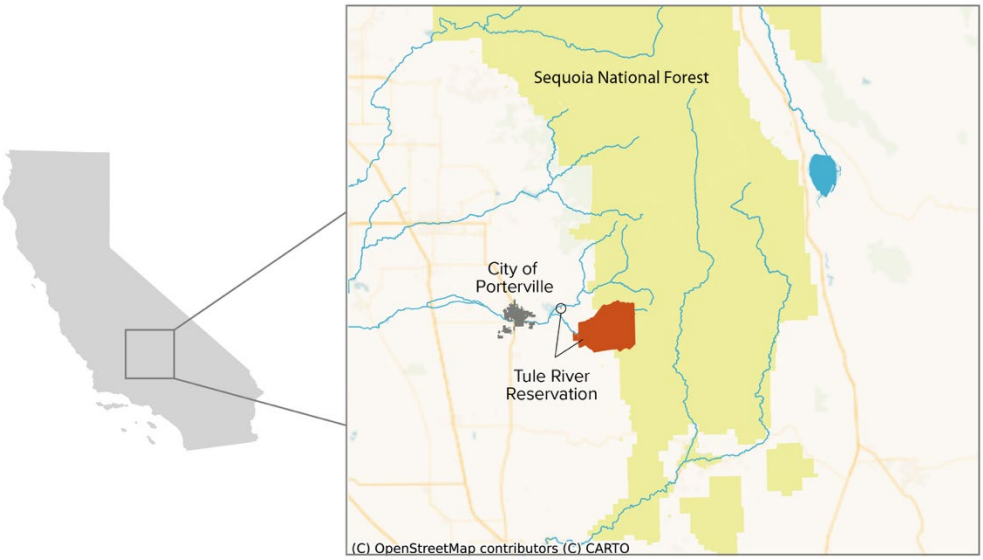
Although the Yokuts were initially skeptical, the new reservation's small areas of arable land and its supply of water from the South Fork of the Tule River were enough to support its 150-person population, which was organized into 30 to 40 households. The reservation lands also allowed the resident Yokuts to graze livestock and harvest timber for their own uses. The Tribe did have to thwart trespassers who were illegally cutting redwood trees in the northeast portion of the reservation, however. (Frank and Goldberg 2010) See Figure 9.

[121] Following a measles epidemic in 1868, most of the Owens Valley Paiute left the Tule River Reservation. (Tule River Tribal Council n.d.)

[122] By this time, the City of Porterville was rapidly expanding, and the Southern Pacific Railroad planned to build a station in town that would attract even more people and businesses. As the immigrant population grew, conflicts with the reservation Indians increased. In 1873, a water company organized by Porterville residents gained control of the ditch that the Yokuts had constructed and cut the water supply to the reservation. (Frank and Goldberg 2010)

FIGURE 9

The Tule River reservation



SOURCE: Reservation boundaries are obtained from the US Bureau of Indian Affairs. Lake, river, and stream boundaries are obtained from the USGS National Hydrography dataset. The City of Porterville boundary is obtained from the California Places dataset. National Park and National Forest boundaries are obtained from the National Parks Service and National Forest Service, respectively. Basemap features from OpenStreetMap contributors under the Open Database License.

NOTE: This map shows the location of the Tule River Reservation, including the site of the Tribe's Eagle Mountain Casino near the Porterville Airport to the northwest of the main reservation.

Twentieth Century Conflicts

The Tule River Tribe's water rights were not called into question until the early 20th century, when the California Superior Court for Tulare County conducted an adjudication of all surface water rights in the South Fork stream system. Unfortunately, the United States failed to assert and protect the water rights of the Tule River Reservation. The court determined that the South Tule Independent Ditch Company (STIDC) had senior water rights to the waters of the South Fork, with priority dates ranging from 1854 through 1872. (California Superior Court 1916)

In recognition of this error, the federal government entered into an agreement with the company in 1922 that defined the Tribe's diversion rights under different flow conditions.[123] The agreement recognized that the Tribe had "diverted and made beneficial and continuous use of certain portions of the water of [the South Fork] since the establishment of said reservation by Executive Order dated January 9, 1873, and continuously used same without protest for about 46 years." (US Department of the Interior 1974) Although the agreement indicated that the United States was planning to construct diversion, storage, and

[123] STIDC's diversion facilities are located downstream from the Tulare River Reservation. The agreement provided that under high flow conditions (more than 10 cfs measured at the company's point of diversion), the Tribe could divert "any amount desired." Between 5 and 10 cfs, the Tribe's diversion rights were 2 cfs; between 3 and 5 cfs, the Tribe could divert 1.5 cfs; and below 3 cfs the Tribe was entitled to divert 1 cfs. (US Department of the Interior 1974)

irrigation works to enable the Tribe to exercise its water rights, the government did not do so. As a result, the Tribe had to rely on small wells as the primary source of water for the reservation. (US Senate 2025)

Throughout much of the 20th century, the Tule River Tribe and its members struggled to live on the resources provided by the reservation. Most of the Tribe's income was derived from timber sales, which produced annual revenues between $200 and $300 per capita. Some Tribal members worked for the logging companies or at a lumber mill located on reservation lands. Many relied on unemployment benefits. The reservation also lacked basic infrastructure. Most homes were in poor physical condition, and many lacked indoor plumbing and electricity. The reservation did not even have septic systems until 1959. "Not surprisingly, the health, well-being, and life span of the Tule River Indians were compromised by such poverty and harsh living conditions." (Frank and Goldberg 2010)

Conditions began to improve in the 1970s. The Tribe constructed a gas station, grocery store, and community center, and the United States provided funding to modernize existing homes and construct new housing. These developments afforded the residents new employment opportunities, and they attracted additional Tribal members to the reservation. In 1996, the Tribe opened the Eagle Mountain Casino, which brought significant numbers of visitors to the reservation for the first time and increased Tribal employment and Tribal income. (Frank and Goldberg 2010)[124]

Despite these developments, the reservation still lacked a safe and reliable water supply. The Tribe's groundwater resources were strained by the demands of its existing population, and there were more than 175 families who wanted to move to the reservation. Securing the Tribe's surface water rights to the South Fork of the Tulare River thus became a top priority for the Tribal Council.[125]

The Settlement Agreement

In 2007, following 14 years of negotiations and engineering studies, the Tribe entered into a settlement agreement with STIDC and the Tule River Association (TRA) to define and quantify its water rights *vis-à-vis* downstream water right holders.[126] (Tule River Tribal Council 2007) The agreement recognized the Tulare Indian Tribe's federal reserved rights "to water sufficient to ensure that the Reservation provides a permanent and sustainable homeland for the Tribe." The parties then quantified the Tribe's diversion rights as a maximum diversion of 5,828 afa of surface water from the South Fork of the Tule River and its

[124] When the casino opened in 1996, it employed about 100 Tribal members. The number of employees doubled shortly thereafter. "Many of the Tribal members hired by the casino had previously been on public assistance." The new revenues enabled the Tribe to create an Economic Development Commission, which manages Tribal businesses. The Tribe also offers educational programming and provides scholarships to Tribal members who attend college. (Frank and Goldberg 2010; Tule River Economic Development Commission 2025)

[125] Suitable land for new housing was also a challenge. As noted above, most of the reservation lands are steep and forested. They are therefore difficult to use for housing and related purposes, such as roads, sewage disposal, fire protection, and community services. The Tribe has purchased several parcels of land on the western boundary of the reservation along the South Fork of the Tule River that is more suitable for new housing. (Peyron 2022)

[126] The Tule River Association is comprised of all pre-1914 appropriators and many riparians that divert water from the Tule River downstream of Shafer Dam (previously Success Dam). Its members include the Pioneer Water Company, Vandalia Irrigation District, Porterville Irrigation District, and the Lower Tule River Irrigation District. Schafer Dam is located about five miles east of the City of Porterville. (Tule River Tribal Council 2007)

tributaries. According to the agreement, these quantities would be sufficient to meet the "current and future needs" of the Tribe and its members.

The settlement agreement states that the Tribe "shall have the right, with no restriction on purpose of use, to use or permit the use of [its federal reserved water rights] anywhere within the Original Reservation"—i.e., within the boundaries of the 48,551-acre reservation that President Grant first designated in 1873. The Tribe also may use up to 2,000 afa of its water on additional lands that the Tribe has acquired, or that it may acquire, if these uses are within the South Fork watershed. (Tule River Tribal Council 2007)[127]

In addition, the settlement agreement authorizes the Tribe to construct and store its water in one or more reservoirs located on the reservation.[128] It states that the United States will fund construction of a "Phase One" dam and reservoir with a capacity of 5,000 acre feet and a distribution system to deliver water for residential, commercial, municipal, and industrial uses within the reservation. (Tule River Tribal Council 2007)[129]

Finally, the settlement agreement recognized the Tribe's rights to continue to use water from natural springs within the reservation and to pump groundwater. Most spring water diversions and extractions of groundwater from a defined Groundwater-Surface Water Interaction Zone count against the Tribe's 5,828 afa surface water rights, however. (Tule River Tribal Council 2007)[130]

Waiting for Congress

For the past two decades, the Tule River Tribal Council has been seeking congressional approval of the settlement agreement, as well as federal funding for the new water storage and distribution infrastructure, operation and maintenance costs, and a Tribal water right development fund. Tule River Tribal Water Rights Settlement bills have been introduced in every Congress since the 111th (2009-10), but none has been enacted. In 2024, the Senate Indian Affairs Committee unanimously passed Senate Bill 306, which would have ratified the settlement agreement and formally recognized the Tribe's federal reserved water rights. The legislation also would have authorized creation of a Settlement Trust Fund of $518 million for infrastructure construction and $50 million for operation and maintenance costs. The full Senate failed to vote on the bill, however, before the 118th Congress adjourned. (US Congress 2023)

In February 2025, California Senator Alex Padilla introduced Senate Bill 689, the Tule River Tribe Reserved Water Rights Settlement Act of 2025. As with its predecessors, this bill would ratify the terms

---

[127] As noted above, in the years leading up to the 2007 agreement, the Tribe had been acquiring lands on the west side of the Tule River Reservation along the South Fork to support development of new housing and other services. As described below, the Tribe also recently acquired 17,030 acres of ancestral lands along the southern boundary of the reservation.

[128] The settlement agreement also states that, once the Phase I Reservoir is operational, the 1922 agreement between the United States and STIDC will terminate and the diversion rights of the Tribe vis-à-vis STDIC will be governed by the terms of the 2007 settlement. The Tribe also agreed to limit its diversions from the South Fork of the Tule River to the point of diversion for the reservoir—with exceptions for *de minimis* diversions for stock watering and emergencies such as fire or temporary failure of the Tribal municipal water system. (Tule River Tribal Council 2007)

[129] With technical assistance from the Bureau of Reclamation, the Tribe has conducted more than 40 feasibility, design, and environmental studies of the optimal size and location of the Phase I dam and reservoir. The Tribe has selected a site at the confluence of the South Fork and Lower Bear Creek, with an estimated construction cost of $568 million. Congress has not yet authorized construction of the proposed reservoir, however. (Nieto 2024)

[130] The parties amended the settlement agreement in 2009 to make several minor changes.

of the 2007 settlement agreement and recognize the Tribe's federal reserved water rights to divert up to 5,828 afa from the South Fork of the Tule River.

Although the bill prohibits the Tribe from "permanently alienating" any portion of its water rights, it does authorize it "to allocate and distribute the Tribal Water Right for use on the Reservation in accordance with the 2007 Agreement, this Act, and applicable Federal law." This authority includes leasing of water within the Tribal water right. Consistent with the general law governing federal reserved rights, the bill also states that the non-use of all or any portion of the Tribal water right by the Tribe or any water user "shall not result in the forfeiture, abandonment, relinquishment, or other loss of all or any portion of the . . . right." (US Senate 2025a)

The bill authorizes the Secretary of the Interior to execute the 2007 settlement agreement once two conditions are satisfied: (1) the parties agree on amendments to the agreement defining the priority date (or dates) of the Tribal reserved water right; and (2) the Tribe "moves forward" on the Phase One dam and reservoir or selects an alternative site.[131] It also directs the Secretary to create two trust funds: (1) a Tule River Tribe Water Development Projects Account; and (2) a Tule River Tribe OM&R Account. Appropriations for these funds would be less secure, however, than other congressionally approved Tribal water rights settlements. The bill states that "out of any funds in the Treasury *not otherwise appropriated,* the Secretary of the Treasury shall transfer $518 million into the Tribal water projects account and $50 million into the OM&R account. (US Senate 2025a, emphasis added)[132]

In addition, the bill directs the US Bureau of Land Management to convey title to nine relatively small parcels of federal land to the Tribe to support housing and other Tribal economic development. It also requires the US Forest Service to transfer title to 9,037 acres of federal land that comprises the headwaters of the South Fork of the Tule River east of the current reservation boundaries. And it includes in the Tule River Reservation nine parcels of varying sizes that the Tribe now owns in fee. The United States would hold these lands in trust for the benefit of the Tribe. (US Senate 2025a)

Finally, the bill expressly preserves the Tribe's sovereign authority to enforce its own laws, including environmental regulations, within the reservation. It also directs the parties to file suit in federal court to confirm the Tribal water right and the 2007 settlement agreement (as modified in accordance with the legislation). This suit may not be filed, however, until the parties have reached final agreement on the location of the Phase One of the dam and reservoir. (US Senate 2025a)[133]

---

[131] The on-going negotiations over the priority dates of the Tribal water rights related to the lands that the bill would include in the Tule River Reservation as Tribal trust lands described below.

[132] The bill "pre-approves" the parties' amendments to the 2007 settlement agreement that "establish that the priority date for the Tribal Water Right is no later than January 9, 1873," and that accommodate senior downstream water rights if a court determines that the senior water rights "can be accommodated only by amendment of the 2007 Agreement." (US Senate 2025a)

[133] The bill waives the United States' sovereign immunity for purposes of this litigation to ensure that the federal government is present to represent the Tribes' and its own interests. (US Senate 2025a)

The Benefits of Congressional Authorization and Funding

Senate Bill 689 would benefit all parties by providing greater certainty of water rights and by augmenting storage in the Tule River system. For the members of the Tule River Tribe, however, enactment of the legislation could not come soon enough. As summarized in the Senate Report on the bill:

"The Reservation's residents suffer from a relatively low standard of living due, in part, to the absence of an adequate and reliable potable water supply and system. Groundwater is limited in both quantity and quality, and in years of average and below average precipitation, surface water supply falls below community need. In the summer months, low groundwater and surface water supplies create municipal water shortages, resulting in Reservation residents having little to no access to running water. Current drought conditions and river level decreases are forcing the Tribe to rely on bottled water and trucked water to meet the basic needs of its Reservation residents. This state of water insecurity interferes with Tribal members' participation in work, school, and other aspects of daily life; prevents the Tribe from providing much-needed on-reservation housing to additional Tribal members; and recently forced the Tribe to relocate its primary economic driver—the Eagle Mountain Casino—to Porterville." (US Senate 2025b)[134]

The current population of the Tule River Reservation is 1,612, of whom approximately 1,200 are Tribal members. Another 1,000 Tribal members live off-reservation. (Interview with Tule River Tribal Council) The lack of an adequate and reliable water supply not only strains existing residential and related uses within the reservation; it also prevents additional Tribal members from moving onto the reservation as there is insufficient water to serve new housing. This in turn undermines Tribal cohesion and threatens its future lifeblood. Article II of the Tribal Constitution limits new enrollment to "children born to any member of the Tule River Tribe, *who is a resident of the reservation at the time of the birth of said children*." (Tule River Tribe 1974, emphasis added) Thus, for the Tribe to sustain and grow its membership, it must provide new housing and the water needed to serve this new housing.

Congressional approval of the 2007 Settlement Agreement, accompanied by funding for the construction and operation of the proposed dam and reservoir, would help to address these vital interests—both for the Tribe's present and its future generations. In addition, enactment of Senate Bill 689 also would reaffirm the what the Tule River People have already built, and sustained, for themselves. The Tribe has a sophisticated legal code, a well-functioning Tribal council, and an array of administrative departments that manage the reservation lands and natural resources, protect environmental quality, provide police and fire protection, and offer Tribal members educational, cultural, and public health services. (Tule River Tribe 2024) Congressional approval of S 689 also would afford the Tribe more comprehensive and integrated authority to manage and protect the waters that have always been vital to the Tule River

[134] In 2023, the Tribal Council voted to move the Eagle Mountain Casino 17 miles west to Tribally owned trust land in Porterville. This was precipitated both by the persistent water shortages and by the opportunities presented by moving the casino to a location that is more accessible to its customer base. The Tribe plans to open a hotel and resort in 2027. (500 Nations 2025)

Yokuts. Tribal stewardship of these waters and Tribal sovereignty over its reservation lands go hand-in-hand.[135]

The Agua Caliente Band of Cahuilla Indians Water Rights Settlement (2025)

The Agua Caliente Band of Cahuilla Indians is the most recent Tribe to negotiate a settlement and quantification of its federal reserved water rights.

Pre-Contact History and Establishment of the Reservation

The Cahuilla People inhabited a vast area of land in central Southern California that included "the San Bernardino Mountains in the north to Borrego Springs and the Chocolate Mountains in the south, a portion of the Colorado Desert west of Orocopia Mountain to the east, and the San Jacinto Plain near Riverside and the eastern slopes of Palomar Mountain to the west." (Bean 1972) The topography of these lands was complex, with elevations ranging from 11,000 feet in the high mountains to 273 feet below sea level at the Salton Sink. (Bean 1978)[136]

The Cahuilla Bands shared a common ancestry and language. Their combined population was as large as 6,000 individuals, who lived in 48 to 80 permanent villages. (Bean 1972, 1978) The Cahuilla built their villages near sources of water, food plants, game animals, and mesquite. The Bands of the Upper Sonoran zone lived in "well-watered canyons or on alluvial fans near streams or springs." The Bands in the Lower Sonoran zone built their villages at the "lower end of alluvial fans where a sufficiently high water table enabled [them] to dig shallow wells to reach a dependable water supply." (Bean 1972; Gallacher 2014)

The members of the Agua Caliente Band are descendants of the Lower Zone Cahuilla, who settled in the Coachella Valley and adjacent foothills.[137] The valley sits atop a large groundwater basin, whose aquifers provided the native inhabitants with a reliable source of freshwater for their homes and villages. The Agua Caliente established their largest village around an artesian spring that they called "Sec-he"—the sound of boiling water. They used this water for drinking, bathing, and healing. (Bean 1972, 1978; Gallacher 2014) The hot springs were also spiritual connection points to the underworld of the ancient spiritual beings whom they called "nukatem." (Native American Rights Fund 2017)

The Agua Caliente People also used surface water from several streams that flow through the canyons of the San Jacinto Mountains—Tahquitz Creek, Andreas Creek, Chino Creek, Murray Creek, and the

---

[135] The interplay between Tribal sovereignty and Tribal resource management is one of many topics explored in Frank and Goldberg (2010). For an illustration of the importance of the waters of the South Fork of the Tule River to the Tule River People, see Tule River Tribal Council (2019).

[136] Rain, runoff from the mountains, and occasional overflows from the Colorado River would periodically flood the lowlands of the Coachella Valley. Lake Cahuilla, originally formed during the Holocene, covered the southern portion of the Coachella Valley and almost all of the Imperial Valley. The lake was an important food source for the Cahuilla People, who built fishing villages and hunting encampments along the lakeshore and farmed the fertile lakebed when its waters receded. (Gallacher 2014; Rockwell 2022)

[137] Today, there are eight other federally recognized Bands of Cahuilla. These are the Augustine Band of Cahuilla Indians, the Cabazon Band of Mission Indians, the Los Coyotes Band of Cahuilla and Cupeno Indians, the Morongo Band of Cahuilla Mission Indians, the Santa Rosa Band of Cahuilla Indians, the Torres-Martinez Desert Cahuilla Indians, and the Cahuilla Band of Mission Indians and the Ramona Band of Cahuilla Indians described in Part Four. (Caudell 2017)

Whitewater River—to supply their villages and to irrigate crops such as beans, squash, and corn. (Bean 1972, 1978; Gallacher 2014) The waterworks included a small dam in Tahquitz Canyon that diverted water through a stone-lined ditch to convey water to the Tribal fields. In addition, the Agua Caliente constructed "walk-in wells" that allowed Tribal members to access subterranean spring water. These wells featured stairs cut into the earth that descended 10 to 30 feet to the level of the groundwater table. (De Crinis 2020) Tribal members also constructed "lakelets" around these wells in which they grew herbs and other plants. (Bean 1972)

Although some travelers between Mexico and Alta California passed through the Coachella Valley and San Gregorio Pass in route to the coast, the Cahuilla Bands enjoyed relatively unencumbered use of their lands and waters until the mid-19th century when the Gold Rush and California statehood attracted prospectors and settlers to the region.[138] The Agua Caliente and other Bands negotiated a treaty with the United States in January 1852 that would have established an Indian reservation in the valley, but Senate rejected this treaty (along with the 17 others described previously). See Part 1. Non-Indian farming and settlement increased over the next several decades, displacing many Cahuilla from their villages and ancestral farmlands lands in the valley. "The greatest blow to Cahuilla culture came in 1863 when a smallpox epidemic killed a large number" of Tribal members. (Bean 1978)

In 1876, the Southern Pacific Railroad completed its line from Yuma to Los Angeles. The line traversed the Coachella Valley before heading into the San Gorgonio Pass and on to the Pacific Coast. The railroad opened the Cahuilla's ancestral lands to the expanding non-Indian population on the Southern California coastal plain. Congress granted Southern Pacific 20 square miles of public land—*per mile of railroad line*—as an incentive for construction. The railroad subsequently sold many of these lands to developers and speculators, which exacerbated the erosion the Cahuilla Bands' land and resource base and fragmented Tribal cohesion. (US Congress 1886; Gates 1968)

That same year, President Ulysses S. Grant created the Agua Caliente Reservation by executive order. The initial reservation was approximately 1,000 acres. It included the Tribal village that was centered around the Agua Caliente Hot Mineral Spring in what is now the City of Palm Springs, as well as a portion of Tahquitz Canyon. As noted above, both were important sources of water and places of religious and cultural significance for the Tribe. The following year, President Rutherford B. Hayes added another 30,000 acres to the reservation. Because the United States had granted the odd-numbered sections of land in the valley to the Southern Pacific Railroad, the reservation lands included only the even-numbered sections. (DeCrinis 2021) The Agua Caliente Reservation thus exists as a "checkerboard" of Tribal lands and privately owned lands. Indeed, about half of the reservation is within the city limits of Palm Springs, Cathedral City, and Rancho Mirage. See Figure 10.

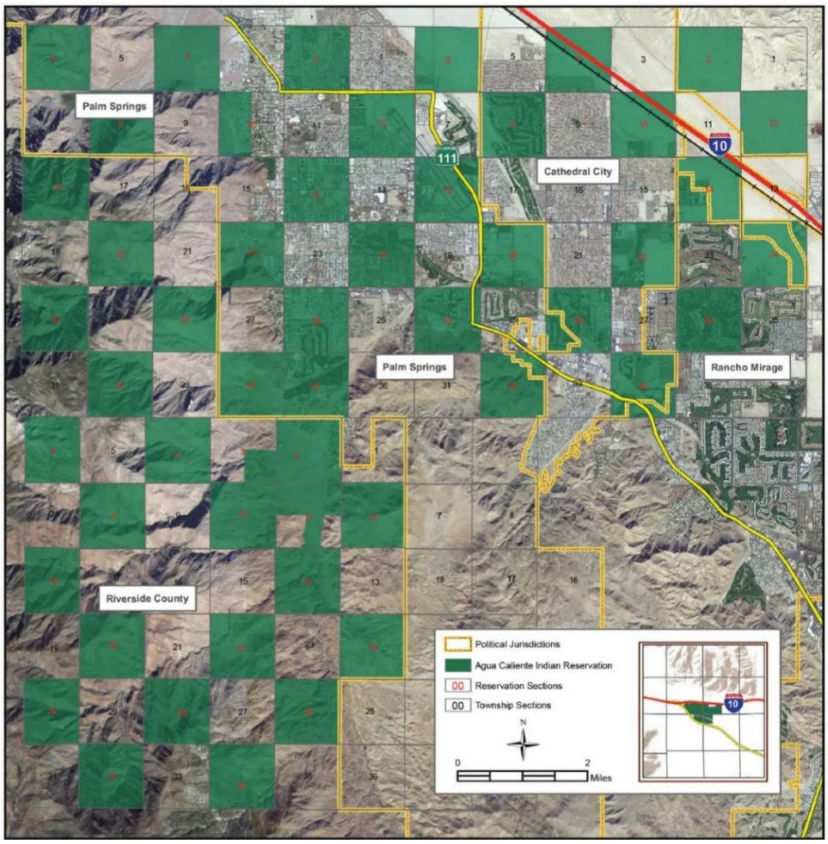
In 1885, San Francisco attorney and former Indian agent John Guthrie McCallum began purchasing property from the Southern Pacific Railroad and other sellers in the Coachella Valley. McCallum and his partners incorporated the Palm Valley Land and Water Company to develop the lands and water resources of the valley. The company falsely claimed federal rights to divert water from Tahquitz Creek and other

[138] During the Spanish and Mexican periods, some Cahuilla lands in the San Gregorio Pass and Coachella Valley were used for cattle grazing. In general, however, the area "was not well known to the Spanish-Mexican population," and the Cahuilla "maintained their political and economic autonomy." (Bean 1972, 1978)

tributaries of the Whitewater River system. With Tribal members serving as laborers, the company constructed a 19-mile irrigation ditch to convey the water into the valley to irrigate 80 acres of orchard and vineyard lands and to serve 137 parcels of land that the company sold for residential, commercial, and farming uses. This project was the catalyst for the development boom that swept through the valley in the first decades of the 20th century. (Nieman 2025)

FIGURE 10

The Agua Caliente reservation



SOURCE: Agua Caliente Band of Cahuilla Indians.

NOTE: This map shows the lands of the Agua Caliente Indian Reservation. The reservation lands are highlighted in green.

Twentieth Century Conflicts

Development in the Coachella Valley almost immediately strained groundwater supplies. By 1913, there were approximately 400 wells in the valley and 4,000 acres in irrigated agriculture—including alfalfa hay, sweet potatoes, watermelons, table grapes, cantaloupe, and dates. The increased pumping rapidly lowered the groundwater table. The artesian springs, which had supplied the Agua Caliente and other Desert Cahuilla for thousands of years, disappeared. By 1918, the irrigated lands in the valley increased to 8,000 acres. By this time, the Agua Caliente People had lost almost all access to groundwater and surface water.

The Tribe was able to irrigate only about 40 to 50 acres of reservation lands. (Coachella Valley Water District 2018; Bremer 2024)

The California Legislature established the Coachella Valley Water District (CVWD) in 1918. The district's initial task was to stabilize the valley's groundwater supplies by securing the water rights to the Whitewater River system and importing water from the Colorado River.[139] The imported water did not arrive in the valley, however, until 1949 when the district completed construction of the Coachella Canal. By then, irrigated acreage had grown to 19,000 acres, and the City of Palm Springs had become a famous tourist destination. Five years later, there were approximately 50,000 acres of land under cultivation and 51,000 long-term residents in the valley. (Coachella Valley Water District 2018) Land development and water use had simply outpaced the water supply infrastructure.

In 1961, the Legislature created the Desert Water Agency (DWA) to manage the groundwater of the western Coachella Valley and to provide water service to Palm Springs and Cathedral City. That same year, CVWD and DWA signed contracts with the California Department of Water Resources to purchase State Water Project water derived from the Sacramento River system. (Desert Water Agency 2021) Because there is no physical connection between DWR's California Aqueduct and the Coachella Valley, the two agencies signed a long-term exchange agreement with the Metropolitan Water District in 1973. Pursuant to this agreement, MWD delivers water from the Colorado River to CVWD and DWA in exchange for equal quantities of the two agencies' annual SWP entitlements. The exchange water is delivered via MWD's Colorado River Aqueduct and is diverted into two groundwater recharge facilities operated by CVWD and DWA. The larger of these, the Whitewater River Groundwater Replenishment Facility, is located upgradient from the Agua Caliente Reservation. (Coachella Valley Regional Water Management Group 2020)[140]

Although the imported water supplies helped to recharge the Coachella Valley groundwater basin, they also facilitated new development. Between 1960 and the end of the century, six new cities were incorporated, more than 100 golf resorts were constructed, the valley's resident population quintupled to 263,000, and millions of tourists visited the region each year.

The effects of this development on the region's groundwater resources were manifold. Cumulative groundwater overdraft from 1936 to 2000 was nearly 4.8 million acre feet, and the groundwater table had dropped by more than 60 feet. The excessive groundwater extractions also have caused land subsidence and contributed to increased concentrations of arsenic and other contaminants in the aquifer. Moreover,

---

[139] In 1938, the Riverside County Superior Court entered final judgment in a basin-wide adjudication of all water rights to the Whitewater River system. The judgment awarded 119,000 afa of water diverted from the main river and its tributaries to CVWD for the purpose of groundwater storage and water supply within its service areas in the Coachella Valley. The judgement also granted water rights to the Agua Caliente and Morongo Bands described below. (Riverside County Superior Court 1938)

[140] MWD benefits from the exchange agreement, because SWP water is of a higher quality than Colorado River water. CVWD and DWA benefit, because they obtain actual Colorado River water to replace the SWP entitlements that they otherwise could not put to use. Although there have been proposals to construct a branch of the California Aqueduct to allow direct SWP service to the Coachella Valley, the infrastructure costs remain prohibitively expensive. (Coachella Valley Regional Water Management Group 2020) Since 1973, more than 3.7 million-acre feet of Colorado River water has been recharged into the Indio Subbasin via the Whitewater River Groundwater Replenishment Facility. (Coachella Valley Water District 2023) In 2023, the US Bureau of Land Management approved the renewal of the right-of-way and expansion of the delivery capacity of the canal that transports water from the Colorado River Aqueduct to the Whitewater River recharge facility. (US Bureau of Land Management 2023)

the imported water itself created water quality problems as the Colorado River water is higher in salts, nutrients, and other pollutants than the native waters of the basin. (Coachella Valley Regional Water Management Group 2020) Because the Whitewater River Replenishment Facility is upgradient from the Agua Caliente Reservation, the Tribe and its members are especially affected by the diminished water quality. (Native American Rights Fund 2017)

Throughout this period of intensive development, the Agua Caliente persevered on their reservation lands. The 1938 judgment in the Whitewater River adjudication confirmed the United States' right to divert 4.8 cfs from Tahquitz Creek and 6.0 cfs from Andreas Creek for domestic, stock watering, power production, and irrigation uses on the Agua Caliente Reservation. The priority dates for the Tahquitz Creek and Andreas Creek appropriative rights are 1884 and 1893, respectively. (California Superior Court 1938)[141] These state water rights, although small, provided water for domestic uses and small-scale irrigation within the reservation.

Despite the extensive water development within the Coachella Valley, the Agua Caliente's rights to the groundwater underlying the reservation remained unsettled, and the Tribe relied on CVWD and DWA for almost all of its water service. (US Court of Appeals 2017a; Stetson Engineers 2025) Beginning in the late 1990s, the Tribal Council attempted to persuade CVWD and DWA to recognize the Tribe's rights to a share of the waters of the Indio subbasin of the Coachella Valley groundwater basin, to control aggregate pumping, and to address its long-standing concerns about water quality degradation from the imported Colorado River water. These efforts failed, however, and the Tribe filed suit against the districts in 2013 to confirm and quantify its federal reserved water rights. (Bass 2018)

Judicial Confirmation of the Tribe's Federal Reserved Rights

In 2015, the US District Court for the Central District of California ruled in favor of the Tribe. It held that the United States reserved groundwater for use by the Tribe when it established the Agua Caliente Reservation in 1876 and expanded it in 1877. The Court also rejected CVWD's and DWA's arguments that the federal reserved rights doctrine applies only to surface water. On appeal, the Ninth Circuit affirmed. (US District Court 2015)

The Court of Appeals explained that the *Winters* doctrine "was developed in part to provide sustainable land for Indian Tribes whose reservations were established in the arid parts of the country. And in many cases, those reservations lacked access to, or were unable to effectively capture, a regular supply of surface water." It noted that, in the Coachella Valley, "surface water is virtually nonexistent . . . for the majority of the year" and that "almost all of the water consumed in the region comes from the aquifer underlying the valley." The court concluded: "Given these realities, we can discern no reason to cabin the *Winters* doctrine to appurtenant surface water. . . . The creation of the Agua Caliente Reservation

[141] The 1938 judgment also recognized the Whitewater Ranch's appropriative rights to divert 3.75 cfs from the Whitewater River with a priority of 1850. The Agua Caliente Tribe subsequently acquired these lands and water rights. The 216-acre former ranchlands, which the Tribe owns in trust, are located approximately four miles northwest of the original reservation.

In addition, the judgment confirmed the federal government's rights to divert 2.0 cfs from Hathaway Creek and 7.0 cfs from Potrero Creek for use on the Morongo Reservation and Mission Creek Indian Reservation, respectively. (Riverside County Superior Court 1938)

therefore carried with it an implied right to use water from the Coachella Valley aquifer." (US Court of Appeals 2017a)

The case returned to the District Court for determination of three related questions: (1) Does the Tribe own the "pore space" within the groundwater basin, which would enable it to store its own water within the basin? (2) Does the Tribe's federal reserved water right include the right to receive water of a certain quality? (3) What quantity of groundwater does the Tribe hold pursuant to its reserved rights?

On remand, the District Court ruled that the Tribe lacked standing to adjudicate the second and third claims because it had not proved that it is "currently unable to use sufficient water to fulfill the purposes of the reservation" or that its "need for water will increase in the future such that its use will conflict with [CVWD's and DWA's] use." (US District Court 2019) The Tribe began pumping some groundwater in 2019, and the court allowed it to amend its complaint to attempt to establish standing. The following year, the Agua Caliente Tribal Council, the water agencies, and the United States began settlement negotiations facilitated by a third-party mediator. The parties signed a settlement agreement in May 2025.

The Settlement Agreement

The Agua Caliente Band of Cahuilla Indians Water Rights Settlement Agreement recognized the Tribe's federal reserved rights to groundwater and quantifies its annual production rights at 20,000 acre feet.[142] Tribal extractions within this 20,000 afa Tribal water rights are not subject to the water agencies' replenishment assessment charges (i.e., volumetric fees on groundwater pumping) that it charges other users. (Agua Caliente Band of Cahuilla Indians 2025)[143]

According to the agreement, the Tribe may use its water "for any lawful purpose" within the Indio Subbasin. Although it may use, lease, or exchange water outside the boundaries of the reservation, the Tribe must obtain prior approval from CVWD and DWA. The Settlement Agreement also stipulated that the maximum term of any lease, exchange, or distribution of water from the Tribal water right, including renewals, shall not exceed 99 years. (Agua Caliente Band of Cahuilla Indians 2025)[144]

In addition, the agreement recognized that the Tribe and its members shall have the right "to produce and use water from wells, streams, seeps, and springs on the Reservation for traditional and cultural purposes." Neither this water, nor the water the Tribe and its members use at the Agua Caliente Hot

---

[142] The 20,000 afa Tribal federal reserved water right represents approximately 35 percent of the average annual natural recharge of the Indio subbasin, which includes infiltration from precipitation and surface streams and subsurface inflows from adjacent subbasins. The natural recharge varies significantly year-to-year, however. For example, in water year 2021-22, natural recharge was 23,897 acre feet. The following year, it was 108,860 acre feet. (TODD Groundwater 2024)

[143] The Settlement Agreement defined authorized Tribal extractions under the Tribal water right as the production of groundwater by the Tribe, tribally owned enterprises, and allottees—both for their own uses and for lease to third-party users. (Agua Caliente Band of Cahuilla Indians 2025) For simplicity, the word Tribe as used in the text to describe the terms of the Settlement Agreement includes these other authorized users of the Tribal water right.

[144] The settlement agreement also acknowledged the Tribe's water rights in the 1938 Whitewater River Decree. The agreement states that the Tribe's use of surface water from Andreas Creek or Tahquitz Creek shall be counted as part of the Tribal water right set forth in the settlement agreement unless the use is less than 25 afa. This also applies to the use of water by allottees within the reservation. In contrast, the agreement states that the Tribe's water right for Whitewater Ranch "is not part of the Tribal Water Right and shall be subject to California law." The two water agencies have pledged, however, that they will not challenge the Tribe's exercise of these rights on any grounds, including loss by abandonment, forfeiture, or non-use. (Agua Caliente Band of Cahuilla Indians 2025)

Mineral Springs (Séc-he) for non-consumptive purposes, is chargeable to the Tribal water right. (Agua Caliente Band of Cahuilla Indians 2025)

CVWD and DWA agreed to continue to deliver water to customers living on the reservation for domestic uses. Deliveries up to the 20,000 afa limitation of the Tribal water right are also exempt from the replenishment charges. The settlement agreement authorizes the Tribe to levy its own replenishment charges and water delivery fees for this water service, however, based on its sovereign authority over its reserved water rights. (Agua Caliente Band of Cahuilla Indians 2025)[145]

The two water agencies also agreed to obtain permits from the Agua Caliente Water Authority for new and existing wells located on reservation lands. The settlement agreement authorizes the Tribe to impose production fees on third-party wells, but the Tribe agreed not to exercise this authority for a period 42 years following the effective date of the agreement. (Agua Caliente Band of Cahuilla Indians 2025)

Although water quality degradation from the imported Colorado River water was one of the factors that led the Agua Caliente to file suit against CVWD and DWA, the Settlement Agreement contains few definitive requirements to protect against the introduction of contaminants and pollutants into the aquifer. Rather, the parties agreed that the storage or recharge of imported water "shall comply with" the Regional Water Board's Water Quality Control Plan for the Colorado River Basin Region, and they promised not to pursue any judicial or administrative action against each other for inadequate water quality involving the storage or recharge of imported water that complies with the basin plan.[146]

The parties agreed to seek $500 million in federal funding and $15 million in state funding to support new infrastructure to facilitate sustainable groundwater management and to enhance water quality within the basin. (Agua Caliente Band of Cahuilla Indians 2025)

In November 2025, Representative Ken Calvert introduced H.R. 5935, the Agua Caliente Band of Cahuilla Indians Water Rights Settlement Act." The legislation recognizes the Tribal water right to produce and/or use up to 20,000 afa of groundwater from the Indio Subbasin with a priority date "no later than the 1876 and 1877 Executive Orders establishing the Reservation." It defines this Tribal water right as "prior and paramount to all rights claimed by the Water Districts to Native Groundwater in the Indio Subbasin. H.R. 5935 also confirms the Tribe's water rights set forth in the 1938 Whitewater River Decree as described and acknowledged in the Settlement Agreement. (US House of Representatives 2025b)

In addition, the legislation authorizes the appropriation of $500 million, which would be placed in the "Agua Caliente Settlement Trust Fund" for disbursement to the Tribe. $300 million is allocated to water supply and water quality infrastructure, including expansion of the recycled water project operated by the Tribe and DWA that would provide tertiary treatment to produce water for non-potable uses within the reservation. $100 million is for Tribal reimbursement of investments made (or to be made) by the water

[145] Subject to certain conditions, the water agencies may collect these charges and fees on behalf of the Tribe, or the Tribe may collect them directly. (Agua Caliente Band of Cahuilla Indians 2025)

[146] The water agencies also pledged to "work to maintain TDS [total dissolved solids] levels in the groundwater used to supply water on the reservation *within the limits established in the Basin Plan* to protect beneficial uses and *within other requirements of federal or state law.*" If TDS levels exceed these limits, the agencies also agreed to "treat the water at the wellhead or in another effective fashion" before delivering water to users on the reservation for domestic uses. (Agua Caliente Band of Cahuilla Indians 2025, emphasis added)

agencies in various projects to augment imported water supplies and groundwater recharge. $50 million would fund Tribal water management programs. The remaining $50 million would help to defray Tribal water-related operation and maintenance expenses. The legislation states that the Tribe would hold title to all projects constructed with this funding. (US House of Representatives 2025b)[147]

The legislation also authorizes the Tribe to impose its own possessory interest tax on non-Indian leases within the reservation. This tax would replace California's possessory interest tax, which the legislation would expressly preempt. Through cooperative agreements, this tax would continue to fund local schools and other beneficiaries and would secure long-term revenues to support Tribal governmental programs, including sustainable management of the Tribe's water resources. (US House of Representatives 2025b)

Finally, H.R. 5935 redesignates six parcels of federal land, totaling 2,742 acres, as Tribal trust lands. These lands would be incorporated into the Agua Caliente Reservation. Subject to various conditions and approvals, the legislation also authorizes the sale of 13 parcels of federal land, totaling 842.4 acres, to CVWD. (US House of Representatives 2025b)

In other respects, the legislation generally approves the terms of the Settlement Agreement as described above. If enacted, the law would become enforceable once the Secretary of the Interior confirms that any conflicts between the Settlement Agreement and the statute have been resolved and the federal district court has approved the settlement and entered final judgment. (US House of Representatives 2025b)[148]

The Benefits of Tribal Groundwater Rights and Water Management

In 2019, the Tribal Council enacted a Tribal Water Code and created the Agua Caliente Water Authority to administer the Tribe's groundwater "for the purposes of protecting the public health, safety, welfare, and economic security of the Tribe, Tribal Members, Tribal entities, and the Reservation community." The ordinance requires anyone who is currently "producing the Tribe's groundwater," or who intends to produce the Tribe's groundwater or drill a new well within the Reservation, to obtain a permit issued by the Water Authority. It also authorizes the Water Authority to levy groundwater production fees.[149] The ordinance applies to both Tribal members and other persons or entities. (Agua Caliente Band of Cahuilla Indians 2026)

The Settlement Agreement recognized the Tribal Water Authority and incorporated the provisions of the Tribal Water Code as modified by the terms of the agreement. As described above, for example, the agreement exempts wells operated on reservation lands by CVWD and DWA from Tribal production fees and it suspends for 42 years the application of these fees to third-party wells.

---

[147] The $15 million in requested state funding set forth in the Settlement Agreement would help fund the recycled water project described in the text and other Tribal water resources development. (Agua Caliente Band of Cahuilla Indians 2025) The California Legislature has not yet acted on this request, however.

[148] At the time of publication of this report, the legislation remains pending before the House Committee on Natural Resources. (US House of Representatives 2025b)

[149] As of 2024, the Agua Caliente Water Authority had issued 19 groundwater production permits, which authorize pumping from wells within the reservation. These permittees extracted a total of 9,804 acre feet of groundwater in 2024. The Tribal groundwater production fee is currently $89 per acre foot. (Stetson Engineers 2025)

The Agua Caliente Water Rights Settlement Agreement is a long-overdue confirmation of the Tribe's ancestral use of, and federal reserved rights to, the groundwater resources of the Coachella Valley. The quantified water rights afford the Tribe the opportunity to realize some of the economic value of its ancestral endowment—both to serve the Tribe's own members and business endeavors and to earn income from on- and off-reservation sales and leases. This income, in turn, can help the Tribe support and sustain its water supply and distribution infrastructure, water quality and recycling projects, contributions to groundwater replenishment, and other programs for the general benefit of its members.

The Settlement Agreement also recognizes the traditional and cultural value of water for the Agua Caliente Tribe and its members. Confirmation of the Tribe's rights ancestral rights to access and use the waters of Taquitz Canyon, Séc-he, and other "wells, streams, seeps, and springs" is an integral part of the agreement.

In addition, Settlement Agreement grants the Agua Caliente Tribe a greater role in managing the waters of the Indio Subbasin—both native and imported—to pursue the common goals of achieving sustainability and improving water quality and water supply reliability. Although it is too soon to reach even a tentative judgment, the partnership between the Tribe and the two water agencies could be one of the most significant aspects of the agreement.

Congressional approval of the Settlement Agreement, accompanied by funding for the water-related projects proposed by the parties, would serve all of these purposes.

Part 7: Tribal Reserved Water Rights for Instream Uses

Two Tribes in Northern California—the Yurok Tribe and the Hoopa Valley Tribe have federal reserved water rights for instream flows in the Klamath River. These reserved water rights support ancestral hunting, fishing, and ceremonial practices. Although the Tribal water rights are not precisely quantified, the federal courts have held that—at a minimum—the Tribes are entitled to a sufficient volume and flow in the Klamath River to support the survival and propagation of coho salmon, which are listed as a threatened species under state and federal law.

Pre-Contact History and Establishment of the Yurok and Hoopa Valley Reservations

The Klamath River originates in the Cascade Mountains and Modoc Plateau and flows more than 250 miles from the wetlands and lakes of Southern Oregon and Northeast California to the Pacific Ocean. The aboriginal river was fed by artesian springs in its upper basin, flood flows from the Lost River system, and inflows from its principal tributaries—the Shasta, Scott, Salmon, and Trinity rivers—as the river cut its channel through the Klamath Mountains. (US Bureau of Reclamation et al. 2016)

The river was central to the lives of the Native Peoples of the basin. The Shastan, Karuk, and Yurok People built their homes and villages along its banks, while the Hupa populated the valley of the Trinity

River above its confluence with the Klamath.[150] The Tribes used the Klamath River for trade and transportation, and they hunted and fished in its waters.[151] (Bright 1978; Wallace 1978b; Pilling 1978) And they defined themselves in relation to their respective locations along the river. The ancient Yurok called themselves "Pu lik la"—the Downriver People. The modern Tribal name was coined by the Karuk, who called their downstream neighbors "Yúruk." In turn, the Yurok referred to the Karuk and Hupa as "Pey-cheek-lo'"—the Upriver People. (Pilling 1978; Yurok Tribe 2026a) The Yurok called the Klamath River "Heyl-keek 'we-roy"—the river that comes from the mountains. (Cordalis 2026)

The Klamath River fishery was one of the largest and most biodiverse on the West Coast. Its cold, fast-flowing waters, and gravel-bedded tributaries supported an array of anadromous fishes—including Chinook, coho, steelhead, green sturgeon, Pacific lamprey, and eulachon—as well as coastal cutthroat, stickleback, coastrange sculpin, and prickly sculpin. (Moyle 2002; Yurok Tribe 2026a)[152] The Tribes constructed weirs in the river to enable them to catch fish with nets, baskets, and spears, and they built dams on the smaller tributaries to entrap migrating salmon and steelhead.[153] They hunted deer, elk, and smaller game along the river and in the mountain valleys; and they harvested shellfish and hunted shorebirds along the coast. (Sloan 2011) The Tribes also gathered acorn, herbs, seeds, tubers, and brodiaea, and cut redwood, cedar, and fir trees for construction of villages, homes, piers, and canoes (Heizer and Elsasser 1980; Anderson 2005)

Before contact, the Lower Klamath River Tribes occupied more than six million acres of the Klamath Mountains, river valleys, and coastal estuaries. Their remote location protected them throughout the century of Spanish and Mexican colonization of Alta California. Although they occasionally encountered English, American, and Russian fur trappers, their lands remained largely unexplored and uncharted. That changed with the Gold Rush, however, as prospectors flocked to the region. (Sloan 2011) They were followed by a series of armed expeditions of militia, vigilantes, "Indian hunters," and slavers bent on

---

[150] The Shastan People also inhabited broad swath of territory that included the Shasta, Scott, and Salmon River watersheds. (Silver 1978)

[151] The Ewksiknii (Klamath), Modoknii (Modoc), and Numu (Yahooskin Northern Paiute) People lived further upriver. The Klamath Tribes occupied the Upper Klamath Lake area, including Klamath Marsh and the Sprague and Williamson rivers. The Modoc Tribes lived in the Tule Lake and Lost River watershed. The Yahooskin Bands' ancestral lands extended eastward from those of the Klamath and Modoc into the high Oregon deserts. (Oregon History Project 2025; Modoc Nation 2026) In 1864, the United States "merged" the three groups into a single "Klamath Indian Tribe" and confined them to a 1.8 million-acre reservation along the Klamath River. In 1954, however, Congress terminated both the Tribe and the reservation. Congress reestablished federal recognition of the Tribe in 1986 and created a new Klamath Reservation. The current reservation consists of 12 non-contiguous parcels of land totaling 308 acres. (Oregon History Project 2025; Klamath Tribes 2025)

[152] Although some Chinook salmon and steelhead would spawn as far upriver as Upper Klamath Lake, the point where the Klamath River crosses from Oregon into California is roughly the dividing point between its upper and lower basins. The Klamath is sometimes called an "upside-down river." Its upper reaches are relatively flat valley marshlands with low gradients and slow-moving water. As the river flows downstream, it enters mountain canyons surrounded by temperate rainforests before emptying into its coastal estuary. (NOAA Fisheries 2023) Thus, the upper basin is home to a variety of freshwater dispersant fishes—including Klamath Lake sculpin, slender sculpin, shortnose sucker, and Lost River sucker—while the lower basin provides prime habitat for the anadromous fishes described in the text. (Moyle 2002)

[153] As noted above in the general history section, the Yurok and Hupa granted some Tribal families exclusive rights to designated eddies for netting salmon and taking eels. These rights could be passed on to family members at death, and they could be sold or traded. (Leshy 1993) The Yurok also created exclusive use rights in several other resources, including designated acorn gathering places, wild tuber beds, and tobacco-growing plots. (Pilling 1978)

clearing the ancestral lands by removing the native inhabitants. (National Research Council 2004; Madley 2016)

The gold miners overran the Karuk and Shastan Peoples, destroying their villages and displacing them from their ancestral lands.[154] The miners also despoiled the Klamath River and its tributaries with sediment, mine tailings, mercury, and other pollutants dislodged by prospecting and hydraulic mining. The new industry attracted farmers, ranchers, and merchants who supplied food and other goods to the miners. These settlers in turn cut timber to build their homes and villages, drained wetlands to grow crops to create pasture, and built irrigation works to bring water to their fields. The most extensive agricultural and related development took place in the Shasta, Scott, and Trinity River valleys. (National Research Council 2004)

In an effort to protect the surviving Indians from further violence—and to facilitate the opening of the Klamath River basin to mining, timber harvesting, commercial fishing, and white settlement—President Franklin Pierce created a "Klamath River Reservation" in 1855.[155] A principal purpose of the reservation was to allow the inhabitants to continue living, fishing, and hunting along the river and in the coastal estuary.[156] The reservation was therefore centered on the Klamath River, with one square mile on each bank extending 20 miles from Tectah Creek to the Pacific Ocean. Although the United States established the reservation for the "benefit" of all of the Lower Klamath River Tribes, only the Yurok and a few Tolowa People (who were removed from their ancestral lands in the Smith River watershed) inhabited the early reservation. (Sloan 2011)

The Klamath River Reservation originally included Fort Terwer, which housed US Army troops, and a federal Indian Agency at Waukel. The federal government abandoned these facilities in 1862 after they were damaged by successive floods. The United States did not terminate the Klamath River Reservation, however, and members of the Yurok Tribe continued to live there in reconstructed homes and villages. (Sloan 2011)

As new settlers, prospectors, and timber interests were drawn to the region after the conclusion of the Civil War, conflicts between the Native inhabitants and non-Indian trespassers and squatters escalated. In 1864, the United States created a reservation for the Hupa People in the Trinity River valley. (US

---

[154] The gold miners were especially harmful to the Karuk Tribe. In 1852, after a series of clashes, gold miners "burned most of the Indian towns as far north as the Salmon River, and the Indians fled to the hills. When the Indians returned, they found whites' homes and farms on their village sites. . . . Subsequently, some of the refugees were given permission to build houses in unoccupied places near the farms and thus began their unattached existence." (Bright 1978)

[155] The Klamath River Reservation should not be confused with the upriver Klamath Indian Reservation that would be created 15 years later for occupation by the Klamath, Modoc, and Yahooskin Tribes described above.

[156] The US Indian Agent in Northern California wrote to the Commissioner of Indian Affairs in Washington: "The river is abundantly supplied with Salmon. A fine large fish quite easily taken by the Indians and which is very properly regarded by the Indian as his staff of life." The letter is important because it "describes several aspects of Yurok land use and their relationship to the river." Whipple observed that the Yurok People used the entire watershed of the lower reaches of the Klamath River, and he described the Lower Klamath as "the best salmon fishing grounds in northern California." In addition, Whipple noted the "large alluvial terraces along the floodplain of the river that were used to gather a wide variety of plants, roots, and berries for food and supplies." (Sloan 2011)

Congress 1864)[157] The boundaries of the reservation were not well defined, however, and President Ulysses S. Grant established a new Hoopa Valley Reservation by executive order in 1876. The reservation comprised of twelve square miles of land on both sides of the Trinity River just above its confluence with the Klamath River. On its northern boundary, the reservation included an approximately one-half mile stretch of the Klamath River. Although a few Yurok were removed to the new reservation, most of the Yurok remained on their own reservation lands. (Wood 2008; Sloan 2011)

In 1891, President Benjamin Harrison signed an executive order that merged the Hoopa Valley and Klamath River reservations. The order also extended the Klamath River Reservation approximately 25 miles upstream to connect it with the Hoopa Valley Reservation lands. (Wood 2008; Sloan 2011) This ostensibly included more Yurok villages, fishing sites, and uplands agricultural lands within their newly designated protected homeland. In 1892, however, Congress enacted legislation that opened *all* of the former Klamath River Reservation lands to homesteading, timber harvesting, and mining. Tribal inhabitants were granted the right to apply to the Secretary of the Interior for individual allotments. But the statute exempted from Indian allotment "lands settled upon, improved, and now occupied by settlers in good faith"—unless the Indian applicant could prove that he had resided on the tract at issue in good faith for at least four months before enactment of the legislation. (US Congress 1892)[158]

In the ensuing decade, many Yurok People were displaced from their traditional villages along the Klamath River, and they relocated to the Hoopa Valley portion of the combined reservation. Non-Indian inhabitants and resource users came to dominate the landholdings in the former Klamath River Reservation and in the northern portion of the combined reservation, which were opened under the Dawes Act. These allotments account for most of the non-Tribal presence on the Yurok and Hoopa Valley Reservations to this day. (Sloan 2011)

The Hupa and Yurok People lived on the combined reservation for almost a full century. Then, in 1988, Congress enacted legislation to separate the Hoopa Valley Reservation from the former Klamath River Reservation (as extended in 1891). The legislation also renamed the former Klamath River reserved lands the "Yurok Reservation." (US Congress 1988b)[159] See Figure 11.

---

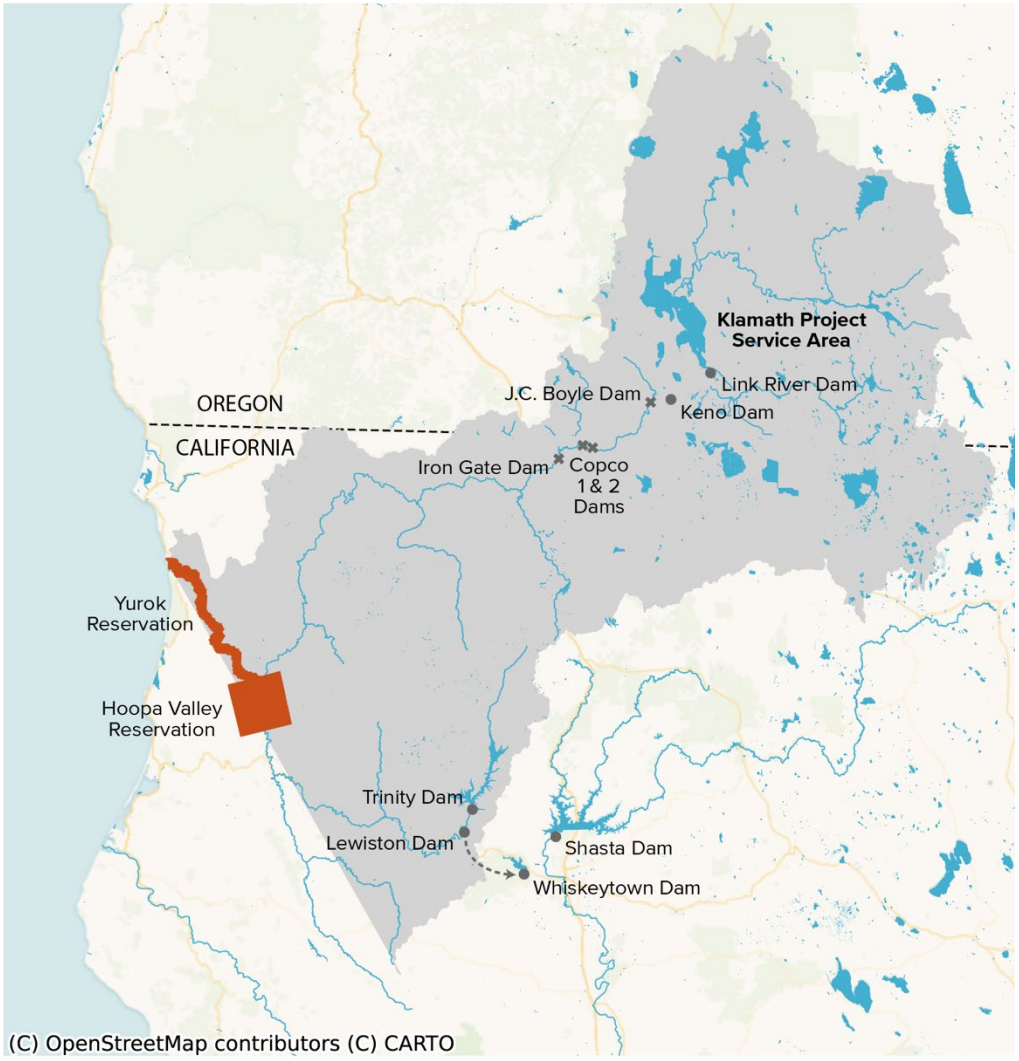
[157] The Department of the Interior established the Hoopa Valley Indian Reservation pursuant to authority granted by Congress earlier that year. The legislation authorized the creation of up to four new Indian reservations within California, "which shall be of suitable extent for the accommodation of the Indians of said state, and shall be located as remote from white settlements as may be found practicable having due regard to their adaptation to the purposes for which they are intended." (US Congress 1864)

[158] The question whether the 1892 Act terminated the Klamath River Reservation was contested for more than 80 years. In 1973, in *Mattz v. Arnett,* the US Supreme Court held that it did not. The Court reasoned that "Congress was fully aware of the means by which termination could be effected. But clear termination language was not employed in the 1892 Act. This being so, we are not inclined to infer an intent to terminate the reservation." (US Supreme Court 1973)

[159] The partition legislation excluded from the Yurok Reservation the lands of the Resighini Rancheria, which the United States acquired in 1938 and set aside for the Pulikla Tribe of Yurok People. The rancheria is comprised of 228 acres of land on the south side of the Klamath River just east of US Highway 101. It is completely surrounded by the Yurok Reservation. The Pulika and Yurok Tribes have been engaged in a long-running dispute over fishing rights and Tribal regulatory authority. (Pulika Tribe 2025; Del Norte Triplicate 2025)

FIGURE 11

The Yurok and Hoopa Valley reservations



SOURCE: Reservation boundaries are obtained from the US Bureau of Indian Affairs. California lake, river, and stream boundaries are obtained from the USGS National Hydrography (NHD) dataset. Oregon lake, river, and stream boundaries are obtained from modified versions of the NHD datasets provided by Oregon State University and the State of Oregon. The Klamath watershed boundary is obtained from the USGS Watershed Boundary dataset. Dam locations were manually plotted using latitude and longitude coordinates. Basemap features from OpenStreetMap contributors under the Open Database License.

NOTE: This map shows the locations of the Yurok Reservation along the Lower Klamath River and the Hoopa Valley Reservation. Approximately one-half mile of the Hoopa Valley Reservation borders the Klamath River; most of the reservation is within the Trinity River watershed. The map also shows the location of the Klamath Project on the Upper Klamath River, as well as the former sites of the four dams that were removed from the middle stretch of the river below Keno Dam in 2023 and 2024. Finally, the map shows the Central Valley Project facilities that divert water from the Upper Trinity River into the Sacramento River Basin.

Decline of the Klamath River Fishery

The cumulative effects of goldmining, timber harvesting, road construction, and conversion of wetlands and riparian habitat to farms and ranches were devastating to the Klamath River ecology and to the remaining Indigenous inhabitants. Significant spawning habitat was lost, water quality was diminished,

fish populations declined, surviving fish were contaminated, and Tribal access to their most essential food resources were limited. (National Research Council 2004) This destruction of Tribal livelihoods and culture continued unabated well into the 20th century.

In the early 1900s, commercial fishing dominated the Klamath River. Tribal fishers were crowded out, and (non-Indian) canneries were established at the mouth of the river. In 1933, the California Department of Fish and Game closed the lower Klamath River fishery because of overharvesting. Traditional Tribal fishing practices—including the use of weirs, nets, and baskets—were prohibited for the next 40 years. (Sloan 2011)[160]

The second blow to the Klamath River fishery was the US Bureau of Reclamation's construction of the Klamath Project, which began in 1906 and expanded in stages over the next two decades. (Stene 1994) The project includes three main reservoirs and four regulating reservoirs on the tributaries of the Upper Klamath River. The total active storage in the principal reservoirs is just over one million acre feet. (US Bureau of Reclamation 2024a) Historically, the Klamath Project has diverted about 1.3 million afa to supply irrigation water to approximately 260,000 acres of farms and ranch lands in Southern Oregon and Northeast California.[161] The project contractors use this water to irrigate alfalfa, hay, wheat, pasture, small grains, potatoes, and other crops. (US Bureau of Reclamation 2024a)[162] Project operations reduce the volume of water in the Lower Klamath River, alter the timing of inflows, and impair water quality. The combined effects of these stressors have threatened the downstream fishery. (National Research Council 2004; National Marine Fisheries Service 2024a)

A third blow was the construction of five privately owned hydroelectric power dams on the Klamath River from just below the Klamath Project downriver into California.[163] These dams blocked salmon and steelhead from migrating upstream, thus eliminating more than 400 miles of spawning grounds and rearing habitat on the main river and its tributaries. Dam operations increased water temperatures and altered flows. These changes caused the salmon and steelhead to crowd into small "thermal refuges" where river water temperatures were relatively lower. The crowding, in turn, placed the fish at greater risk of infection and disease. (National Research Council 2004; Klamath River Renewal Corporation 2025a)

Water diversions and loss of spawning habitat on the tributaries compounded these events. Irrigated farmland and pasture in the Scott and Shasta River valleys grew to 30,000 acres and 50,000 acres,

---

[160] The US Supreme Court's decision in *Mattz v. Arnett* (1973) that Congress had not terminated the Klamath River Reservation rendered these state law fishing restrictions unlawful as applied to fishing within the boundaries of the combined Hoopa Valley-Klamath River Reservation. (US Supreme Court 1973)

[161] The Project serves about 230,000 from water stored in Upper Klamath Lake on the main stem of the Klamath River. Reservoirs in the Lost River system, which is a tributary of the Klamath River, serve the remaining 30,000 acres. Project reservoirs are also the primary source of water for the Lower Klamath and Tule Lake National Wildlife Refuges. (US Bureau of Reclamation 2024a)

[162] The Bureau of Reclamation describes the vast majority of its more than 160 contractors as holding "perpetual contracts." The Klamath Project is also the primary source of water for the Lower Klamath and Tule Lake National Wildlife Refuges. (US Bureau of Reclamation 2024a)

[163] These dams were constructed between 1911 and 1962. As described below, four of the dams—JC Boyle, Copco No. 1, Copco No. 2, and Iron Gate—were removed in 2023 and 2024. Keno Dam, the fifth and furthest upstream, does not generate hydroelectricity. Rather, it served as a regulating reservoir for the four downriver dams. Keno Dam is now owned and operated by the US Bureau of Reclamation. (National Research Council 2004; NOAA Fisheries 2024b)

respectively. Surface water diversions and extraction of hydrologically connected groundwater severely depleted flows in the Shasta and Scott Rivers, which further diminished salmon and steelhead spawning areas and, in some years, completely dewatered the rivers. (National Research Council 2004)

Then, in 1964, the Bureau of Reclamation began diverting water from the upper Trinity River basin into the Sacramento River system to augment Central Valley Project supplies.[164] The construction of Trinity Dam and the downstream Lewiston re-diversion dam blocked 109 miles of spawning and rearing habitat for salmon and steelhead. In addition, reservoir operations fundamentally changed the hydrology and ecology of the system. Trinity Reservoir has a storage capacity of 2.5 million acre feet, which is almost double the average inflow from the upper watershed. For the first decade of operations, the project depleted downstream flows by an average of 89 percent. (National Research Council 2002)[165]

"Low water flows imposed what was essentially extreme drought conditions for more than thirty years. Without the large spring melt-off flows, heavy vegetation grew on the banks, narrowing the river channels, making the banks steeper, and preventing the river channel from changing shape. Water velocities under these conditions became faster and more uniform, with fewer shallow areas adjoining the banks and pools. Decreased flows also meant that fine sediment trapped in the spaces between the riverbed rocks was not flushed away, spoiling spawning grounds by decreasing oxygen flows to eggs and trapping young fish. Releases from the dams affected water temperature-water was too hot during the winter months, owing to the lack of flow, and too cold during the summer because water is released from lower, cooler parts of Trinity Reservoir. Unseasonable temperatures signaled the fish to migrate to the ocean at the wrong times or failed to trigger smoltification." (US Court of Appeals 2004)

The reduced flows compounded the habitat degradation from mining, logging, and livestock grazing on the public and private lands in the Trinity River basin.[166] These practices caused erosion and movement of fine sediments into the Trinity River and its tributaries. Although high sediment loads threatened the Trinity River fishery by clogging spawning grounds and reducing oxygen levels, "seasonal high flows associated with winter and spring flood pulses appear to have maintained habitat of reasonable quality, thus preventing a significant decline in steelhead and salmon." The Trinity River Project diversions eliminated these flows, however, and the dams impounded the coarse sediment that previously replenished downstream spawning beds. (National Research Council 2004) By 1980, the population of native Trinity River salmonids had declined by 60-80 percent, and more than 80 percent of aquatic habitat had been lost or degraded. (US Court of Appeals 2004; Mount et al. 2017)

Diversions from the Trinity River have also had deleterious effects on salmon and steelhead in the Klamath River. When combined flows from the Trinity River and Klamath River are low, in-migrating salmonids cluster together and languish in the lower stretch of the river below the confluence. There they

[164] The Trinity River division of the CVP stores water in Trinity Reservoir and releases it into Lewiston Reservoir approximately one mile downstream for re-diversion and transport to Whiskeytown reservoir on the east side of the Coast Range. The Bureau then releases the water into the Sacramento River as needed to serve its water contractors and to meet Delta water quality standards and endangered species requirements. (Stene 1996)

[165] Over the past 25 years (2001-2025), the Trinity River Project has diverted an average of just under 48 percent of the unimpaired flow of the Trinity River system. (Trinity River Restoration Program 2025b)

[166] Approximately 80 percent of the Trinity River watershed is federally owned. These lands are managed by the Bureau of Reclamation and the US Forest Service. (National Research Council 2004)

are exposed to the *Ichthyophthirius multifiliis* protozoa, commonly known as "Ich." (National Research Council 2004) Ich is highly contagious and spreads rapidly from one fish to another, especially when fish are crowded. "Ich is capable of causing massive mortality within a short period of time. . . . If left untreated, this disease may result in 100% mortality." (Francis-Floyd et al. 2016). Ich infection was a contributing factor to the 2002 salmon die-off described in Text Box 3. (National Research Council 2004; Mount et al. 2017)

The aggregate changes in land use, loss of Tribal stewardship of the fisheries, construction of dams, diversions of water, and destruction of spawning habitat throughout the Klamath River system decimated the populations of salmonids and other native fishes. The combined runs of coho salmon, Chinook salmon, and steelhead were reduced from more than 750,000 to a few thousand each year. (Moyle 2002) Coho salmon are protected as "threatened species" under the state and federal Endangered Species Acts. Spring-run Chinook salmon are protected as a threatened species under California law. Spring-run Chinook and green sturgeon are also listed as "species of concern" under federal law. (California Natural Diversity Database 2026)[167] Most of the salmon and steelhead in the river system today are released from fish hatcheries. (Moyle 2002; Natural Research Council 2004)

Various efforts to preserve and restore the Klamath River fishery—including dam reoperation, habitat enhancement, and water rights enforcement—have provided modest long-term benefits. But they also have failed at key moments when water project managers and non-Tribal water users have sought to maximize their allocations during periods of drought and other acute water shortages. See Text Box 3. It is for this reason, that the federal reserved water rights of the Yurok and Hoopa Valley Tribes are likely to play an essential role in protecting both the fishery, the Tribes' ancestral rights to the fishery, and their contemporary interests in serving once again as the stewards of the Lower Klamath River system.

[167] Two fish species that were once abundant in the upper Klamath River basin, but which now exist primarily in the Klamath Project reservoirs—the Short Nose Sucker and the Lost River Sucker—are listed as "endangered species" under both California and federal law. (California Natural Diversity Database 2026) As defined by federal law, a species is endangered if it "is in danger of extinction throughout all or a significant portion of its range," and a species is threatened if it "is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." (NOAA Fisheries 2022) For a comparison of the differences between federal and California definitions, see California Department of Fish and Wildlife (2026b)

Box 3: An Over-Used, Over-Stressed River System

Management of the Klamath River system has become an almost impossible task. In most years, there is not enough water to fulfill all demands on the system—including irrigation uses, endangered species requirements, and Tribal water rights. During wet conditions, reservoir storage is insufficient to capture floodwaters and surplus flows for later use. During dry periods, water allocation to one sector often becomes another sector's loss.

In the "critically dry" year of 2001, for example, the Bureau of Reclamation determined that inflows into Upper Klamath Lake would be 108,000 acre feet—the smallest volume in recorded history. Following consultation with the National Marine Fisheries Service and the United States Fish and Wildlife Service, the Bureau suspended deliveries to project contractors until June when it released 70,000 for irrigation uses. It held the available water in project reservoirs to protect the endangered Short Nose Sucker and the Lost River Sucker. It also released some water into the Klamath River to protect coho salmon, a threatened species. (US Court of Appeals 2019) The decision generated considerable controversy and led to the Baley litigation described in the text below.

The following year was also "critically dry." This time, however, the White House and the Secretary of the Interior ordered the Bureau to prioritize deliveries of the available water to project contactors. (Hamburger 2003) Low flows in the Klamath River increased the risk of thermal stress and disease to in-migrating salmon. In September 2002, more than 33,000 adult salmon—mostly Chinook attempting to spawn—washed up dead along the banks of the Lower Klamath River. Subsequent studies found that inadequate releases from Klamath Project reservoirs and low flows from the tributaries contributed to salmon mortality. (US Fish and Wildlife Service 2003; National Research Council 2004) The Bureau of Reclamation and the federal fisheries agencies have struggled to prevent recurring disasters ever since.

State and federal efforts to ensure adequate flows in the Trinity River basin have also faced significant challenges, especially during conditions of drought. In 2014, another critically dry year, the Bureau of Reclamation rejected pleas by the Yurok and Hoopa Valley Tribes, Trinity County, fisheries biologists, and environmental groups to increase Trinity River releases beyond those set forth in a flow schedule previously approved by the Trinity Management Council. The Bureau explained that it would "release extra water into the Klamath-Trinity system once salmon start dying from drought-related disease, but not before." Its spokesman said that this decision was made to accommodate the Bureau's CVP water supply commitments. (Spencer 2014) When in-migrating Chinook salmon did begin to die from gill rot caused by Ich infestation, reduced oxygen levels, and other factors related to low flows and high water temperatures, the Bureau ultimately released additional water in August and September. This same process was repeated in 2015, which was also critically dry. (Mount et al. 2017)

Recognition of the Tribes' Federal Reserved Water Rights

The rights of the Yurok Tribe and the Hoopa Valley Tribe to catch fish from the Lower Klamath River system have long been recognized. These rights are based both on the purposes for which their respective reservations were established and on the fact that the Tribes have fished from the waters of the Klamath and Trinity Rivers since "time immemorial." State and federal courts have held that a principal purpose of the Yurok and Hoopa Valley Reservations was to preserve the Tribes' ancestral fishing practices and access to the Klamath and Trinity Rivers. Indeed, the US Court of Appeals for the Ninth Circuit has stated

that the "the Tribes' salmon fishery was 'not much less necessary to [their existence] than the atmosphere they breathed.'" (US Court of Appeals 1981, 1995)[168] Although these decisions did not discuss Tribal *water* rights, they did establish the foundation for the subsequent recognition of instream federal reserved rights to support and sustain the Lower Klamath River fishery.

Two earlier cases were especially important. In *Parravano v. Babbitt*, the Ninth Circuit rejected a challenge to emergency regulations issued by the Secretary of Commerce to reduce the allowable ocean harvest of Klamath River Chinook salmon to ensure that enough salmon returned to the river fulfill the Yurok and Hoopa Valley Tribes' fishing rights. The Court confirmed that the Tribes possess "federal reserved fishing rights," which were created when the two reservations were established and which Congress affirmed in the 1988 partition legislation. The Court also found that that these fishing rights "are accompanied by a corresponding duty on the part of the government to preserve those rights." Moreover, because salmon are an anadromous species, "successful preservation of the Tribes' on-reservation fishing rights must include regulation of ocean fishing of the same resource." (US Court of Appeals 1995)

The other key precedent, *United States v. Adair,* addressed the federal reserved water rights of the upstream Klamath Indian Reservation Tribes—the Klamath, Modoc, and Yahooskin. The Ninth Circuit held that those Tribes have federal reserved water rights to the tributaries of the Upper Klamath River in quantities sufficient to support their treaty-based hunting and fishing rights as currently exercised by Tribal members. The court also determined that, because the treaty that established the original Klamath Indian Reservation preserved the Tribes' ancestral hunting and fishing rights, the priority date of the instream Tribal water right was "time immemorial." (US Court of Appeals 1983)[169]

Then, in *Baley v. United States,* the US Court of Appeals for the Federal Circuit addressed the water rights of the Yurok and Hoopa Valley Tribes. The Court held that the Tribes possess federal reserved water rights to enable them to exercise hunting, fishing, and ceremonial use rights within their respective reservations.[170] These rights are nonconsumptive and include "the right to prevent other appropriators from depleting the streams waters below a protected level." Because these instream flow rights were reserved along with the reservation of the lands that comprise the Yurok and Hoopa Valley Reservations, they are among the most senior water rights in the Klamath River system. (US Court of Appeals 2019)[171]

---

[168] The cases that define the scope of the Tribe's fishing rights include: *Elser v. Gill Net Number One* (California Court of Appeal 1966); *Mattz v. Arnett* (US Supreme Court. 1973); *Arnett v. Five Gill Nets* (California Court of Appeal 1975); *Blake v. Arnett* (US Court of Appeals 1981a); *People v. McCovey* (California Supreme Court 1984); *United States v. Eberhardt* (US Court of Appeals 1986); and *Klamath Water Users Association v. Patterson* (US Court of Appeals 1999). For a thorough and influential analysis of the Tribes' hunting and fishing rights, see Leshy (1993).

[169] As described in Part Eight, the *Adair* court also held that the Klamath Tribes' ancestral fishing and hunting rights continue to exist, notwithstanding Congress' termination of federal recognition of the Tribes and termination of the Klamath Indian Reservation in 1954.

[170] One of the most important ceremonial uses of the Klamath River is the Yurok Boat Dance. See Text Box 4.

[171] Both the Court of Federal Claims and the Court of Appeals were a bit vague on the priority date of the Tribes' reserved water rights. The former noted: "Although the Yurok and Hoopa Valley Tribes' reserved rights have not previously been assigned a priority date, the rights must hold a priority date of at least 1891, the year of the last executive order creating their reservation, and possibly even earlier." (US Court of Federal Claims 2017)

Box 4: The Yurok Boat Dance

The Boat Dance is part of a traditional ceremony that the Yurok Tribe conducts in late summer to restore and renew the balance of the world. Tribal religious practitioners dance in large hand-carved redwood canoes on the Klamath River. The ceremony requires stream flows that provide predictable currents and sufficient water for the canoes to pass over rocks and other impediments. If the Boat Dance cannot take place, the Tribe's world renewal ceremony cannot be completed. (US District Court 2023b)

The Boat Dance is one of three World Renewal Ceremonies. The others are the White Deerskin Dance and the Jump Dance. The purpose of the ceremonies is "to maintain the balance between the natural world and its People and to thank the Creator for the many blessings it provided." The Yurok believe that humans "are a part of the ecosystem and have responsibilities to steward the land, water, and animals to maintain balance. The world, however, can become unbalanced if one species . . . takes too much. Then the harmony is disrupted. When the balance is disrupted, bad things happen to the People and the planet, like drought, famine, or war. The ceremonies were meant to restore balance and thereby renew the world." (Cordalis 2025)

The United State banned the World Renewal Ceremonies in the early 20th century. The last recorded Boat Dance occurred in 1939. (Pilling 1978) The late 20th and early 21st centuries have been a time of cultural, spiritual, and ecological restoration, however. "The Jump Dance returned to Pek-won in 1984," and in 2000 "the White Deerskin Dance was held again at the village of Weych-pues." (Yurok Tribe 2026c)

The *Baley* litigation arose from the Bureau of Reclamation's 2001 operation of the Klamath Project, when it suspended water deliveries to irrigation districts and farmers for three months to comply with the biological opinions that govern the project. These biological opinions protected endangered Short Nose and Lost River suckers that inhabit project reservoirs and threatened coho in the Lower Klamath River basin. See Text Box 3. The water users claimed that this decision breached their water supply contracts and constituted a taking of their property, and they sued for damages. The US Court of Federal Claims rejected these claims, and the Court of Appeals affirmed. Although the Tribes' water rights were not directly at issue, both courts relied on the existence and seniority of their instream federal reserved rights to reject the upstream water users' claims.

The courts essentially ruled that the Bureau of Reclamation had not breached its contractual obligations, or taken the contractors' water rights, because those rights were junior in priority to the instream federal reserved water rights held by the Tribes. In times of shortage, both state and federal law require that the available water be allocated on a "first-in-time, first-in-right" basis. Thus, when the Bureau suspended

---

In fact, under the federal reserved rights doctrine, there are three priority dates: 1855 for the original Klamath River Reservation (which is now the lower 20 miles of the Yurok Reservation); 1876 for the Hoopa Valley Reservation; and 1891 for the 25-mile extension of the original Klamath River Reservation to connect it with the Hoopa Reservation. See text above. All three priority dates are senior to the US Bureau of Reclamation's water rights for the Klamath Project and to the derivative rights of its contractors. (US Court of Appeals 2019) It is also possible that a court could determine that the Tribes possess aboriginal water rights to support their retained ancestral fishing rights in the Klamath River. The priority of these rights would be "time immemorial." (US Court of Appeals 1983)

project deliveries to ensure it was able to release enough water to avoid jeopardizing the protected fish species, it was not only complying with endangered species requirements. It also was honoring the priority system by fulfilling its obligations to the Tribes as senior water right holders. As the Court of Appeals explained, the project water users' rights "were subordinate to the Tribes' federal reserved water rights. We therefore see no error in the [district] court's holding that the Bureau of Reclamation's action in temporarily halting deliveries of Klamath Project water in 2001 did not constitute a taking of [their] property." (US Court of Appeals 2019)

The courts did not precisely quantify the Tribal instream flow rights, rejecting arguments by the water users that it should determine how much water must be bypassed or released to ensure the survival of enough fish to allow the Tribes to sustain a "reasonable livelihood" or a "moderate standard living"—criteria that other courts have employed to quantify Tribal *fishing* rights.[172] Rather, the Court of Appeals concluded, "the Tribes' rights entitle them to the government's compliance with the [Endangered Species Act] in order to avoid placing the existence of their important Tribal resources in jeopardy." It therefore affirmed the District Court's judgment that the Tribes have "rights to an amount of water that was at least equal to what was needed to satisfy the Bureau of Reclamation's ESA obligations." (US Court of Appeals 2019)[173] In separate litigation, the US District Court for the Northern District of California confirmed the Tribes' federal reserved water rights in 2023. (US District Court 2023b)[174]

The Yurok and Hoopa Valley Tribes' federal reserved rights to instream flows to support and sustain the Lower Klamath River fishery have several features in common with the Tribal reserved rights described in the preceding Parts of this report:

- The instream water rights are based on the United States' reservation of land as permanent homes for the two Tribes, and their priority date vis-à-vis other water right holders is the date of creation (or expansion) of the reservations.
- The Tribal instream water rights are not subject to state law, and they cannot be lost, forfeited, or reduced for non-use or inconsistency with other requirements of state law.
- The Tribes may exercise their instream rights to require junior water right holders to bypass or release water to fulfill the senior Tribal rights.

---

[172] *United States v. Adair* (US Court of Appeals 1983) and Leshy (1993) contain excellent summaries of these cases.

[173] The courts also rejected the water users' argument that the Tribal water rights apply only to the Klamath River as it flows through their respective reservations. They emphasized that the Upper Klamath River basin is (obviously) hydrologically connected to the Lower Klamath River basin, and that the Klamath Project reservoirs impound water that is part of the Tribal water rights. Moreover, the biological opinion issued by the National Marine Fisheries Service recommended a reservoir release schedule that was "designed to provide suitable habitat and adequate water temperatures and quality" to avoid jeopardizing coho salmon and destruction or adverse modification of its critical habitat. "Thus, while the fish may be taken by members of the Yurok and Hoopa Valley Tribes as they stand on their reservations, the habitat of the coho salmon includes waters both downstream from the reservations and also upstream from the reservations." (US Court of Appeals 2019)

[174] Neither federal court noted that the Yurok Tribe and the Hoopa Valley Tribe have different historical and contemporary interests in the waters of the Lower Klamath River above the confluence with the Trinity River. As described above, the Yurok Reservation includes 45 miles of shoreline on both sides of the Klamath River. The river was, and remains, the spiritual center of Yurok life, and it is the principal source of fish for the Tribe and its members. In contrast, the Hoopa Valley Reservation includes only about one-half mile of shoreline on the south bank of the Klamath River. Although members of the Hoopa Valley Tribe have fished the waters of the Klamath River, the Trinity River was and is the principal fishery of the Hupa People. (Pilling1978; Wallace 1978b)

In other key aspects, however, Yurok and Hoopa Valley Tribes' water rights are different from the Tribal reserved rights discussed previously:

- The Tribes' water rights are tied to their previously recognized "reserved fishing rights." The water rights thus serve traditional Tribal uses (e.g., fishing, navigation, and ceremonial practices), rather than new uses imposed on the Tribes by the federal government (such as irrigated agriculture) when it established most other Indian reservations.
- The Tribal water rights extend only to instream uses—including conservation and propagation of the Lower Klamath River fishery, protection of essential aquatic habitat, and Tribal traditional and ceremonial uses—and the Tribes may not divert or store water for other purposes within their respective reservations.
- The Hoopa Valley and Yurok Tribes may not transfer reserved water to other users—although fulfillment of the Tribes' rights may also benefit other Tribes and other individuals who use the waters of the Klamath River for fishing, recreation, and other instream beneficial uses. For example, the Karuk Tribe—which is located just upriver from the Yurok Reservation—benefits from protection of the Lower Klamath River fishery even though the Karuk do not have their own reservation or their own Tribal reserved water or fishing rights.[175]
- The Yurok and Hoopa Valley Tribes' water rights are less precisely quantified than those of the other Tribes with volumetrically defined reserved rights. The instream water right, which is tied to the health of the Lower Klamath River fishery, may vary as the population and needs of the fishery change.
- The Tribes' instream water rights are also not fully defined. As both the District Court and the Court of Appeals emphasized in *Baley,* the Tribes are entitled to a volume and flow of water that is *at least* equal to that which complies with the Klamath Project's endangered species obligations. If more water is required to protect the assemblage of all fish species in the Lower Klamath River—not just those that are currently listed for protection under the federal Endangered Species Act—then the Tribes would be entitled to those additional flows as well.[176]

Contemporary Issues of Tribal Water Policy

Judicial confirmation of the Yurok and Hoopa Valley Tribes' senior instream water rights has not, of course, resolved all conflicts over the management and allocation of water flowing into and through the Lower Klamath River basin. It has, however, significantly enhanced the Tribes' influence and authority in the continuing negotiations and litigation to protect the Klamath River fishery. Nevertheless, the water management challenges remain immense. Except in extremely wet years, there is simply not enough water to fulfill all demands within the basin.

---

[175] As described in Part Eight, the most of the Karuk Tribe's ancestral lands were incorporated into the Klamath Forest Reserve created by President Theodore Roosevelt's executive order of 1905. (Karuk Tribe 2026)

[176] Because the Tribes' federal reserved water rights have been tied to regulatory flow standards, the actual quantity of water needed to fulfill their rights has not yet been determined. One methodology would be to define a "functional flows" regime to support and sustain the Lower Klamath River fishery. "A functional flows approach does not mandate the restoration of natural flows or the maintenance of historical ecosystem conditions, but rather focuses on preserving key functions—such as sediment movement, water quality maintenance, and environmental cues for species migration and reproduction—that maintain ecosystem health. This approach also recognizes that suitable physical habitat is necessary to support the functions of flowing water." Grantham et al. 2020)

Yet, the Tribes' senior water rights place them in an advantageous legal position, and several recent developments are likely to improve the Lower Klamath River fishery. These include:

- Removal of the four hydroelectric dams on the middle section of the Klamath River that blocked salmon passage, destroyed spawning habitat, disrupted water flows, and altered downstream water quality.
- Funding of habitat improvements and water supply reliability throughout the Klamath River basin.
- New federal regulatory requirements to increase releases from the Klamath Project to facilitate salmon migration and spawning and to enhance ecological conditions within the lower river.
- Flow augmentation in the Trinity River and Klamath River below the confluence.

Klamath River Dam Removal. As noted above, one cause of the decline in the Lower Klamath River fishery was the existence and operation of five hydroelectric power dams that extended from just below the Klamath Project for approximately 62 miles downstream to Iron Gate Dam. The dams were owned by PacifiCorp, a private utility that operated the dams pursuant to a license issued by the Federal Energy Regulatory Commission. The license expired in 2006. Following many years of negotiations, PacifiCorp agreed in 2016 to withdraw its application to renew its FERC license and to transfer title to four of the dams to a newly formed non-profit corporation that would supervise their decommissioning and removal.[177] In accordance with the agreement, PacifiCorp conveyed title to the fifth, Keno Dam, to the Bureau of Reclamation, which now uses the dam to regulate releases from the Klamath Project. (Congressional Research Service 2024; NOAA Fisheries 2024b) See Figure 11.

The dams were removed in 2023 and 2024, and restoration work is ongoing. Removal of the four dams opened more than 400 miles of fish habitat along the Klamath River and its tributaries. When the remaining work is completed, the project will have restored approximately 2,200 acres of formerly submerged lands. (Klamath River Renewal Corporation 2025a) Removal of accumulated sediment, replanting of riparian vegetation, and re-creation of wetlands will restore spawning and rearing habitat for coho salmon, Chinook Salmon, and steelhead and create areas of shade and thermal refuge for the entire fishery. Over time, the river will cleanse itself of residual sediment and imbedded pollutants. The new flow regime below Keno Dam will also increase oxygen levels and reduce temperatures in the main river, which will decrease the risk of disease and mortality. (NOAA Fisheries 2024c)

Although most scientists predicted that it would take about one decade for salmon to recolonize the newly opened Klamath River corridor and its tributaries, restoration of the fishery began at an accelerated pace. Within ten days following completion of the removal of Iron Gate Dam—the furthest downstream structure and the last to be removed—more than "6,000 Chinook salmon were observed migrating upstream into newly accessible habitat over a two-week period." (Civil Engineering Source 2025) Less than a year later, "hundreds of finger-sized juvenile salmon were encountered in Jenny Creek, . . . a key

[177] The KRRC is comprised of a 15-person board of directors, with five members appointed by the Governor of California, four by the Governor of Oregon, one representative each from the Yurok and Karuk Tribes, and four members appointed by environmental and fishery protection organizations. (Klamath River Renewal Corporation 2025b) The dam removal and initial restoration was funded by accumulated PacifiCorp surcharges in Oregon ($184 million) and California ($16 million), and by $250 million from general obligation bond funds authorized by Proposition 1, which was approved by California voters in 2014. (Congressional Research Service 2024)

stretch of salmon habitat and one of the first major tributaries fish encounter as they disperse upstream to historically occupied habitat following dam removals." (Klamath River Renewal Corporation 2025c)

In June and July 2025, a group of Klamath, Shasta, Karuk, Yurok, and Hoopa Valley Tribal members, aged 13-20, kayaked the entire length of the Klamath River—from Chiloquin, Oregon to the Pacific Ocean. They were the first people to do so in more than a century. (Branch 2025; Bennett 2025)

Funding for Habitat Restoration and Water Supply Reliability. In February 2024, then Secretary of the Interior Deb Haaland announced an agreement with the Klamath Tribes, the Yurok Tribe, the Karuk Tribe, and the Klamath Water Users Association "to advance collaborative efforts to restore the Klamath Basin ecosystem and improve water supply reliability for Klamath Project agriculture." She also stated that the federal government would invest more than $72 million in a variety of projects to protect fish populations, enhance the resiliency of aquatic ecosystems, restore wetlands, improve riparian habitat in headwaters areas and on the tributaries to the Klamath River, improve the efficiency of water supply infrastructure, increase the reliability of agricultural water deliveries, and strengthen drought resiliency throughout the system. (US Department of the Interior 2024a)

The purposes of the agreement and funding initiative were to augment the restoration actions undertaken by the Klamath River Renewal Corporation and its partners and to make the allocation of Klamath River water less of a zero-sum game. As explained in an accompanying memorandum of understanding in which the Department of the Interior, the Tribes, and the Klamath Water Users pledged to collaborate and cooperate:

"The Parties share the common goals of achieving sustainability and resilience for the Basin, its communities, fisheries, and Tribal trust and other natural resources. The Parties recognize that all life and lifeways in the Basin are dependent on functioning, healthy ecosystems, that critical ecosystems have been impaired by a combination of stressors, and that protecting and restoring ecosystem function is central to long-term stability for all communities in the Klamath Basin." (US Department of the Interior 2024b)

Several restoration projects and infrastructure improvements were funded and undertaken during the first year of the program. These include inundation of 41,000 acres of former wetlands in the Upper Klamath River Basin, removal of mine tailings at Oregon Gulch on the mainstem of the Trinity River, and stream alteration to improve fish passage in Scotch Creek, a cold-water tributary of the lower Trinity River. (US Fish and Wildlife Service 2024; Leslie 2025a) As described below, however, the continuing availability of federal restoration funding is now uncertain.[178]

[178] The State of California and private foundations also have pledged significant funds to facilitate restoration work throughout the Klamath River watershed. In November 2024, the California Department of Fish and Wildlife announced that it had awarded more than $12 million in grants to fund a variety of projects. The Klamath-Trinity Basin projects include habitat acquisition, floodplain restoration, protection of newly restored riparian areas at the former Iron Gate and Copco 1 reservoir sites, increased water supplies for wetlands and wildlife refuges, enhancement of spawning and rearing habitat, rehabilitation of the Scott River watershed, and support of Yurok Tribal work to restore habitat and ensure fish passage in Weaver Creek. (California Department of Fish and Wildlife 2024) The private philanthropic Klamath River Fund has raised more than $12 million from individual and foundation donors. In May 2025, it distributed $1.2 million of these funds for a variety of restoration, recreational, and educational programs. (King 2025)

Revised Biological Opinions. Partly in response to the removal of the four dams, the Bureau of Reclamation initiated new consultation with the National Marine Fisheries Service (NMFS) under section 7 of the Endangered Species Act. (US Bureau of Reclamation 2024b)[179] The previous biological opinion (BiOp), promulgated in 2019, set minimum flow standards to protect coho salmon measured at Iron Gate Dam. Because Iron Gate Dam no longer exists, the 2024 BiOp added new flow criteria for Keno Dam, which is now the furthest downstream dam on the Klamath River. As part of its consultation with NMFS, the Bureau proposed a minimum flow regime that would resemble the natural unimpaired hydrograph of the river. NMFS accepted the Bureau's proposal and incorporated the flow standards into the biological opinion.[180] (National Marine Fisheries Service 2024) See Table 8.

TABLE 8

Minimum flow criteria required to avoid jeopardy to Klamath River coho salmon

Month	Flow Criteria (cfs)	Average Days in Compliance 1991-2022
October	750	20
November	750	20
December	650	14
January	650	12
February	650	11
March	700	1
April	1,000	1
May	900	2
June	750	2
July	650	19
August	650	16
September	750	17

[179] Section 7(a)(2) of the Endangered Species Act requires all federal agencies to consult with NMFS (for oceanic and anadromous species) and the US Fish and Wildlife Service (for terrestrial and freshwater species) to ensure that their proposed actions are "not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of the [critical] habitat of such species." The result of this consultation is a "biological opinion" that analyzes the potential effects of the proposed action on listed species and their critical habitat. If the relevant Service concludes that the proposed action would be likely to violate this statutory prohibition, it may disapprove of the action entirely or authorize the action subject to the action agency's compliance with "reasonable and prudent alternatives" governing project operations. The biological opinion also may include "incidental take" authorization, which allows the action agency to kill or harm a defined number of the protected species without violating the prohibition against taking listed species set forth in section 9 of the Endangered Species Act. (16 USC § 1536(a)(2) & (4))

[180] "Under the proposed action, the average annual hydrograph at Keno . . . would resemble the natural hydrograph (shape, timing, variability); however, the peak discharge magnitude is substantially reduced, and the timing is shifted approximately one month earlier, from early May to early April, relative to the historic average annual hydrograph at Keno for the 1905 to 1913 period. Additionally, fall/winter, spring and summer discharge is considerably reduced." (National Marine Fisheries Service 2024, Figure 27)

SOURCES: National Marine Fisheries Service (2024, Table 28).

NOTES: NMFS evaluated the average days in compliance "by comparing the percentage of days that modeled proposed action Keno Release Target flows for the 1991 to 2022 are at or near (plus 5%)" the Bureau of Reclamation's proposed Keno minimum flows.

These flow criteria essentially guide the Bureau of Reclamation's management of the Klamath Project to avoid jeopardizing the continued existence of the Klamath River coho salmon population or adversely altering its critical habitat. They include flows during key periods of salmon spawning and out-migration, as well as pulse flows for sediment transport and geomorphic shaping. The criteria cover Klamath Project operations from October 1, 2024, through September 30, 2029. Although NMFS concluded that, "largely as a result of operating the Klamath Project, the Klamath River annual flow volume, spring peak magnitude and duration, fall/winter flow variability, and summer base flows are reduced relative to the natural hydrograph, . . . the proposed action would not be expected to appreciably reduce the likelihood of both the survival and recovery of the . . . coho salmon." (National Marine Fisheries Service 2024)

Achievement of the new flow requirements will require significantly more water than the Bureau of Reclamation has historically bypassed or released into the Klamath River. NMFS modeled actual Klamath Project operations during the years 1991 through 2022, and it concluded that river flows just below Keno Dam would have complied with the new criteria on only about one-third of all days during the 32 years included in the analysis. Indeed, during the critical March through June period when juvenile coho salmon and juvenile spring-run Chinook salmon migrate downriver on their journey to the Pacific Ocean (Moyle 2002; California Trout 2022), releases from Keno Dam would have met the flow criteria on only one or two days of each month. (National Marine Fisheries Service 2024) Thus, the new flow regime—if faithfully implemented—is likely to significantly increase the volume of water that the Bureau of Reclamation will bypass or release into the Klamath River from Keno Dam.

The 2024 biological opinion covers only those anadromous fish species listed for protection under the Endangered Species Act, and the minimum flow criteria therefore were not focused on protection of Chinook salmon, steelhead, green sturgeon, or other species within the Klamath River assemblage.[181] Some aspects of the BiOp are likely to provide incidental benefits to other species, however, including the pulse flows for sediment transport and cleansing of spawning areas, and increased flows for coho that coincide with the spawning, rearing, and out-migration needs of other salmonid runs.[182]

---

[181] NMFS *indirectly* considered the effects of Klamath Project operations on Chinook salmon. The Southern Resident Killer Whale Distinct Population Segment, which is listed as an endangered species, preys on Pacific Coast Chinook salmon as a source of food. The biological opinion therefore evaluated the effects of Klamath Project operations on Klamath River Chinook for the purpose of ensuring that enough survive as potential prey so as not to place the killer whale population in jeopardy of extinction. (NMFS 2024)

[182] NMFS did refer, however, to a 2006 study that evaluated the flow regime that "used a multi-species approach to develop flow recommendations for conserving the entire suite of anadromous salmonids inhabiting the Klamath River Basin." The earlier study concluded that, from April through September of each year, the flows needed to protect the coho salmon population would adequately serve all salmonids as well. From October through February, however, the authors estimated that 20 to 50 percent more water would be needed in the river below Keno Dam to protect the full assemblage. (National Marine Fisheries Service 2024, citing Hardy et al. 2006) This type of integrated analysis is pertinent because, as the courts held in *Baley,* the Tribes' water rights are to a volume and flow of water that is sufficient to protect and sustain the Lower Klamath River fishery— quantities and flows that are "at least equal to" those required to comply with the Klamath Project's endangered species obligations. (US Court of Appeals 2019)

Trinity River Flow Augmentation. In April 2025, the Bureau of Reclamation reached an agreement with the Hoopa Valley and Yurok Tribes to release an additional 50,000 afa of water from the Trinity and Lewiston Reservoirs to augment instream flows in the Trinity River and in the Klamath River below the confluence. This agreement resolved a long-standing dispute between the parties over the sufficiency of the flow regime established by federal statute and implemented by the Trinity River Management Council. (US Court of Appeals 2017b; US District Court 2023a)[183]

The additional flows are likely to have a variety of benefits. These include habitat restoration, augmentation of flows during drought, and provision of pulse flows to support in-migrating salmon below the confluence. (Hoopa Valley Tribe 2025)[184]

Klamath River Agonistes

Despite these positive developments, the future of the Yurok and Hoopa Valley Tribes' instream reserved water rights—and the Lower Klamath River fishery itself—remain uncertain.

On January 21, 2025, the Office of Management and Budget issued a directive to pause the disbursement of funds for Klamath Basin restoration work. (The White House 2025)[185] The directive applied to more than 65 projects funded by the National Marine Fisheries Service and the US Fish and Wildlife Service throughout the Klamath River basin. (National Marine Fisheries Service 2025; US Fish and Wildlife Service 2025) They include reconstruction of the fish ladder at Keno Dam to facilitate upstream passage from the lower basin to the upper basin, restoration of spring-fed tributaries previously inundated by the four removed dams, and rehabilitation of headwater streams in the upper basin to reduce water pollution, improve irrigation efficiency, and enhance fish habitat. (Klamath River Fund 2025a; Leslie 2025b)

Although the OMB subsequently lifted the pause order, the uncertain federal commitment to funding Klamath River Basin restoration may itself have deleterious effects. As the Klamath River Fund stated:

"Organizational downscaling and staff layoffs at the Bureau of Indian Affairs and US Forest Service will reduce wildfire prevention and incident response, increase local unemployment, and cut off essential services for Tribal communities. Cuts to fisheries management will affect salmon populations, which are

---

[183] The 1955 legislation that authorized construction of the Trinity River Division of the Central Valley Project directed the Bureau "to adopt appropriate measures to insure the preservation and propagation of fish and wildlife, including, but not limited to, the maintenance of the flow of the Trinity River below the diversion point" with a range of specified levels. (US Congress 1955) In 1992, the Congress amended this directive to require the Bureau to increase project releases to a minimum of 340,000 afa for four years for the purpose of "protecting the fishery resources of the Hoopa Valley Tribe." Thereafter, the minimum flow could be adjusted by agreement between the Hoopa Valley Tribe and the Secretary of the Interior. "If the Hoopa Valley Tribe and the Secretary do not concur," however, "the minimum Trinity River instream fishery releases [of 340,000 afa] remain in effect unless increased by an Act of Congress, appropriate judicial decree, or agreement between the Secretary and the Hoopa Valley Tribe. (US Congress 1992, § 2406(b)(23))

The Bureau of Reclamation established a minimum release schedule in 2000 that ranged from 369,000 afa in critically dry years to 815,000 afa in extremely wet years. Although the Hoopa Valley Tribe agreed to this flow schedule and to several short-term increases in flows during severe drought, it has objected to other flow decisions made by USBR. (US District Court 2023a)

[184] The agreement also authorizes the Hoopa Valley Tribe to enter into agreement with Humboldt County for economic uses of the additional water. (Hoopa Valley Tribe 2025)

[185] The directive applied to all projects nationwide that fell under the category of "Terminating the Green New Deal" that were funded by either the Infrastructure Investment and Jobs Act of 2021 or the Inflation Reduction Act of 2022. (The White House 2025)

vital to the region's ecology and livelihoods of those who depend on them. While there are highly capable Tribes, nonprofits, and community members still actively working on the Basin's restoration, their capacity is limited without the support of the federal government behind them." (Klamath River Fund 2025a)[186]

In September 2025, OMB directed the Fish and Wildlife Service to terminate more than dozen active grants for Klamath River Basin restoration initiatives and to withhold all funds that Congress previously appropriated, but which had not yet disbursed to the restoration project contractors. To date, NMFS funding for ongoing grants has survived. (Interviews with Restoration Project Contractors)

The uncertainties of restoration funding are compounded by legal uncertainties regarding Klamath Project operations.

In May 2025, the Acting Solicitor of the Interior issued an opinion that—if adopted as the policy of the United States and upheld by the federal courts—will effectively exempt Klamath Project water supply operations from the consultation requirements of the Endangered Species Act. The opinion states that, in times of shortage, the Bureau of Reclamation has a nondiscretionary obligation to fulfill its water supply obligations to Klamath Project contractors before releasing any stored water to comply with endangered species requirements. The opinion also states that the Yurok and Hoopa Valley Tribes may not assert their federal reserved water rights to compel the Bureau of Reclamation to release stored water from project reservoirs to protect the Lower Klamath River fishery. (Zerzan 2025)

The Acting Solicitor's conclusion is inconsistent with a series of judicial decisions, which hold that the Bureau of Reclamation has a nondiscretionary *statutory* obligation to comply with the Endangered Species Act. (US Court of Appeals 1999, 2011, 2022) These decisions include *Baley v. United States,* the very case that recognized the Yurok and Hoopa Valley Tribes' senior reserved water rights to a volume and flow of water required to protect and sustain the Lower Klamath River fishery. (US Court of Appeals 2019) The Acting Solicitor's opinion also contradicts the Bureau's official operating priorities for the Klamath Project. (US Bureau of Reclamation 2024a, 2024b)

In July 2025, the Justice Department introduced the opinion into a case that is pending before the US Court of Appeals for the Ninth Circuit, *Yurok Tribe v. US Bureau of Reclamation,* asking the court to dismiss the litigation.[187] The Justice Department's brief states that the United States and the Klamath

[186] The Klamath River Fund is a non-profit organization that funds projects that benefit the Tribes and rural communities of the Klamath River basin. It also facilitates grantmaking by other organizations, coordinates conservation strategy, and offers technical assistance "to support Tribal and local community-driven restoration and revitalization priorities." (Klamath River Fund 2025b)

[187] The litigation, which began as a challenge to the 2019 biological opinion, has come to focus on the more fundamental question whether the Bureau of Reclamation has discretion to reduce water supplies to its project contractors when required by the BiOp to release water to protect coho salmon in the Lower Klamath River. The District Court concluded that the Bureau has significant discretion over Klamath Project operations and held that it therefore "must comply with the ESA in operating the Klamath Project." (US District Court 2023b) On appeal, the United States originally supported this decision. Following the June 2024 oral argument, but before the Court of Appeals issued its decision, the government changed its position based on the "guidance" set forth in the May 2025 Acting Solicitor's opinion. (US Department of Justice 2025)

Project contractors "now largely agree that the Project water-supply contracts impose substantial nondiscretionary obligations that are not subject to ESA § 7." (US Department of Justice 2025)[188]

If the Court of Appeals were to accept the United States' new interpretation its Endangered Species Act responsibilities, the Lower Klamath River coho and Chinook salmon—as predicted by the Bureau of Reclamation's own analysis and confirmed by NMFS in the 2019 and 2024 biological opinions—will be at significant risk whenever there is insufficient water to satisfy all demands for the water available to the Klamath Project.[189] But even if the Court rejects the new position, the damage to Klamath River basin management will be difficult to repair.

As described previously, the United States, the Klamath Water Users Association, and the Tribal governments within the basin signed a memorandum of understanding in 2024 in which they pledged to "work together to identify shared Klamath Basin restoration goals, priorities, and actions to improve water stability and reliability for ecosystem resilience, fish populations, and wildlife refuges, and irrigation." They also agreed to "strive for outcomes that provide multiple benefits from ecosystem restoration and agricultural modernization projects." (US Department of the Interior 2024b) The efforts of two of the parties to terminate the flow regime that is essential to the Lower Klamath River fishery and to overall ecosystem health and resiliency would appear to run contrary to these "shared goals."

Tribal Reserved Water Rights as an Ecological Bulwark

In this context, the Yurok and Hoopa Valley Tribes' federal reserved water rights take on a heightened importance. These senior water rights—though defined by the Court of Appeals in *Baley* in relation to the requirements of the current biological opinion for the Klamath Project—exist independently of the Endangered Species Act. As the Court held in *Baley,* the Tribes' instream reserved rights include "the right to prevent other appropriators from depleting the streams' waters below a protected level." That protected level is the volume and flow of water required under varying hydrologic conditions "to secure to the Tribes a continuation of their traditional hunting and fishing lifestyle." (US Court of Appeals 2019)[190]

---

[188] The Justic Department also noted that, although not "all potential disputes . . . over the ESA's applicability to the Klamath Project have been resolved," the Bureau of Reclamation "has committed to a 'fundamental change' in how it operates the Klamath Project and conducts § 7 consultation." (US Department of Justice 2025) The brief is especially significant, because it represents the official position of both the Bureau and the National Marine Fisheries Service.

[189] Withdrawal of the minimum flow standards set forth in the 2024 Biological Opinion would not necessarily eliminate *all* endangered species protections, as Klamath Project operations would remain subject to the "take" prohibition of section 9 of the Endangered Species Act. This section makes it unlawful for any person—including officers, employees, or agents of federal agencies—to kill or otherwise harm a protected species without an "incidental take" permit. (16 USC § 1532(15), 1532(19) & 1538(1)(b)) The take prohibition is less effective in protecting against extinction, however, as it is usually enforced (if at all) on a *post hoc* basis after a protected species is placed under environmental stress or individuals within the species begin to die.

[190] The Bureau of Reclamation has acknowledged this. In its 2024 biological assessment on Klamath Project operations the Bureau stated that it "must protect Tribal Trust resources. . . . These include instream water rights to support Tribal fishing rights that are prior ("senior") to the water rights associated with the Project and which prohibit subsequent ("junior") appropriators from depleting certain waters, including [Upper Klamath Lake], its tributaries, and the Klamath River, below a protected level." The Bureau noted that it also has contractual obligations to provide water to Project users, *subject to availability*. (US Bureau of Reclamation 2024b, emphasis added)

If the United States follows the Acting Solicitor's recommendations and takes the position that the Bureau of Reclamation need not release stored water to protect the Lower Klamath River fishery in times of shortage, the Yurok and Hoopa Valley Tribes likely will have to reassert their federal reserved water rights. Although most Tribes have historically relied on the United States to protect their lands, hunting and fishing rights, and water rights, each Tribe also has independent sovereign authority to file suit on its own behalf. (Newton and Washburn eds. 2024, § 8.02)[191] See Text Box 5.

[191] The United States Supreme Court has made it difficult for Tribes to compel the federal government to fulfill its trust responsibilities. In *Arizona v. Navajo Nation,* the Navajo sued the United States for failing to establish and effectuate its federal reserved water rights, including "assessing the Tribe's water needs, developing a plan to secure the needed water, and potentially building pipelines, pumps, wells, or other water infrastructure." The Court affirmed the dismissal of the Tribe's lawsuit. It held that, although the 1868 treaty that created the Navajo Reservation reserved enough water to accomplish the purposes of the reservation, it "did not require the United States to take affirmative steps to secure water for the Tribe." The Court concluded that "the Federal Government owes judicially enforceable duties to a Tribe 'only to the extent it expressly accepts those responsibilities.'" (US Supreme Court 2023)

The Court was careful to note that the Navajo "do not contend that the United States has interfered with their access to water." It is therefore possible that the Hoopa Valley and Yurok Tribes could state a valid claim against the federal government for failure to release sufficient water from the Klamath Project to protect and sustain the Tribal fishery. Such a claim would directly challenge the government's current legal position. As articulated by the Acting Solicitor of the Interior: "The United States has a general trust obligation to the downstream tribes, but a specific duty to operate the project to provide water to the Project irrigators in accordance with their water rights and contracts. The United States meets these trust obligations by providing natural flow to the downstream tribes while stored water is reserved for use by the Project irrigators." (Zerzan 2025)

Box 5: Yurok and Hoopa Valley Tribal Laws that Protect the Klamath River Fishery

A few months before the Court of Appeals published its decision in Baley, the Yurok Tribal Council passed a resolution that recognized the legal rights of the Klamath River. (Yurok Tribe 2019) In 2024, the Tribal Council enacted an ordinance to implement these rights. The ordinance identifies the Klamath River as Heyhl-keek 'We-roy, "the river that comes from the mountains" and include "its ecosystems and the native species within, connected to, and/or dependent on its ecosystems." (Yurok Tribe 2024a, § 21.60.090)

The law declares that Heyhl-keek 'We-roy "has the right to exist in its actual present, undisturbed, and natural form and to perform the functions of a natural, healthy river, within healthy ecosystems." It also states that the river possesses concomitant rights to naturally flourish, evolve, and regenerate. These rights include endangered species populations "reestablished to thriving numbers," diversity of animal and plant species, instream flows "at naturally occurring levels," "properly functioning sediment and nutrient processes," clean water, natural occurring water temperatures, and "the capacity to naturally and gradually change, adapt, and perform new, different, and additional functions over time." (§ 21.60.100)

The ordinance also grants the Klamath River "rights of legal standing to adjudicate its rights in legal proceedings when Heyhl-keek 'We-roy has suffered an injury, including minimal and cumulative harms." (§ 21.60.140) In these and other settings, the Tribe serves as trustee for the river by exercising "the inherent sovereignty of the Yurok Tribe to protect the health and well-being of the Yurok People and of Heyhl-keek 'We-roy." (§§ 21.60.030 & 21.60.150)

Establishment of the rights of the Klamath River reinforces the Yurok Tribe's existing environmental laws that regulate Tribal and non-Tribal fishing rights (including commercial, recreational, and ceremonial fishing), surface water diversions, groundwater pumping, discharges of pollutants, and alteration and use of wetlands. These laws apply to both Tribal and non-Tribal users. (Yurok Tribe 2024b, 2024c) The Hoopa Tribal Council has adopted similar laws to protect Tribal fisheries and to regulate discharges and other activities that may affect water quality within the reservation. (Hoopa Valley Tribe 1995, 1999, 2016) Both Tribes have adopted water quality plans. (Yurok Tribe 2004; Hoopa Valley Tribe 2022) The Environmental Protection Agency also has granted both Tribes authority to serve as the primary administrators of the federal Clean Water Act's water quality standards within their respective reservations. (US Environmental Protection Agency 2025c; See Part 8)

Yet, however it is ultimately resolved, the controversy over the Bureau of Reclamation's endangered species obligations and the United States' Tribal trust responsibilities illustrates the fragility of the Yurok and Hoopa Valley Tribes' instream water rights. Although their reserved water rights exist independently of the Endangered Species Act, under *Baley* the quantification of those rights is tied to the biological opinion governing Klamath Project operations. This derivative quantification is both variable, as NMFS may revise the BiOp from time-to-time, and uncertain due to the vicissitudes of law and politics.

The water resources of the Klamath River basin are likely to come under increasing stress from the effects of climate change, which in turn will increase the likelihood of system shortages. The United States' abnegation of its endangered species and Tribal trust obligations in these circumstances suggests that it may be time for the Tribes to seek judicial, or perhaps congressional, quantification of their federal reserved water rights as a bulwark against these hydrologic and political changes.[192]

Part 8: Other Strategies to Protect Tribal Water Rights and Beneficial Uses

As noted at the outset, the 16 Tribal Nations in California with quantified federal reserved water rights are only a small fraction of the 109 federally recognized and the more than 55 non-recognized Tribes in California. This concluding section briefly reviews some of the strategies these other Tribes may employ to establish or acquire water rights and protect the beneficial uses of their waters.

Quantification of Federal Reserved Water Rights

Federal reserved rights—whether quantified by litigation, settlement agreement, or legislation—are a powerful means for Tribes to exercise their inherent sovereignty to secure and protect their water resources. Although only 16 of the 103 reservations within California have quantified reserved rights, the remaining 87 reservations and rancherias also presumptively hold water rights under the *Winters* doctrine.

In addition, Tribes whose federal recognition and reservations were terminated by the California Rancheria Termination Act of 1958—including those Tribes covered by the 1964 amendment—can claim federal reserved rights based on their former reservation lands.[193] As described in Part 1, the legislation stated that "nothing in this Act shall abrogate any water right that exists by virtue of the laws of the United States." (US Congress 1958) This disclaimer means that water rights possessed by the Tribes

[192] The Yurok Tribe has been working with a Department of the Interior "assessment team" to determine whether the parties should engage in formal negotiations to quantify its water rights. (Congressional Research Service 2025) "Appointment of a Federal Assessment Team helps the United States better understand the nature and extent of a Tribe's water rights claims, the position and interests of the various parties, and can help make the transition to a Federal Negotiation Team more fluid." (US Department of the Interior 2020) The policies set forth in the Acting Solicitor's opinion suggest, however, that this is not the most propitious time for the Tribe to seek a negotiated quantification of its federal reserved water rights.

[193] As noted previously, the United States ended its recognition of 43 Tribes in California during the Termination Era and removed more than 10,000 acres of Tribal land federal trust status. (California Indian Legal Services 2024) To date, 32 Tribes have regained federal recognition either through litigation or by congressional action. (US Department of the Interior 2025) Twenty-seven of these Tribes also have regained title to at least some of their pre-termination lands. (US Government Accounting Office 2006; California Indians Legal Services 2024) See Part One.

before termination—including federal reserved rights—remain unaffected by the termination of recognized Tribal status or termination of the reservations themselves.[194]

Some Tribes have expressly asserted their reserved rights, but they have not yet sought judicial or congressional quantification. For example, the Round Valley Indian Reservation, which was created in 1856 and expanded in 1873, includes about 30,000 acres of land in the upper Eel River watershed. The Round Valley Tribes recently filed a brief with the Federal Energy Regulatory Commission in which they stated that they hold "unadjudicated and unquantified federal water rights and fishing rights derived by implication from the creation of the Reservation by the United States." The Tribes cited the Court of Appeals' opinion in *Baley v. United States* to support their claim. See Part 7. They also asserted "aboriginal rights to water and fish throughout their ancestral territories encompassing much of the upper Eel River watershed." (Round Valley Indian Tribes 2025)[195]

Six other Tribes are currently engaged with the Department of the Interior to establish the legal, historical, and hydrologic foundations of their reserved water rights. These include five Tribes that have reservations in the Mono Basin and Owens Valley in the eastern Sierra Nevada. These Tribes claim surface water and groundwater based on both the federal reserved right doctrine and on ancestral irrigation uses that date back several thousand years before contact and colonization. (Congressional Research Service 2025; See Text Box 6.[196]

---

[194] In *United States v. Adair,* the US Court of Appeals for the Ninth Circuit interpreted similar language in the Klamath Termination Act of 1954, which terminated both federal recognition of the Klamath Indian Tribe and its 1.8 million acre Klamath Reservation in Southern Oregon. The Court rejected arguments by other water right holders in the Upper Klamath River Basin that the Termination Act also terminated the water rights held by the Tribe under the 1864 treaty that established the reservation. The 1954 statute stipulated that "[n]othing in this Act shall abrogate any water rights of the tribe and its members [or] abrogate any fishing rights or privileges of the tribe or the members thereof enjoyed under Federal treaty." (US Congress 1954)

Focusing on the disclaimer, the Court explained that "this provision admits no exception, nor can it be read to exclude reserved water rights. . . . Because Congress . . . explicitly protected tribal water rights and nowhere in the Act explicitly denied them, we can only conclude that such rights survived termination." The Court then affirmed the District Court's conclusion that the Klamath Tribes are "entitled to a reservation of water, with a priority date of immemorial use, sufficient to support exercise of treaty hunting and fishing rights." The hunting and fishing rights—as well as the water needed to fulfill these rights—apply to all lands within the former Klamath Reservation. (US Court of Appeals 1983)

As noted in Part Seven, Congress restored the Klamath Tribes' federal recognition in 1986. Although the legislation did not restore the original Klamath Reservation, the Tribe has acquired 12 non-contiguous parcels of land totaling 308 acres, which it manages as the contemporary Klamath Reservation. (Oregon History Project 2025; Klamath Tribes 2025)

[195] The Morongo Band of Mission Indians also have formally claimed federal reserved water rights. The Tribal Gaming Agreement with the State of California states that the "Tribe claims federally reserved water rights." Although the compact does not otherwise address Tribal water rights, it does state that the Tribe's compact obligation to mitigate off-reservation impacts of water use in constructing and operating its casino shall not "impair, restrict, or otherwise limit the Tribe's federally reserved water rights." (US Department of the Interior 2017b)

[196] As described previously, the Yurok Tribe is also working with an Interior Department assessment team to begin the process of quantifying its instream reserved water rights that were confirmed in *Baley.* (Congressional Research Service 2025)

Box 6: Pre-Contact Irrigation by the Nüümü People

The Nüümü People have inhabited the Owens Valley and its adjacent mountains and high desert since time immemorial. They call their lands Payahuunadü, the "Land of the Flowing Water." Fed by snowmelt from the eastern Sierra Nevada, these waters created rivers, lakes, and wetlands that sustained the Nüümü. They lived in more than 30 villages that extended from Round Valley southward to Owens Lake. They hunted game, fished from the streams, and gathered acorns, pinenuts, seeds, and other plants from the grasslands and wetlands of the valley. The Nüümü also irrigated taboose, nahavita, and various seed-bearing plants by diverting water from tributaries of the Owens River through earthen and stone-lined ditches. (Lawton et al. 1976) "Plots were chosen for convenience of dam and ditch building, soil drainage, and seed yield." (Steward 1933) Indeed, a United States land survey conducted in 1855-56 (when the Nüümü still occupied their ancestral lands) found irrigation ditches along six tributary streams. (Lawton et al. 1976)

The Nüümü were displaced from their lands in the early 1860s as prospectors, followed by ranchers and farmers, flooded the Owens Valley. This process was marked by violence. In 1863, the United States Army and a group of vigilantes "drove more than thirty Nüümü into Owens Lake, then shot them as they tried to swim to safety. Later that year, the military forcibly marched nearly 1,000 Nüümü out of Payahuunadü to Fort Tejon, more than 200 miles to the south. Many Tribal members died of thirst or starvation along the way." Some Nüümü later returned to the Owens Valley, where they worked as farm laborers and ranch hands on what were once their lands. (Cotsirilos 2024)

Pursuant to a federal program to restore some lands to their original inhabitants, 79 Tribal members were granted individual allotments, totaling approximately 6,000 acres in the Owens Valley. Many of these lands were lost in the early 20th century, however, when Los Angeles acquired much of the Owens Valley to secure water rights for its Owens Valley Project. In response, the United States Indian Service purchased eight small tracts of private land with water rights, which it held in trust as homesites for Nüümü who did not have their own allotments. "These homesites functioned like small reservations, totaling about 145 acres, with Nüümü families assigned small plots with ample water supply to grow gardens and fruit trees." The remaining Tribal lands were scattered throughout the Owens Valley. (Borgias 2024a)

By the early 1930s, however, Los Angeles informed the Indian Service of an "Indian Problem." The city claimed that some Nüümü were illegally using water and that others were squatting on city property. In response, the Indian Service agreed to exchange the diverse Tribal lands, which totaled 2,913.5 acres, for 1,391.5 acres owned by the city in three locations within the Owens Valley. (Borgias 2024a) Congress approved the land exchange 1937. The legislation also created the Bishop, Big Pine, and Lone Pine Indian Reservations. (US Congress 1937)

Los Angeles subsequently disclosed that its city charter prohibited the sale or exchange of water rights without the approval of two-thirds of the electorate. As a result, the 1939 land exchange agreement and deed that transferred title of city lands to the federal government excluded all water rights in those lands. Instead, the city agreed to provide 5,566 afa of Owens Valley Project water to the three reservations. The United States had previously obtained rights to this water from two private canal companies. Neither the 1937 statute nor the 1939 land transfers surrendered the Tribes' federal reserved water rights or conveyed them to Los Angeles. (Owens Indian Valley Water Commission 2018; Borgias 2024a)

The Big Pine Paiute Tribe of the Owens Valley, the Bishop Paiute Tribe, and the Lone Pine Paiute Shoshone Tribe formed the Owens Indian Valley Water Commission in 1991 and began working with the Department of the Interior to define and quantify their federal reserved water rights. Negotiations with the city have been sporadic and, to date, unfruitful. The federal assessment team is now working with five Tribes, adding the Fort Independence Indian Community of Paiute Indians of the Fort Independence Reservation and the Utu Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation to the original three. This has complicated the assessment process as the two added Tribes were not parties to the 1939 land exchange agreement. (Borgias 2024a, 2024b) Other outstanding issues include the adequacy of the size of the reservations, the quantity of the Tribal reserved rights, the inclusion of surface water and groundwater, the effects of the 1939 agreement, provision of substitute supplies to Tribes whose lands do not contain surface water resources or overlie a groundwater aquifer, and the city's stewardship of freshwater ecosystems and artesian springs on ancestral Tribal lands.

As Text Box 6 illustrates, the geographic and hydrologic contours, quantities, and priorities of these water rights will vary depending on many factors. These include the location of the reservation, its proximity to surface water and groundwater, the date on which the reservation was created, the existence of senior water rights holders within the same watershed or groundwater basin, and other factors. These variables, in turn, will influence possible water rights negotiations and settlements. Other factors—such as the Tribe's need for financial assistance in developing its water resources, the availability of imported water, and water conservation, banking, and exchange opportunities—will also affect the likelihood of a negotiated solution. Litigation, which is both a last resort and an incentive to reach a multi-party settlement—is also an option.

The Bureau of Reclamation has played a constructive role in helping some Tribes to identify and assess their water resources and potential reserved rights claims. Yet, the federal assessment process is slow, and at least for the near-term future the Bureau's resources and priorities may be diverted to other programs. The California Department of Water Resources could help to fill this void by offering its own technical expertise to those Tribes in California that may seek to establish their federal reserved water rights.

Tribal Water Rights Under California Law

Although the principal basis of Tribal water rights is the federal reserved water rights doctrine, Tribes can also hold water rights under California law. Both the United States and Tribal governments may acquire appropriative water rights, just as other individuals, businesses, and governmental entities my obtain such rights through their own actions, by acquiring land to which existing appropriative rights are appurtenant, or by acquiring water rights from other appropriators.[197] The question whether riparian rights exist in lands held by the United States—either for its own purposes or in trust for the Tribes—was not answered until 1988, however, when the California Supreme Court addressed the state water rights of the national forests. In a statutory adjudication of all water rights in the Hallett Creek stream system, the Court held that "under California law riparian water rights exist on federal lands located within the State of California." (California Supreme Court 1988) The Court also noted with approval an earlier federal court decision that the United States has riparian rights in lands that it acquires from a nonfederal owner by purchase, condemnation, gift, or exchange. (US Court of Appeals 1956)[198]

As California State Water Resources Control Board practice has confirmed, these principles apply to lands held by the federal government in trust for California's Tribal Nations and for lands to which the

[197] California has a permit and license system for surface water rights established after December 19, 1914, the effective date of the Water Commission Act of 1913, which created the predecessor to the State Water Resources Control Board. Riparian rights, groundwater rights, and pre-1914 appropriative rights are exempt from this permitting and licensing system. State law also authorizes changes in water rights, including transfers of water and water rights from the original appropriator to another user. (Littleworth and Garner 2019, Chapter 3)

[198] In *Hallett Creek,* the Supreme Court stated that water rights held or acquired by the United States under California law must comply with all aspects of state water law. These principles include the reasonable and beneficial use requirements of Article X, Section 2 of the California Constitution, the public trust doctrine, laws governing transferability of water rights, and the state definition of which lands qualify for riparian water rights. (California Supreme Court 1988) This is in marked contrast with federal reserved water rights, which are exempt from these and other features of state law. (Newton and Washburn eds. 2024, Chapter 21)

Tribes themselves hold fee title. Moreover, a Tribe need not be federally recognized to claim and hold water rights under state law.

According to the Board's records, more than 30 Tribes have state water rights to surface water and to groundwater. Most of the water rights are appropriative rights based on permits or licenses issued by the State Water Board. The quantities are generally small, ranging from a few acre feet annually to more than 5,000 afa. One Tribe, the Soboba Band of Luiseño Indians, claims state groundwater rights in the amount of 725 afa. (California State Water Resources Control Board 2026a)[199]

Although these records are illustrative, they probably understate the actual number and volume of Tribal water rights held under California law. For example, several Tribes are listed as holding either riparian rights or pre-1914 appropriative rights, but the stated quantity is zero. Yet, for the reasons described above, it is likely that many California Tribes hold riparian rights. It is equally likely that many also have groundwater rights, even though only one Tribe has reported a claim to groundwater. More generally, although state law requires surface water right holders who divert more than 10 afa to submit annual reports to the State Water Board, only a small percentage comply with this regulation.[200]

The largest Tribal appropriator on record is the Cachil DeHe Band of Wintun Indians of the Colusa Indian Community. The Tribe holds senior licensed appropriative rights to divert 5,864 afa from the Sacramento River. It uses this water to irrigate more than 4,000 acres of acquired agricultural lands in Colusa County, of which approximately 2,800 acres are rice fields. The remainder support diverse orchard, grain, and field crops. The Tribe also has a water rights settlement contract with the federal Central Valley Project for 180 afa. This water supports Tribal lands within the Colusa Rancheria that are home to the Cachil DeHe Village complex, the Tribal Roundhouse, and the Colusa Casino Resort on the Colusa Rancheria. (Colusa Indian Community Council 2013)

The Morongo Band of Mission Indians—comprised of members of the Cahuilla, Serrano, Cupeño, Luiseño, Chemehuevi, Gabrieleno, Paiute, and Kumeyaay Tribes—is another large appropriator. The Band inhabits a 35,000-acre reservation in the San Gorgonio Mountains in Riverside County. (Morongo Band of Mission Indians 2026a) It holds senior licensed appropriative rights to 2,288 afa from Upper San Gorgonio Creek, a tributary of the Whitewater River. (California State Water Resources Control Board 2026a)[201] The Band acquired these water rights when it purchased land adjacent to the reservation to which the appropriative rights were appurtenant. The Morongo Tribal members use this water to supply their homes and businesses, which include the Diamond Morongo Casino Resort, the 36-hole Morongo Golf Club, a travel center, a variety of small commercial establishments, and the Arrowhead Mountain

---

[199] The Tribal water rights data were compiled using the State Water Resources Control Board's Electronic Water Rights Information Management System (eWRIMS) and the new California Water Accounting, Tracking, and Reporting System (CalWATRS) using the following search terms: Federal, Indian, Tribe, Band, Reservation, and Rancheria. On July 1, 2025, the Board switched from eWRIMS to CalWATRS. All water rights filings after July 1, 2025, will appear only in CalWATRS. (California State Water Resources Control Board 2026a)

[200] The State Water Board acknowledged in 2025 it receives annual reports for less than 25 percent of the approximately 12,000 water rights claims that are subject to the reporting requirements. (California State Water Resources Control Board 2025a)

[201] The Morongo Reservation is located a few miles northeast of the Soboba Reservation and northwest of the Agua Caliente Reservation. San Gorgonio Creek is part of the same river system that replenishes the aquifer beneath the Agua Caliente Reservation. See Part Six.

water bottling plant. These businesses employ more than 3,000 workers. (Morongo Band of Mission Indians 2026b)[202]

The number and size of Tribal water rights held under California law is likely to increase over time as Tribes regain title to ancestral lands that had been lost to private individuals, corporations, or state and local governments. Funding for these transfers has come from a variety of different sources, including federal and state appropriations, private philanthropy, and non-governmental organizations. The return of Tribal land in California is part of broader national and international efforts to restore Tribal land and resource bases as a means of strengthening Tribal communities, economies, culture, and sovereignty. (NDN Collective 2025; Bradley and Smith 2026; U.S. Department of the Interior n.d.)

State financial support has increased significantly in recent years. In 2022 and 2023, the California Legislature appropriated $100 million to the California Natural Resources Agency (CNRA) to fund the Tribal Nature-Based Solutions Program. The program focuses on "multi-benefit nature-based solutions projects" to benefit Tribal nations within the state. (California Natural Resources Agency 2026a)[203] As of March 2026, CNRA and other state agencies have supported the return of approximately 103,000 acres of ancestral lands to California Native American Tribes. (California Natural Resources Agency 2026b)[204]

Tribes that have recently reacquired portions of their ancestral lands through these and other programs include:

- **Wiyot Tribe (2019).** The City of Eureka transferred title to 202 acres of Tuluwat Island in Humbolt Bay to the Wiyot Tribe. The island was unlawfully taken from the Tribe in 1860 following a massacre of several hundred Tribal members. The Tribe now owns more than 90 percent of the island. It is in the process of removing abandoned structures and hazardous materials, eradicating invasive species, and restoring tidal wetlands, native plant species, and other habitat. The Tribe plans to use Tuluwat Island as a Tribal community center and cultural resource. (Helvarg 2020; Bloom 2023)

---

[202] The Arrowhead Mountain bottling facility was previously owned by Nestlé Water North American, but it was sold to BlueTriton Brands in 2021. The company operates the bottling plant on reservation lands that it leases from the Morongo Band. The project has generated considerable controversy as it draws its water from eight springs in Strawberry Canyon in the San Bernardino National Forest that previously fed Strawberry Creek, a small upper tributary of the Santa Ana River. Critics of the diversions have accused Nestlé of reducing the volume and flow of water in the creek and of damaging the riparian ecosystem.

The State Water Board issued a cease and desist order in 2023, which banned the use of 10 of the company's 13 diversion points. The order exempted diversions to supply the Morongo Band with water. (California State Water Resources Control Board 2023) A state court judge overturned the order in 2025, however. The judge concluded that the Board has no jurisdiction over the company's withdrawal of water from the Strawberry Creek watershed, because the water is legally classified as groundwater and is therefore not subject to the Board's statutory cease and desist authority. (James 2025)

[203] The Tribal Nature-Based Solutions Program is a component of Governor Gavin Newsom's "30x30 Initiative" to protect biodiversity and increase ecological resiliency by conserving an additional 30 percent of California's lands and coastal waters by 2030. California Governor's Office 2020)

[204] In addition, California State Parks has signed 15 memoranda of understanding and joint powers agreements with various Tribes that provide "for tribal access and collaboration [in] over 89 Parks Units covering approximately 939,000 acres of land." The California Department of Fish and Wildlife and other CNRA departments are also "actively developing additional tribal access and collaboration agreements with tribes across California." (California Natural Resources Agency 2026b)

- **Esselen Tribe (2020).** The Esselen Tribe acquired the 1,199-acre Alder Ranch from private landowners.[205] The former ranchlands extend several miles inland from the Monterey Coast near Big Sur. They were part of the Tribe's ancestral lands that were seized by the Spanish when Mission Carmel was founded in 1797. The Little Sur River, a pristine stream with headwaters in the Ventana Wilderness Area of the Santa Lucia Mountains, flows through a deep, redwood-shaded canyon on the property on its way to the Pacific Ocean. It is prime steelhead habitat. (Smith and Sturgill 2021; Ferguson 2021)
- **Owens Valley Indian Water Commission (2023).** Following a successful crowd-funding campaign, the Owens Valley Indian Water Commission acquired title to Three Creeks, a five-acre oasis in the Owens Valley between Big Pine and Independence. The land includes wetlands, ponds, fruit orchards, and hiking trails. The Commission will manage the property as a spiritual and community center for its three member Tribes (see Text Box 6) and the general public. The land will also serve as an example the benefits of broader restoration and ecological management throughout Payahuunadü. (Cowan and Chen 2024; Owens Valley Indian Water Commission 2025)
- **Karuk Tribe (2023).** Congress enacted the Katimiîn and Ameekyáaraam Sacred Lands Act, which transferred 1,031 acres of federal land to the Secretary of Agriculture to hold in trust for the benefit of the Karuk Tribe and its members. (US Congress 2023) The lands sit at the confluence of the Klamath and Salmon Rivers and include Katimiîn village, where the Tribe holds its annual World Renewal Ceremony, and Ameekyáaraam, which is the site of the Jump Dance and First Salmon Ceremony. See Text Box 4. The return of what the Tribe calls its "center of the world" secures the Tribe's rights to conduct its sacred ceremonies and ensures that it may "pass Karuk culture and customs down to the next generation." (Greenson 2023)
- **Hoopa Valley Tribe (2023).** The Hoopa Valley Tribe acquired 10,395 acres of ancestral land that borders the western boundary of its reservation. The Tribe purchased the land from New Forests, an Australia-based forestland manager, using the proceeds of a $14.1 million grant from the Tribal Nature-Based Solutions Program. The regained land includes the headwaters of Pine Creek, a tributary of the Klamath River, which is important spawning habitat for salmon and steelhead. "The land also provides gathering sites for food and basketry materials, along with a variety of plant and wildlife species that hold great importance in the Tribe's culture." (Conservation Fund 2023)
- **Fort Independence Tribe (2024).** The California Department of Fish and Wildlife transferred title to the Mount Whitney Fish Hatchery to the Fort Independence Indian Community of Paiute Indians. "The historic hatchery structures, residences and other buildings cover approximately 19 acres. The remaining 21+ acres have native plant vegetation including shrubland, and oak and willow riparian habitat adjacent to Oak Creek." The Tribe and its members have inhabited the Owens Valley for thousands of years. They lived along Oak Creek and used its waters to irrigate taboose, nahavita, and other indigenous plants. The Tribe plans to restore the hatchery buildings and native vegetation and to use the site for traditional practices and educational purposes. (California Department of Fish and Wildlife 2023; Cowan and Chen 2024)
- **Yurok Tribe (2024).** The Yurok Tribe signed a memorandum of understanding to begin the process of transferring the 125-acre former Orick Mill site to the Tribe. Prairie Creek, a tributary of Redwood Creek, flows through the property and is spawning habitat for salmon and steelhead. The Yurok call the site, which was a central feature of their ancestral lands, "'O Rew." Save the Redwoods acquired the abandoned timber mill in 2013 and, along with the Yurok Tribe and other

[205] The Western Rivers Conservancy brokered the transfer by initially purchasing the land and then conveying title to the Esselen Tribe after it received a $4.5 million grant from the California Natural Resources Agency. (Ferguson 2021)

organizations, has been rehabilitating the property. These efforts include stream channel and floodplain restoration, as well as replanting of native plant species such as coast redwood, black cottonwood, and slough sedge. The organization will transfer title to the Tribe in 2026 following completion of the restoration work. The Tribe will jointly manage the lands with the National Park Service, California State Parks, and Save the Redwoods League as a Tribal educational and cultural center and as a public gateway to the Redwood National and State Parks. (Bartoo-Smith 2024; Frost 2024)

- **Shasta Indian Nation (2024).** That same year, the State of California agreed to transfer 2,800 acres of formerly submerged lands along the Klamath River to the Shasta Indian Nation. These lands were part of the Shastan Peoples' ancestral lands, which were flooded when the Copco Dams 1 and 2 filled in 1922. The conveyance will include the former Copco Reservoir footprints, a section of the Klamath River known as "Ward's Canyon Reach," and the former site of Copco Village, where the Tribe will convert the decommissioned Copco No. 2 powerhouse into an interpretive center that "tells the history of the Shasta People, the dams, and the story of the river." (Shasta Indian Nation 2024)
- **Yurok Tribe (2025).** In June 2025, the Yurok Tribe completed a series of transfers through which it regained 47,907 acres of its ancestral lands. Green Diamond Resource Company originally offered the lands for sale in 2002. Western Rivers Conservancy purchased the lands in sequential transactions that began in 2011, and subsequently conveyed title to the Tribe. The purchases were funded through "an innovative funding strategy that brought together $56 million in private capital, low interest loans, tax credits and carbon credit sales." (Western Rivers Conservancy 2025)
- The new lands include 32,307 acres of redwood and mixed-conifer forest that border a 25-mile reach of the Klamath River. These lands will comprise the "Yurok Tribal Community Forest," which the Tribe will manage for sustainable timber harvesting, habitat conservation, and other purposes. The area is home to Humboldt marten, marbled murrelet and Northern spotted owl. The newly acquired lands also include the entire 14,790-acre Blue Creek watershed. Blue Creek is a tributary of the Klamath River, which provides important cold-water habitat for salmon, steelhead, green sturgeon, and Pacific lamprey. (Alexander 2025a; Bartoo-Smith 2025)
- **Mono Lake Kootzaduka'a Tribe (2025).** In July 2025, the Mono Lake Kootzaduka'a Tribe acquired 160 acres of ancestral land, known as "Tupe Nobe," in the Mono Basin National Forest Scenic Area east of Yosemite National Park. The Tribe will use the land "to preserve and rejuvenate cultural heritage by conducting traditional ceremonies, ensuring that traditional knowledge and practices are passed on to future generations." It also will "steward the land," using "traditional land management practices to improve resilience to wildfire and enhance biodiversity." The Tribal Council also hopes that the land will be a foothold for its decades-long quest to obtain federal acknowledgment. The land transfer was facilitated by the Eastern Sierra Land Trust and was funded by a $2 million grant from the Sierra Nevada Conservancy. (Mono Lake Kootzaduka'a Tribe 2025)
- **Tule River Tribe (2025).** The Tule River Tribe also regained a portion of its ancestral lands in 2025. In two separate transactions, the Tribe acquired title to the 14,673-acre Hershey Ranch and the adjacent 2,357-acre Carothers Ranch. These transfers were facilitated by a $2.4 million grant from the California Wildlife Conservation Board, a $7.75 million grant from the California Natural Resources Agency's Tribal Nature-Based Solutions Program, and private philanthropy coordinated by The Conservation Fund and the Tamalpais Trust. (Garrison 2025; McEwen 2025)
- The newly acquired lands extend from the southern border of the Tule River Reservation into the Deer Creek watershed, one of the last undammed waterways in the Southern Sierra Nevada. They include the Yowlumni Hills, a verdant swath of grasslands, oak woodlands, and evergreen forests that provided seasonal food and shelter to the Yokuts and the neighboring Tübatulabal who

inhabited the Kern River Valley. The Tule River Tribe plans to restore impaired lands along Deer Creek and in its headwaters to improve groundwater recharge, enhance natural flood control, and protect sensitive cultural areas. These restoration efforts will encourage the return of wildlife, including golden eagles, Tule elk, beaver, wolves, and California condor. (Garrison 2025; McEwen 2025)

- **Agua Caliente Tribe. (2026).** The Agua Caliente Band of Cahuilla Indians recently regained title to 565 acres of ancestral lands in upper Palm Canyon, a scenic and biologically important canyon in the Santa Rosa and San Jacinto Mountains Conservancy Area. The nonprofit Friends of the Desert Mountains purchased the property in 2018 with funds provided by the Coachella Valley Mountains Conservancy (CVMC), which is a state agency. The lands include critical habitat for the Peninsular Ranges Desert Bighorn sheep and other protected species. Palm Valley also is within the drainage area that recharges the aquifer beneath the Agua Caliente Reservation. This land return followed two other CVMC-funded transfers of ancestral lands back to the Agua Caliente Tribe—280 acres in 2023 and 320 acres in 2024. (Coachella Valley Mountains Conservancy 2026; Rode 2026)[206]

It is likely that most, if not all, of these transfers carried with them water rights recognized under California law. These include riparian surface water rights and overlying groundwater rights.[207] As these water rights are usually the most senior in the watershed or groundwater basin, they would be valuable Tribal assets—to supply the Tribes' own uses, to protect water quality, and potentially to secure instream flows to support Tribal fisheries, fishing rights, and traditional practices.[208]

Moreover, California law allows existing water right holders to dedicate all or a portion of their water rights to instream and other ecological uses. Section 1707 of the Water Code authorizes the State Water Board to change existing riparian and appropriative rights "for purposes of preserving or enhancing wetlands habitat, fish and wildlife resources, or recreation in, or on, the water." (Water Code § 1707(a)) Thus, Tribes that have acquired land with state water rights that have historically been used for irrigation, ranching, or commercial uses could change the purpose of use to leave water instream for protection of fisheries, recreation, or traditional and ceremonial practices. Indeed, all of the Tribes described in the

---

[206] Not all proposed land transfers have been successful. For many years, the Tolowa Dee-ni' Tribe sought to purchase a portion of its ancestral lands along the coastal plain of the Smith River. The 1,668-acre "Reservation Ranch" was claimed by non-Indian settlers following the closure of the Smith River Reservation in 1868, when the remaining Tolowa People were removed to the Klamath River Reservation to the south. The lands include the site of the 1853 massacre of several hundred Tribal members, which took place during the annual world renewal ceremony. (Griffin 2021; Xia 2021)

The ranch, which remained in the same family for six generations, was offered for sale in 2020. Along with a working dairy farm, it included three miles of riparian land along the Smith River, a tidal estuary, and an abundance of salmon, steelhead, and other wildlife. The Tolowa were unable to raise sufficient funds to purchase the property, and the ranch was sold to a private buyer in 2024 for $12.95 million. (California Outdoor Properties 2024)

[207] Some of these lands also may include appropriative rights that were included in the conveyance of title to the land. Unless excluded from or modified by the terms of the grant, these appropriative rights would carry the same priority date as held by the transferor of the property. As described above, the Morongo Band's licensed appropriative rights—which have priorities of 1917, 1923, and 1928—are examples. (California State Water Resources Control Board 2026a)

[208] The Tribes with existing reservations—the Tuluwat, Hoopa Valley, Yurok, and Tule River—may work with the United States to incorporate the new lands into their respective reservations. At that point, the Tribes could claim federal reserved water rights for these lands. The priority dates of the reserved water rights for the newly added parcels would be the date of incorporation, however, which would make the federal reserved water rights junior in priority vis-à-vis existing appropriators. (US Supreme Court 1964, 2006a) In these circumstances, the Tribes could well determine that their state riparian, overlying, and senior appropriative water rights are of greater practical value.

preceding list plan to dedicate their lands and water resources to support fish, water quality, wetlands, aquatic habitat, recreation, and instream ceremonial uses.

Section 1707 also may be used to change the purpose of existing instream uses. The most prominent example of this is the proposed transfer of water rights from the Pacific Gas and Electric Co. (PG&E) to the Round Valley Tribes. If approved, this transfer will create both ecological and financial benefits for the Tribes. See Text Box 7.

Box 7: Potter Valley Dam Removal and Tribal Water Rights Transfers

The Potter Valley Project is an inter-basin diversion project. It impounds the waters of the Eel River behind Scott Dam, which forms Lake Pillsbury. The stored water is released back into the Eel River where it flows approximately 12 miles into Van Arsdale Reservoir, which is created by Cape Horn Dam. From there, PG&E diverts the water into the Potter Valley Powerhouse where it generates hydroelectricity. The water is then discharged into the East Branch of the Russian River where it flows into Lake Mendocino. (California State Water Resources Control Board 2026b)

PG&E has operated the project since 1930. Its license from the Federal Energy Regulatory Commission expired in 2022, and the company has decided to decommission the project and remove the existing dams. In 2025, PG&E signed an implementation agreement with the California Department of Fish and Wildlife, Humbolt County, the Round Valley Indian Tribes, the Sonoma County Water Agency, two environmental organizations, and several other parties. Under the terms of the agreement, PG&E will transfer its appropriative water rights to the Round Valley Tribes, whose reservation includes some of the headwater streams of the Middle Fork of the Eel River. In turn, the Tribes will lease the water to the Eel-Russian Project Authority (ERPA), a joint powers authority created by the agreement to oversee construction and operation of a new facility at the Cape Horn Dam site to divert some Eel River flows into the Russian River. ERPA will pay $1 million annually to the Tribes and contribute $750,000 each year to a new Eel River Restoration Fund. (Two Basin Partnership 2025; Music 2025)

If FERC approves PG&E's application to surrender its license and decommission the project, removal of the Cape Horn and Scott Dams will make the Eel River the longest free-flowing river in California and open approximately 192,000 acres of the upper Eel River watershed to Chinook salmon, steelhead, Pacific lamprey, and other species. If the State Water Board approves the transfer of PG&E's water rights to the Round Valley Tribal government, the Tribes will gain significant revenues from what were once their ancestral waters. The Tribes could then use those revenues to support salmon and habitat restoration efforts in the Eel River and its tributaries and to provide other benefits to its members. (Schneider 2025)

The State of California has pledged $9 million to support construction of the new Eel-Russian River diversion facility and $9 million to help establish the Eel River Restoration Fund. (California Department of Fish and Wildlife 2025) Dam removal has engendered some opposition, however, among two groups: recreational users of Lake Pillsbury and vineyard owners and other users of water from the Russian River who are concerned that the removal of the dams would reduce their water supplies. (Alexander 2025b, 2025c) In December 2025, the US Department of Agriculture filed a motion to intervene in the FERC proceedings to oppose decommissioning of the dams. (US Department of Agriculture 2025)

California water rights law is a notoriously complex and opaque subject, and the water rights of each Tribe will vary based on the hydrogeology, chain of title, and history of water use on each parcel. Both the California Department of Water Resources and the State Water Resources Control Board have Tribal Affairs Offices. These offices can help to facilitate and coordinate technical and legal assistance to the Tribes as they may seek to inventory, confirm, and plan for future uses of their newly acquired water resources. They also may help Tribes to identify risks to their water rights from unlawful upstream diversions, discharges of pollutants, groundwater extraction, and other threats.

Sustainable Groundwater Planning and Management

In 2014, the California Legislature enacted the Sustainable Groundwater Management Act (SGMA) to address severe groundwater overdraft that has plagued many regions of the state for almost a century. The Act directs local water agencies and groundwater users to create Groundwater Management Agencies (GSAs) for each designated high- or medium-priority basin or sub-basin.[209] The statute then requires the GSAs to draft and implement Groundwater Sustainability Plans (GSPs) that will enable them to achieve sustainable groundwater management and use by the early to mid-2040s. (Water Code § 10720.7(a); Littleworth and Garner 2019, Chapter 4)[210] The sustainability plans may include enforceable groundwater allocations, extraction limitations, pumping fees, metering and reporting requirements, and designated "no pumping" zones. (Water Code § 10720.726.4)

SGMA has several references to Tribal groundwater resources. The Act states that it applies to Indian Tribes and to the United States "to the extent authorized under federal or Tribal law." (Water Code § 10720.3(b)) It then explains:

"The federal government or any federally recognized Indian Tribe, appreciating the shared interest in assuring the sustainability of groundwater resources, may voluntarily agree to participate in the

---

[209] Although SGMA generally applies only to groundwater, it does require GSAs to avoid "depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water" and to consider "impacts on groundwater dependent ecosystems." (Water Code §§ 10721(x)(6) & 10727.4(*l*)) The Legislature also amended SGMA in 2018 to define all water in the Upper San Luis Rey Valley Groundwater Subbasin—including water flowing in "known and definite [subterranean] channels"—to be groundwater. (Water Code §§ 10722.5) Under general California law, this flowing underground water is defined and regulated as surface water. (Littleworth and Garner 2019, Chapter 4)

[210] The Act contains several, related definitions of sustainability. "Sustainable groundwater management means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results." (§ 10721(v)) These undesirable results are: "(1) Chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon. . . . (2) Significant and unreasonable reduction of groundwater storage. (3) Significant and unreasonable seawater intrusion. (4) Significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies. (5) Significant and unreasonable land subsidence that substantially interferes with surface land uses. (6) Depletions of hydrologically connected surface water." (§ 10721(x))

The statute also sets a "sustainability goal," which it defines as "the existence and implementation of one or more groundwater sustainability plans that achieve sustainable groundwater management by identifying and causing the implementation of measures targeted to ensure that the applicable basin is operated within its sustainable yield." It defines sustainable yield as "the maximum quantity of water, calculated over a base period representative of long-term conditions in the basin and including any temporary surplus, that can be withdrawn annually from a groundwater supply without causing an undesirable result." (§ 10721(w))

preparation or administration of a groundwater sustainability plan . . . under this part through a joint powers authority or other agreement with local agencies in the basin." (Water Code § 10720.3(c))[211]

The statue then stipulates that, "in an adjudication of rights to the use of groundwater, and in the management of a groundwater basin or subbasin by a groundwater sustainability agency or by the [State Water Board], federally reserved water rights to groundwater shall be respected in full." The Act also declares that, in cases of conflict between federal and state law, "federal law shall prevail." (Water Code § 10720.3(d)) In addition, SGMA states more generally that nothing in the statute or any groundwater sustainability plan "determines or alters surface water rights." (Water Code § 10720.5(b))

Finally, SGMA requires GSAs to "consider the interests of all beneficial uses and users of groundwater" in drafting and implementing their respective sustainability plans. These beneficial users include overlying groundwater right holders, municipal well operators and public water systems, disadvantaged communities, environmental users of groundwater, surface water users (where surface water is affected by groundwater extraction and management), the United States, and California Native American Tribes. (Water Code § 10723.2)

The California Department of Water Resources has worked to facilitate Tribal participation in SGMA planning and implementation. Its Office of Tribal Affairs has conducted outreach to educate Tribal leaders and resource managers about SGMA, their groundwater rights, and the options and opportunities for Tribal engagement. (California Department of Water Resources 2015) The Department also provided guidance to GSAs on their responsibility to consult with the Tribes within their groundwater basins and to ensure that the terms of their respective sustainability plans protect the Tribes' water rights and other interests as set forth in SGMA. (California Department of Water Resources 2018) In addition, DWR has awarded $150 million in funding to support 102 projects that will benefit "underrepresented or severely disadvantaged communities, including Tribes. These projects include groundwater recharge, water efficiency, feasibility studies for alternative water supplies, and the installation of monitoring wells." (California Department of Water Resources 2022b)[212]

Despite these efforts, only a few Tribal governments have chosen to engage in the SGMA process on a long-term basis. The Yocha Dehe Wintun Nation has a seat on the board of the Yolo Subbasin Groundwater Agency, and the Guidiville Rancheria represents itself and five other Tribes on the board of the Ukiah Valley Basin GSA.[213] (Yolo Subbasin Groundwater Agency 2026; Ukiah Valley Basin GSA 2026) Several other Tribes have participated in certain aspects of the SGMA implementation. For example, in 2021, the Lone Pine Paiute Shoshone Tribe participated in the formulation of the Owens Valley Groundwater Sustainability Plan as an "interested party." (Owens Valley Groundwater Authority

---

[211] The statute also provides that a "participating Tribe shall be eligible to participate fully in planning, financing, and management [of SGMA implementation], including eligibility for grants and technical assistance, if any exercise of regulatory authority, enforcement, or imposition and collection of fees is pursuant to the Tribe's independent authority and not pursuant to authority granted to a groundwater sustainability agency." (Water Code § 10720.3(c))

[212] The DWR Office of Tribal Affairs continues to work with Tribes, GSAs, water agencies, and other organizations to facilitate consultation with Tribal governments and incorporation of Indigenous knowledge into ongoing groundwater management and SGMA implementation. (California Department of Water Resources 2026a)

[213] The five Tribes are the Redwood Valley Rancheria, the Coyote Valley Band of Pomo Indians, the Pinoleville Pomo Nation, the Hopland Band of Pomo Indians, and the Potter Valley Rancheria. (Ukiah Valley Basin GSA 2026)

2021) And, in 2022, the San Luis Rey Indian Water Authority objected to the draft GSP for the Upper San Luis Rey Valley Groundwater Basin on a variety of grounds. (San Luis Rey Indian Water Authority 2022c)[214]

The reasons for the relative lack of Tribal participation in SGMA vary. Factors include: inadequate Tribal information about their groundwater resources and potential groundwater rights, a reluctance to transfer or share decisionmaking authority with non-Tribal entities, concern that Tribal interests and water rights would not be well-represented or adequately protected in the groundwater sustainability planning and implementation processes, and skepticism about the assurances provided in SGMA regarding protection of Tribal water rights. (Various Interviews)[215]

Although SGMA does offer theoretical opportunities for Tribes to play a significant role in groundwater management, the realities of GSA formation and GSP formulation suggest that the decisions by most Tribal governments in California not to participate were prudent. Except for the two Tribes with quantified federal reserved rights to groundwater—the Timbisha Shoshone and the Agua Caliente—Tribal groundwater rights in California are ill-defined and uncertain. They are also largely undeveloped. These facts have two consequences. First, as small or inactive groundwater users, it is unlikely that Tribes would be well-represented within most individual groundwater sustainability agencies. Second, regardless of GSA membership, Tribes that participate in SGMA could be subject to pumping limitations, extraction charges, higher fees for new pumping, and other restrictions on new groundwater that are a common feature of groundwater sustainability plans and local agency policies. It would thus be reasonable for a Tribe to conclude that it is better to decline the invitation to join the SGMA process than to risk diminution of its members' current and future rights to extract and use their groundwater resources.[216]

Yet, Tribal avoidance of SGMA may have come at a cost. Most of the initial GSPs submitted to DWR for its review lacked information about outreach or consultation with Tribes and disadvantaged communities. DWR records and other studies also show that many GSPs also failed to contain measures to avoid or mitigate harm to domestic wells, small community water systems, and hydrologically connected surface water resources. (Arthur et al. 2022; California Department of Water Resources 2026b) These inadequacies are not surprising, as GSAs are likely to focus on matters of concern to the active water

---

[214] The Indian Water Authority alleged that the Upper San Luis Rey Groundwater Management Authority GSA failed to consider "how the Bands' federally reserved water rights could, should, or might be respected in full in the management of an Upper Basin GSP," even though the Bands' reservation and fee lands comprise 38 percent of the basin. The Bands also argued that the draft GSP's conclusion that their federally reserved water rights are "'not a right that a federal or tribal entity can claim without going to court in an appropriate adjudication" violated the express directives of section 10720.3(d) of SGMA. (San Luis Rey Indian Water Authority 2022c)

In 2018, the Indian Water Authority persuaded the California Legislature to amend SGMA to divide the San Luis Rey Valley Groundwater Basin into an upper and lower subbasin and to empower the Upper Basin GSA "to include certain water within the subbasin flowing in known and definite channels" in its groundwater sustainability planning and management. (California Legislature 2018; Water Code § 10722.5) This change was made to protect the groundwater resources of the Pala Band, whose federal reserved water rights to water underlying its reservation otherwise would have been excluded from SGMA. (Maven's Notebook 2019)

[215] For an illuminating discussion of various Tribal governments' early reactions to SGMA, see Maven's Notebook (2019).

[216] As noted above, both federal law and SGMA categorically protect federal reserved water rights from forfeiture, quantitative reduction, restrictions on use, extraction fees, and other limitations of SGMA, an applicable GSP, or other aspects of California law. Tribal groundwater water rights based on state law would not have these same protections, however.

users within the basin whose interests the GSAs both embody and represent. But these reports do highlight the risk of treating essential policy goals as third-party interests, rather than as key constituents. Although it is doubtful whether Tribal representation on most GSAs would have significantly changed either GSA decisionmaking or the contents of its sustainability planning, this will remain an unanswered question.

Protection of Tribal Beneficial Uses

The state and federal water quality laws also may serve to protect Tribal water rights and other Tribal uses of water. One of the most important recent programs is the designation of Tribal beneficial uses and the establishment of water quality objectives to protect those uses.

The State Water Resources Control Board and the nine Regional Water Quality Control Boards have general authority to set water quality standards for California's rivers, lakes, and estuaries.[217] These standards consist of designated beneficial uses and water quality objectives is to protect public health and safety, ecological health and resiliency, and other essential services provided by the state's freshwater resources. Long-standing designated beneficial uses, as defined in the California Water Code, include: "domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves." (Water Code § 13050(f))[218] The State and Regional Boards' designation of beneficial uses, adoption of water quality objectives, and implementation and enforcement of those objectives by regulating the discharge of pollutants into the state's waters are authorized by both the federal Clean Water Act and the California Porter-Cologne Water Quality Act. (Littleworth and Garner 2019, Chapter 7)

In 2016 and 2017, the State Water Board established three new beneficial use definitions: Tribal Tradition and Culture, Tribal Subsistence Fishing, and Subsistence Fishing. (California State Water Resources Control Board 2016, 2017a) The purpose of the Tradition and Culture category was to protect ceremonial and other traditional Tribal practices in, or making use of, California's inland waters, bays, and estuaries from activities that may diminish the quality of water below the levels needed to support the Tribal practices. The purpose of the two subsistence categories was to provide heightened protection against pollutants that pose "risks to human health from the consumption of aquatic resources, including fish and shellfish." (California State Water Resources Control Board 2017a)[219]

---

[217] The Regional Boards also have authority to establish "total maximum daily loads" impaired waters—i.e., waters with concentrations of individual pollutants that chronically exceed water quality objectives. These TMDLs define the maximum quantity of each pollutant that can be discharged daily into a body of water without exceeding the applicable water quality objective. TMDLs usually include aggregate limits and individual limits on point and non-point source dischargers. (US Environmental Protection Agency 2025c; California State Water Resources Control Board 2018)

[218] The State Board has authority to add to the list of designated beneficial uses. For a complete list, see California State Water Resources Control Board (2025b), Chapter 2.

[219] Tribal Tradition and Culture uses are "uses of water that support the cultural, spiritual, ceremonial, or traditional rights or lifeways of California Native American Tribes," including, but not limited to: "navigation, ceremonies, or fishing, gathering, or consumption of natural aquatic resources, including fish, shellfish, vegetation, and materials." Tribal Subsistence and Fishing are

The State Water Board then encouraged the nine Regional Quality Control Boards to designate specific Tribal beneficial uses for each of the watersheds within their respective jurisdictions and to include appropriate water quality objectives, TMDLs, and other criteria in their water quality control plans to protect such uses. The Board stipulated, however, that state and regional water board staff shall "ensure that orders or water quality control plans do not contain conditions or requirements to address flow needs for fisheries or aquatic habitat to protect a [Tribal cultural or subsistence] beneficial use." It explained that "fish populations and aquatic habitats are protected by other beneficial uses . . . which could require orders or plans to include flow conditions or requirements to protect those uses." (California State Water Resources Control Board 2017a)

All nine regional boards report that they are engaging with the Tribes and the public and are prioritizing Tribal beneficial uses in their triennial reviews of their basin plans. Six regional boards have incorporated Tribal beneficial use definitions into their water quality plans. None has yet made final designations of Tribal beneficial uses for specific lakes, estuaries, and river segments within their respective jurisdictions, however. (California State Water Resources Control Board 2026c)[220]

In addition, the State Water Board has proposed to incorporate both Tribal beneficial use definitions in its most recent update to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Watershed. The July 2025 draft explains that the proposed Tribal Tradition and Culture beneficial use designation is

"based on substantial evidence provided to the State Water Board through Tribal outreach and engagement efforts. Tribal representatives shared through written and verbal testimony the significance of salmon within Tribal culture, including in creation stories, as a centerpiece of traditional ceremonies and feasts (such as traditional salmon bakes), and the general correlation of Native American life ways with the timing and locations of northern California salmon runs." (California State Water Resources Control Board 2025b)

The Board then explained that it has proposed to designate Tribal Tradition and Culture beneficial uses "throughout the Bay-Delta watershed due to the cultural and spiritual importance of native fish and wildlife, particularly salmon, to California Native American Tribes. Salmonids utilize the watershed both temporally and spatially at various life stages, and the Tribes' cultural and spiritual use is centered on the

---

"uses of water involving the non-commercial catching or gathering of natural aquatic resources, including fish and shellfish, for consumption by individuals, households, or communities of California Native American Tribes to meet needs for sustenance." The Subsistence Fishing category, which essentially restates the Tribal Subsistence definition, applies generally to subsistence fishing, both Tribal and non-Tribal. (California State Water Resources Control Board 2017b, 2025b)

[220] The Lahontan Regional Board has drafted amendments to its water quality plan that would designate site-specific Tribal Tradition and Culture beneficial uses for Mono Lake and many of its tributary streams and upstream lakes. The regional board developed these designations, as well as accompanying water quality objectives, in consultation with the Mono Lake Kootzaduka'a Tribe and the Bridgeport Indian Colony, whose ancestral lands encompass all or portions of the Mono Basin. The board decided not to adopt site-specific Tribal Subsistence Fishing beneficial use designations, however, based on its conclusion that there was insufficient information to document active Tribal subsistence fishing in the Mono Lake tributaries. (Lahontan Regional Water Quality Control Board 2024) The Mono Lake Kootzaduka'a Tribe has disputed this determination. State Water Board and Lahontan Regional Board staff are continuing to work with the Tribe to resolve this question, and they expect to have a revised basin plan amendment completed for public review and regional board consideration sometime in 2026. (Interview with State Water Resources Control Board Staff)

connectivity between themselves and their ancestors with these species and the ecosystem that supports them." (California State Water Resources Control Board 2025b)

The Draft Water Quality Control Plan Update does not identify specific locations within the Bay-Delta watershed where individual Tribes or Tribal members are engaged in traditional or cultural uses. Nor does it propose to establish water quality objectives for such uses. Rather, the draft plan explains that "reasonable protection of [Tribal Tradition and Culture beneficial uses] as it relates to the Tribes' cultural and spiritual connection to salmon overlaps with the reasonable protection of the aquatic life beneficial uses identified in the Bay-Delta Plan or designated in the applicable Regional Water Boards' water quality control plans"—including various designated protections for fish and wildlife. "Accordingly, the objectives needed to protect both categories of beneficial uses overlap and are addressed by the objectives and program of implementation in this plan." (California State Water Resources Control Board 2025b)[221]

Nor did the State Water Board propose to designate any Tribal Subsistence Fishing or General Subsistence Fishing beneficial uses within the Bay-Delta watershed. Although it acknowledged that both categories "relate to the risks to human health from consumption of noncommercial fish or shellfish at higher rates," the board observed that "a thriving fish population could support fishing at higher consumptive rates." The board therefore decided that it could continue to rely on the other beneficial use designations that protect California's fisheries—including those for warm and cold water habitat, estuarine habitat, endangered and threatened species, and spawning, reproduction, and early development—to protect Tribal and general subsistence fishing beneficial uses of the same waters. (California State Water Resources Control Board 2025b)[222]

The Board emphasized that "there are many important water uses that must be considered carefully when determining regulatory flow requirements for fish and wildlife, including municipal, industrial, agricultural, hydropower, and recreational uses as well as other environmental uses, such as wetlands and refuges." It concluded that "incorporating [Tribal beneficial uses] into the Bay-Delta Plan recognizes the Tribes' voices and participation in this process." (California State Water Resources Control Board 2025b)

It is an open question whether the new designations for Tribal beneficial uses will adequately protect the interests of the diverse Tribal Nations within California. The new beneficial use categories recognize Tribal practices and water quality interests that state and federal law did not previously specifically protect. Although the Regional Boards have not yet formally identified individual stream segments and other bodies of water that have Tribal beneficial uses, or established water quality objectives for

---

[221] The State Water Board did note that, "in the future, additional flow-based water quality objectives or site-specific water right requirements may be considered if needed to protect other Tribal uses and activities encompassed within the [Tradition and Culture beneficial use designation]. In addition, the Regional Water Boards may amend their water quality control plans to recognize other [traditional and cultural] Tribal uses and activities where they occur within the Bay-Delta watershed, and [they] may need to consider new water quality objectives or site-specific discharge requirements for the reasonable protection of [such] uses in the watershed." (California State Water Resources Control Board 2025b)

[222] Here again, the State Water Board observed that "individual stream segments could also be designated for [Tribal and general] beneficial uses as appropriate by the Regional Water Boards." (California State Water Resources Control Board 2025b) The Central Valley Regional Board is currently in the process of identifying specific rivers and other waterbodies within the Sacramento and San Joaquin River basins and the Tulare Lake basin for which it may designate Tribal Tradition and Culture beneficial uses. (Interview with State Water Resources Control Board staff)

designated waters to protect those uses, the Lahontan Regional Board's draft water quality plan update for the Mono Basin does show the potential for statewide designation and protection of Tribal beneficial uses.

Yet, the State Board's categorical exclusion of water quality objectives or implementation measures that could require water users to release or bypass water to protect designated Tribal beneficial uses—and its concomitant reliance on water quantities and flows that are *already required* to protect other categories of beneficial use—raise doubts about the practical value of the new Tribal beneficial use designations. Moreover, some traditional and cultural practices—such as the Yurok and Karuk Boat Dances and the Winnemem Wintu First Salmon ceremony—require a minimum volume and flow of water. Flows for these types of activities are not "otherwise protected" by water quality objectives for fish and wildlife conservation and propagation. Regulatory decisions to set general, system-wide water quality objectives, rather than identifying specific river segments and individual bodies of water where protection of Tribal uses is required, are also likely to diminish the effectiveness of the Tribal beneficial use program.[223]

Tribal Authority to Administer Federal Water Quality Regulations

Section 518 of the Clean Water Act authorizes the US Environmental Protection Agency to "treat an Indian tribe as a State" for purposes of administering an array of water quality regulations. (33 USC § 1377(e))[224] Pursuant to this authority, Tribes may designate beneficial uses, set water quality criteria (including antidegradation policies) to protect those uses, regulate land uses that may impair water quality, and issue permits governing the discharge of pollutants and dredge and fill materials. Tribal regulatory jurisdiction applies to all marine and inland surface waters within the exterior boundaries of their respective reservations, including qualifying wetlands. (US Environmental Protection Agency 2025d, 2025e)[225]

The US Environmental Protection Agency has authorized 18 federally recognized Tribes in California to administer federal water quality standards within their respective reservations.[226] Several of these Tribes have their own water codes and regulations, and six have adopted water quality plans. (US Environmental Protection Agency 2026) Although some Tribes have their own authority to issue permits for the

---

[223] The State Water Board conducted multi-day hearings on the Draft Bay-Delta Water Quality Control Plan Update in January 2026 at which several Tribes (along with a variety of environmental NGOs) offered critical comments. (Maven's Notebook 2026)

[224] To qualify for "Tribe as a State" (TAS) status, a Tribe must be federally recognized and demonstrate that it: (1) has a governing body that exercises "substantial governmental duties and powers"; (2) has authority over water resources held by the Tribe, Tribal members, or the United States in trust for the Tribe; and (3) "is reasonably expected to be capable, in the [EPA's] judgment, of carrying out the functions to be exercised in a manner consistent with" the Clean Water Act and applicable regulations. (33 USC § 1377(e))

[225] TAS status also allows a Tribe to receive and administer federal grants for a variety of water resources projects. (33 USC § 1377(e)-(f) & 1383(c))

[226] The Tribes with TAS authority to administer the requirements of section 303(c) of the Clean Water Act are: the Big Pine Paiute Tribe of the Owens Valley, the Bishop Paiute Tribe, the Cabazon Band of Mission Indians, the Chemehuevi Tribe, the Dry Creek Rancheria Band of Pomo Indians, the Hoopa Valley Tribe, the Karuk Tribe, the La Jolla Band of Luiseño Indians, the La Posta Band of Diegueno Mission Indians, the Morongo Band of Mission Indians, the Pala Band of Mission Indians, the Quartz Valley Indian Community, the Resighini Rancheria, the Rincon Band of Luiseño Mission Indians, the Table Mountain Rancheria, the Twenty-Nine Palms Band of Mission Indians, and the Yurok Tribe. (US Environmental Protection Agency 2026)

discharge of pollutants and other harmful materials into their waters, none has yet obtained federal permitting authorization from EPA. (Anderson 2025)

The "Tribes as States" (TAS) program has great potential. Yet, because the participating Tribes' authority is limited by the boundaries of their respective reservations, they remain vulnerable to upstream activities that may deplete flows, degrade water quality, or contribute pollutants that impair Tribal beneficial uses. For these protections, the Tribes must rely on the broader state and federal water quality regulations described in the preceding section.

Despite these limitations, the TAS program serves as a model of "collaborative federalism,"—an evolving "balance of state, Tribal, and federal powers to promote the protection of the waters within the United States." TAS status enhances participating Tribes' ability to "effectuate [water quality] standards that reflect Tribal needs and values that are otherwise not accommodated in state or federal standards. (Anderson 2025) It also is an affirmation of Tribal sovereignty that recognizes the capacity of the participating Tribes to manage their own water resources to protect public health and welfare, to protect and sustain ancestral fisheries, and to serve as stewards of the lands and aquatic ecosystems whose long-term health is vital to all of these interests.

Conclusion

For Native Californians, the 250-year period of Spanish, Mexican, and United States rule "is neither introductory nor climactic. Instead, it is pivotal." As Camilla Townsend has written, the Indigenous inhabitants have been remarkably—and necessarily—flexible. "As situations altered, they repeatedly proved themselves capable of adapting. They were adept at surviving." (Townsend 2019)[227]

In Alta California, and later the State of California, these adaptations took many forms. Some Tribes persevered on the reservations and rancherias that the United States created in the second half of the 19th and early 20th centuries—building new economies and social structures, while also preserving their ancestral languages, cultural mores, and religious practices. Others survived in a larger diaspora and later reconstituted themselves in new communities. Some Tribes and individuals resisted the laws and practices that the new governments imposed on them by asserting their rights to ancestral lands, waters, fish and game, and other resources.

None of this came easily, of course. California's Native Peoples would file innumerable lawsuits to claim their rights; work with Congress, the Executive Branch, and state agencies to secure them; endure the vicissitudes of law and politics; and strive to remind the general public that they remain vital threads in the fabric of contemporary California.

Tribal water rights are an important part of this story. The 16 Tribes that now hold quantified water rights show how a secure water endowment creates a foundation for community development, sustainable

[227] Both quotations are from Professor Townsend's *Fifth Sun* (2019), her "New History of the Aztecs," which is based on the writings of the immediate descendants of the Mexica and Nahua survivors of the Spanish Conquest of Central Mexico.

economies, and integration of the Tribes into broader markets and regional water resources management. Their experiences are also examples of how these components can strengthen Tribal sovereignty and self-governance, as well as enable the Tribes to simultaneously modernize and maintain their traditional cultures and practices.

Yet, these 16 Tribes also serve as reminders that there is much work to be done. Continued support from the federal and state governments will be essential. This must include financial support for new water resources infrastructure and political support to enable the Tribes that do not yet have quantified water rights to effectuate their rights. The 93 Tribes that do not have quantified reserved water rights, and the more than 55 Tribes that do not currently qualify for federal reserved water rights, must become a focus of this work.

* * *

The California Natural Resources Agency recently announced an initiative that is both redolent of history and a portent of progress. It has created a Tribal Stewardship Policy with a statewide goal of expanding Tribal stewardship over at least 7.5 million acres of lands and coastal waters in California. (California Natural Resources Agency 2026b; Haggerty 2026)[228] The agency has explained:

"For generations, state policies directed state agencies to resist and ignore tribal stewardship, undervalue Traditional Ecological Knowledge, and criminalize traditional practices. The legacy of these policies caused lasting harm to tribal and non-tribal communities alike and weakened the health of California's lands and waters. Today, tribal stewardship and traditional ecological knowledge practices stand as proven approaches to addressing urgent environmental challenges, including catastrophic wildfire, salmon recovery, biodiversity loss, and coastal resilience."

It also noted that 7.5 million acres is approximately the amount of land that would have been reserved for the state's Indigenous inhabitants if the Senate had ratified the 18 treaties in 1852. (California Natural Resources Agency 2026b)

As John Leshy has observed, "While the arc of the moral universe bends toward justice, it can be long." (Leshy 2022)

[228] Tribal stewardship could take many forms, including fee title, access agreements, conservation easements, and co-management arrangements. The Natural Resources Agency noted that it and other state agencies have facilitated "the return of approximately 103,000 acres of land back to California Native American tribes," and that "State Parks has entered into 15 memoranda of understanding . . . and Joint Powers Agreements with California Native American tribes for tribal access and collaboration over 89 Parks Units covering approximately 939,000 acres." (California Natural Resources Agency 2026b)

REFERENCES

Advisory Council on California Indian Policy. 1997. The Continuing Destructive Effects of the Termination Policy on California Indians.

Agua Caliente Band of Cahuilla Indians. 2024. Tribal Land Use Ordinance: Zoning Districts.

Agua Caliente Band of Cahuilla Indians. 2025. Agua Caliente Band of Cahuilla Indians Water Rights Settlement Agreement.

Agua Caliente Band of Cahuilla Indians. 2026. Code of Ordinances, Chapter 7.12: Water Authority.

Agworld. 2025. Avi Kwa Ame Farms Case Study.

Akins, Damon, and William Bauer, Jr. 2021. We Are the Land: A History of Native California. University of California Press.

Aldern, Jared. 2019. *How Yurok and Karuk Traditions Sustain Delicate Balance of North Coast Species.* PBS Southern California.

Alexander, Kurtis. 2025a. *Huge Swath of Northern California to be Preserved Amid Largest-Ever Land Transfer to Tribe.* San Francisco Chronicle, June 5, 2025.

Alexander, Kurtis. 2025b. *New California Dam Removal Could Restore a River and Destroy a Community.* San Francisco Chronicle, Aug. 9, 2025.

Alexander, Kurtis. 2025c. *California Dam Removal Plan Blasted by Trump Administration.* San Francisco Chronicle, Sept. 8, 2025.

Al-Kaisi, Mahdi. n.d. Crop Water Use or Evapotranspiration. Iowa State University.

Anderson, Ashley Dawn. 2025. An Introduction to the Clean Water Act. Native American Rights Fund.

Anderson, M. Kat. 2005. Tending the Wild: Native American Knowledge and the Management of California's Natural Resources. University of California Press.

Anishinaabe History. 2025. Furnace Creek, Timbisha Reservation.

Arizona Supreme Court. 2001. *In re General Adjudication of All Rights to Use Water in the Gila River System and Source,* 201 Ariz. 307, 35 P.3d 68.

Arizona Department of Water Resources. 2019. Agreement Between the Arizona Department of Water Resources and the Bonneville Environmental Foundation to Fund the Creation of System Conservation Water in Lake Mead by the Colorado River Indian Tribes.

Arthur, Samantha, Ngodoo Atume, J. Pablo Ortiz-Partida, Melissa Rohde. 2022. Groundwater Sustainability Assessments: A Review of the Department of Water Resources' Determinations on Groundwater Sustainability Plans in Critically Overdrafted Basins. Groundwater Leadership Forum.

Association of California Water Agencies. 2023. Vista Irrigation District Turns 100.

Association of Ramaytush Ohlone. 2025. Ramaytush Territory.

Bardeen, Sarah. 2024. *A Promising New Effort to Save California's Salmon: Interview with Rachel Johnson.* Public Policy Institute of California Blog, Oct. 7, 2024.

Bartoo-Smith, Nika. 2024. *A Land Back Win for the Yurok Tribe.* underscore Native News, Mar. 25, 2024.

Bartoo-Smith, Nika. 2025. *Yurok Tribe Celebrates Largest Land Back Deal in California History.* underscore Native News, June 16, 2025.

Bass, Dana. 2018. *Agua Caliente: A Case Study and Toolkit for Securing Tribal Rights to Clean Groundwater. Ecology Law Quarterly,* Vol. 45, pp. 227-52.

Bean, Lowell John. 1972. Mukat's People: The Cahuilla Indians of Southern California. University of California Press.

Bean, Lowell John. 1978. Cahuilla. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Bean, Lowell John, and Florence Shipek. 1978. Luiseño. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Bean, Lowell John, and Charles Smith. 1978. Serrano. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Becker, Rachel. 2022. *Ranchers, Tribes, State Officials Clash over Shasta River Water.* CalMatters, Aug. 30, 2022.

Becker, Rachel. 2026. A Contentious Project to Raise California's Shasta Dam Just Got a Funding Boost from Trump. CalMatters, Mar. 18, 2026.

Bennett, Eleanor. 2025. *Indigenous Youths Finish Historic Journey Down Klamath River with Help of Aspen-Based Nonprofit After Dams Removed.* KUNC, NPR News, July 27, 2025.

Biller, Steven. 2025. Of Palms and Prospectors: The Fascinating History of Corn Springs. Palm Springs Life, July 20, 2025.

Bloom, Izzy. 2023. *How a California Tribe Fought for Years to Get Their Ancestral Land Back in Eureka.* The California Report Magazine, Nov. 3, 2023.

Borgias Sophia. 2024a. *Denaturalizing Dispossession in the Political Ecology of the American West: Reassessing the History of the Los Angeles Aqueduct and Its Implications for Indigenous Land and Water Rights.* Annals of the American Association of Geographers, Vol. 114, pp. 1232-50.

Borgias Sophia. 2024b. *Drought, Settler Law, and the Los Angeles Aqueduct: The Shifting Political Ecology of Water Scarcity in California's Eastern Sierra Nevada.* Journal of Political Ecology, Vol. 31, pp. 1012-29.

Bradley, Chad, and Anna Smith. 2026. LandBack Advances Across the West. High Country News, Feb. 16, 2026.

Branch, John. 2025. *First Time in 100 Years: Young Kayakers on a Ride for the Ages.* New York Times, June 17, 2025.

Bremer, Jessica. 2024. *Groundwater Overdraft is Dispossession.* Journal of Political Ecology, Vol. 31, pp. 1030-50.

Bright, William. 1978. Karok. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Buckley, James. 2024. City of Wood: San Francisco and the Architecture of the Redwood Lumber Industry. University of Texas Press.

Bugbee, Richard. 2025. The Indians of San Diego County.

Business Wire. 2021. Expanded Partnership Between Metropolitan, Quechan Tribe Will Conserve Colorado River Water, Help Protect Lake Mead.

Cahuilla Band of Indians. 2025. History.

California Court of Appeal. 1966. *Elser v. Gill Net Number One,* 246 Cal. App. 2d 31.

California Court of Appeal. 1975. *Arnett v. Five Gill Nets,* 48 Cal. App. 3d 454.

California Department of Fish and Wildlife. 2023. Press Release: CDFW Takes Steps to Return Land to California Tribe.

California Department of Fish and Wildlife. 2024. CDFW Awards $17M to Critical Restoration Projects Statewide.

California Department of Fish and Wildlife. 2025. Natural Resources Agency Thanks Tribal Leaders, Northern California Counties and Conservation Groups for Their Leadership as Historic Agreement Announced to Secure Water Reliability in the Russian River, Benefit Salmon on the Eel River.

California Department of Fish and Wildlife. 2026a. Chinook Salmon.

California Department of Fish and Wildlife. 2026b. Compare CESA to the Federal Endangered Species Act.

California Department of Water Resources. 2015. Tribal Engagement in California Water Policy Implementation: California Water Rights, Groundwater and the Drought. California Indian Law Association, 15th Annual Conference, October 16, 2015.

California Department of Water Resources. 2018. Engagement with Tribal Governments: Guidance Document for the Sustainable Management of Groundwater.

California Department of Water Resources. 2022a. State Delivers $15 Million To Support Tribal Water Infrastructure Projects.

California Department of Water Resources. 2022b. DWR Program Assists Tribal and Underrepresented Communities with Groundwater Challenges.

California Department of Water Resources. 2026a. Tribal Engagement and SGMA Implementation.

California Department of Water Resources. 2026b. SGMA Portal: All Submitted GSPs.

California Governor's Office. 2020. Executive Order No. 82-20.

California Indian Legal Services. 2024. California Indian Water Rights Study.

California Interpretative Trails Center. 2025. Nome Cult Trail.

California Language Archive. 2025a. California Languages: Quechan (Yuma).

California Language Archive. 2025b. California Languages: Kumeyaay (Diegueño).

California Language Archive. 2025c: California Languages: Panamint.

California Legislature. 1850. An Act for the Government and Protection of Indians. California Statutes at Large, Chapter. 133, § 2, p. 408.

California Legislature. 2018. Assembly Bill No. 1944, Chapter 255.

California Missions Foundation. n.d. The California Missions.

California Native American Heritage Commission. 2016. Consultation Policy.

California Native American Heritage Commission. 2026. A Short Overview of California Indian History.

California Natural Diversity Database. 2026. State and Federally Listed Endangered and Threatened Animals of California. California Department of Fish and Wildlife.

California Natural Resources Agency. 2026a. Tribal Nature-Based Solutions Program.

California Natural Resources Agency. 2026b. "New Era": Landmark Policy to Expand Tribal Stewardship for At Least 7.5 Million Acres in California.

California Outdoor Properties. 2024. California Outdoor Properties Announces the Sale of the 1,668-Acre Reservation Ranch Listed at $12.95M.

California Regional Water Quality Control Board, Region 9. 1995. San Diego Basin Hydrologic Planning Area Map.

California State Lands Commission. 1982. Grants of Land in California Made by Spanish or Mexican Authorities.

California State Parks. 2026a. Anza Expedition Camp: Historical Landmark No. 47.

California State Parks. 2026b. Marshall Gold Discovery State Historic Park.

California State Water Resources Control Board. 2016. Resolution No. 2016-11: Directing Staff to Develop Proposed Beneficial Uses Pertaining to Tribal Traditional and Cultural Tribal Subsistence Fishing, and Subsistence Fishing.

California State Water Resources Control Board. 2017a. Resolution No. 2017-27: Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions.

California State Water Resources Control Board. 2017b. Final Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions.

California State Water Resources Control Board. 2018. Total Maximum Daily Load Program.

California State Water Resources Control Board. 2019. Tribal Consultation Policy.

California State Water Resources Control Board. 2023. Fact Sheet: State Water Board Adopts Order Requiring BlueTriton to Cease Most Diversions in San Bernardino Forest.

California State Water Resources Control Board. 2025a. Initial Statement of Reasons for Regulatory Action.

California State Water Resources Control Board. 2025b. Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Watershed (July 2025 Draft).

California State Water Resources Control Board. 2026a. Electronic Water Rights Information Management System.

California State Water Resources Control Board. 2026b. Potter Valley Hydroelectric Project.

California State Water Resources Control Board. 2026c. Regional Water Board Progress Updates on Tribal Beneficial Uses.

California Superior Court, County of Tulare. 1916. Poplar Irrigation Co. v. A.A. Howard. Case No. 7004.

California Superior Court, County of Riverside. 1938. In re Waters of the Whitewater River and Its Tributaries. Case No. 18035.

California Supreme Court. 1984. *People v. McCovey,* 36 Cal. 3d 517.

California Supreme Court. 1988. *In re Waters of Hallett Creek Stream System,* 44 Cal. 3d 448.

California Supreme Court. 2000. *City of Barstow v. Mojave Water Agency,* 23 Cal. 4th 1224.

California Trout 2022. Upper Klamath-Trinity Rivers Spring-Run Chinook Salmon.

Cannon, Gabrielle. 2026. *Western US States Fail to Negotiate Crucial Colorado River Deal.* The Guardian, Feb. 13, 2026.

Caragozian, John. 2022. The Demise of California's Ranchos.

Castetter, Edward, and Willis Bell. 1951. Yuman Indian Agriculture: Primitive Subsistence on the Lower Colorado and Gila Rivers. University of New Mexico Press.

Catton, Theodore. 2009. To Make a Better Nation: An Administrative History of the Timbisha Shoshone Homeland Act. Rocky Mountain Cooperative Ecosystem Studies Unit, Death Valley National Park.

Caudell, Miranda. 2017. *A People's Journey.* me-yah-whae, Winter 2016-17, pp. 50-55.

Census Reporter. 2023. Tule River Reservation.

Central Valley Regional Water Quality Control Board. 2022. Tribal Beneficial Uses Designations: A Primer to the Basin Plan Amendment Process.

Chilcote, Olivia. 2024. Unrecognized in California: Federal Acknowledgement and the San Luis Rey Band of Mission Indians. University of Washington Press.

Civil Engineering Source. 2025. Benefits Flow Quickly as Historic Dam Removal Restores Klamath River. American Society of Civil Engineers.

Coachella Valley Mountains Conservancy. 2026. Press Release: Agua Caliente Band of Cahuilla Indians Protect Palm Canyon Watershed.

Coachella Valley Water District. 2018. The Story of the Coachella Valley Water District.

Coachella Valley Water District. 2023. Coachella Valley Water District Whitewater River Groundwater Replenishment Facility Project: Final Environmental Impact Report.

Coachella Valley Regional Water Management Group. 2020. 2018 Coachella Valley Integrated Regional Water Management & Stormwater Resource Plan (amended).

Colorado River Indian Tribes. 2019. Colorado River Indian Tribes Assumes Major Role in Drought Relief Efforts in Arizona and Western United States.

Colorado River Board of California. 2023. California Agencies and Bureau of Reclamation Sign Agreements to Protect Colorado River. Association of California Water Agencies.

Colusa Indian Community Council. 2013. Farming.

Congressional Research Service. 2024. Klamath River Dam Removal and Restoration.

Congressional Research Service. 2025a. Indian Water Rights Settlements.

Congressional Research Service. 2025b. Management of the Colorado River: Water Allocations, Drought, and the Federal Role.

Conservation Fund. 2023. Hoopa Valley Tribe Regains Major Tract of Ancestral Land.

Cook, Sherburne. 1976. The Population of the California Indians: 1769-1970. University of California Press.

Cordalis, Amy Bowers. 2025. The Water Remembers. Little, Brown & Company.

Cotsirilos, Teresa. 2024. *California's Nüümü People Claim L.A. Stole Their Water, Now They're Fighting for Its Return.* The California Report Magazine, May 16, 2024.

Cosens, Barbara. 2006. *Indian Water Rights Settlement Conference Keynote Address.* Denver Law Review, Vol. 9. Issue 2.

Cowan, Jill, and Mike Kai Chen. 2024. *In California, Tribal Members are Reclaiming the "Land of the Flowing Water."* New York Times, June 16, 2024.

Dance, Scott. 2026. *States Miss a Big Deadline, Ending Chance for a Colorado River Water Deal.* New York Times, Feb. 13, 2026.

De Crinis, Monica. 2020. *Building on Water.* Palm Springs Life, April 13, 2020.

De Crinis, Monica. 2021. *Cahuilla Territory.* ma-ya-whae, Fall/Winter 2021-22, pp. 58-69.

Del Norte County Historical Society. n.d. The Yurok.

Del Norte Triplicate. 2025. Yurok Tribe Opposes Major Aspect of Marine Stewardship Initiative. Del Norte Triplicate, April 12, 2025.

Desert Review. 2024. *California Water Users Add 1.2 Million Acre-Feet of Water in Just Two Years to Lake Mead.* The Desert Review, Dec. 4, 2024.

Desert Water Agency. 2021. Who We Are.

Doremus, Holly, and Dan Tarlock. 2008. Water War in the Klamath Basin. Island Press.

Dudek. 2024. Draft Drought Contingency Plan for the Pechanga Indian Reservation.

Earle, David. 2005. The Mojave River and the Central Mojave Desert: Native Settlement, Travel, and Exchange in the Eighteenth and Nineteenth Centuries. Journal of California and Great Basin Anthropology, Vol. 25, No. 1, pp. 1-38.

Eastern Municipal Water District. 2025. History.

Ferguson, Kirsten. 2021. Returning Ancestral Lands. Land Trust Alliance.

Fixico, Donald. 1990. Termination and Relocation: Federal Indian Policy, 1945-1960. University of New Mexico Press.

Fleck, John. 2016. Water is Worth Fighting Over and Other Myths About the West. Island Press.

Frank, Gelya, and Carole Goldberg. 2010. Defying the Odds: The Tule River Tribe's Struggle for Sovereignty in Three Centuries. Yale University Press.

Francis-Floyd, Ruth, Roy Yanong, and Deborah Pouder. 2016. Ichthyophthirius multifiliis (White Spot) Infections in Fish. University of Florida, Institute of Food and Agricultural Sciences.

Frausto, Elizabeth. 2024. "Still Here": The Enduring History of La Jolla's Indigenous.

Frost, Garrison. 2024. Prairie Creek Restoration Revives Salmon Habitat. Save the Redwoods League.

Fort Mojave Indian Tribe. 2026a. The People by the River.

Fort Mojave Indian Tribe. 2026b. Agriculture, Land, and Water Resources.

Fort Mojave Indian Tribe. n.d. Beginnings: People Who Live Along the Water. National Park Service.

Fort Yuma Quechan Indian Tribe. 2025. About Us.

Fort Yuma Quechan Indian Tribe. n.d. Kw'tsan National Monument: Tribal History.

Fuller, Thomas. 2021. *He Unleashed a California Massacre. Should This School Be Named for Him?* New York Times, Oct. 27, 2021.

Gallacher, Daniel. 2014. Establishment of the Agua Caliente Indian Reservation in Southern California, 1848-1900. Historical Research Associates.

Garone, Philip. 2011. The Fall and Rise of the Wetlands of California's Great Central Valley. University of California Press.

Garrison, Jessica. 2025. *Elk are Again Roaming on Lands that California has Returned to the Tule River Indian Tribe.* Los Angeles Times, Oct. 29, 2025.

Gates, Paul. 1968. History of Public Land Law Development. Public Land Law Review Commission.

Golla, Victor. 2011. California Indian Languages. University of California Press.

Grantham, Ted, Jeffrey Mount, Eric Stein, and Sarah Yarnell. 2020. Making the Most of Water for the Environment: A Functional Flows Approach for California's Rivers. Public Policy Institute of California.

Gray, Brian, and Jeffrey Mount. California's Wild and Scenic Rivers Act Hampers Shasta Reservoir Project. Public Policy Institute of California Blog, Jan. 6, 2020.

Greenson, Thadeus. 2023. *"A Great Day:" President Signs Karuk Land Back Bill into Law.* North Coast Journal of Politics, People and Art, Jan. 6, 2023.

Grenier, Letitia, and Sarah Bardeen. 2024. The Colorado River's Hydrology is Changing. Can We Adapt? (interview with J.B. Hamby and Bill Hasencamp). Public Policy Institute of California Blog, March 4, 2024.

Griffin, Caroline 2021. *Tolowa Dee-ni' Seek Return of Reservation Ranch. EcoNews.* April 30. 2021.

Gunther, Erna. 1928. A Further Analysis of the First Salmon Ceremony. University of Washington Publications in Anthropology. Vol 2, No. 5, pp. 129-73.

Hager, Alex. 2025. Trump Funding Freeze Includes Payments to Keep the Colorado River Flowing. National Public Radio, Feb. 25, 2025.

Haggerty, Noah. 2026. *California Pledges to Open 7% of its Land and Waters to Indigenous Tribes: A Step Toward Healing a 175-Year-Old Broken Promise.* Los Angeles Times, March 17, 2026.

Hamburger, Tom. 2003. *Oregon Water Saga Illuminates Rove's Methods with Agencies.* Wall Street Journal, July 30, 2003.

Hardy, Thomas, R. Craig Addley, and Ekaterina Saraeva. 2006. Evaluation of Flow Needs in the Klamath River Phase II: Final Report. Institute for Natural Systems Engineering, Utah Water Research Laboratory, Utah State University.

Heizer, Robert, ed. 1972. The Eighteen Unratified Treaties of 1851-1852 Between the California Indians and the United States Government. University of California, Berkeley, Department of Anthropology.

Heizer, Robert, ed. 1978. Handbook of North American Indians, Vol. 8. Smithsonian Institute.

Heizer, Robert, and Albert Elsasser. 1980. The Natural World of the California Indians. University of California Press.

Helvarg, David. 2020. *Island of Resilience: The Wiyot Reclaim Their Land and Culture from a Dark Past.* Smithsonian National Museum of the American Indian Magazine, Vol. 21, No. 1.

Henry, Lois. 2025a. Kern River Valley Tribe Excluded from River Rights. SJV Water (Video).

Henry, Lois. 2025b. Kern was "River of Life" for Yokuts Tribes. SJV Water (Video).

Holliday, J.S. 1981. The World Rushed In: The California Gold Rush Experience. Simon and Shuster.

Hoopa Valley Tribe. 1995. Pollutant Discharge Ordinance. Hoopa Valley Tribal Codes, Chapter 37.

Hoopa Valley Tribe. 1999. Conservation/Trespass Ordinance. Hoopa Valley Tribal Codes, Chapter 15.

Hoopa Valley Tribe 2016. Hoopa Tribal Fishing Ordinance. Hoopa Valley Tribal Codes, Chapter 16.

Hoopa Valley Tribe. 2020. Water Quality Control Plan for the Hoopa Valley Indian Reservation.

Hoopa Valley Tribe. 2025. Press Release: Tribes Celebrate Historic Trinity River Water Agreement. Maven's Notebook, April 3, 2025.

Hornbeck, David. 2017. 1784-1846: Spanish Land Concessions and Mexican Land Grants in Alta California. Digital Commons @ CSUMB, California State University, Monterey Bay.

Hundley, Norris, Jr. 2001. The Great Thirst: Californians and Water, A History. University of California Press.

Indian Land Tenure Foundation. n.d. Land Tenure History.

Ingram, Elizabeth. 2023. New Water Conservation Agreements in California to Protect Colorado River System. Renewable Energy World, Factor This, Dec. 15, 2023.

Inter-Tribal Council of Arizona. 2025. Fort Mojave Indian Tribe.

Isenberg, Andrew. 2005. Mining California: An Ecological History. Hill and Wang.

Jackson, Helen Hunt. 1892. A Century of Dishonor. University Press: John Wilson & Son.

Jackson, Robert, and Edward Castillo. 1995. Indians, Franciscans, and Spanish Colonization: The Impact of the Mission System on California Indians. University of New Mexico Press.

James, Ian. 2025. *Arrowhead Bottled Water Company Wins One of Three Pending Court Cases.* Los Angeles Times, May 8, 2025.

James, Ian. 2026. *California, Arizona and Nevada Press Trump Administration to Rethink Colorado River Water Cuts.* Los Angeles Times, March 4, 2026.

Johnston-Dodds, Kimberly. 2002. Early California Laws and Policies Related to California Indians. California State Library.

Joyce, Samuel. 2024. *Tribal Water Sovereignty: Authorizing Indian Water Marketing in the Colorado Basin.* Stanford Law & Policy Review, Vol. 36, pp. 161-77.

Kahrl, William. 1982. Water and Power. University of California Press.

Karuk Tribe. 2026. Land Management: History.

Kelly, Amy, and Jesse Richardson, eds. 2026. Waters and Wate Rights, Chapter 37. LexisNexis/Matthew Bender.

Kelly, Robert. 1989. Battling the Inland Sea. University of California Press.

King, Veronica. 2025. Klamath River Fund Grants $1.2 Million to Support Klamath Basin Restoration. ABC 7, KRCR, May 8, 2025.

Klamath River Fund. 2025a. America's Greatest Watershed Restoration Project Hangs in the Balance.

Klamath River Fund. 2025b. New Fund Supports Next Generation of Klamath Communities.

Klamath River Renewal Corporation. 2025a. Benefits of Klamath River Renewal.

Klamath River Renewal Corporation. 2025b. Board of Directors.

Klamath River Renewal Corporation. 2025c. Restoration (2024-2028).

Klamath Tribes. 2025. Our History.

Klamath Tribal Water Quality Consortium. 2019. Home.

Lahontan Regional Water Quality Control Board. 2024. Staff Report/Substitute Environmental Document for Amendments to the Water Quality Control Plan for the Lahontan Region Tribal Beneficial Use Designations for the Mono Basin (Draft).

Lake Hemet Municipal Water District. 2025. History.

Lamar, Howard, ed. 1998. The New Encyclopedia of the American West. Yale University Press.

La Jolla Band of Luiseño Indians. n.d. About La Jolla Indian Reservation.

Lawton, Harry, Philip Wilke, Mary DeDecker, and William Mason. 1976. *Agriculture Among the Paiute of Owens Valley.* Journal of California Anthropology, Vo. 3, No. 1, pp. 13-50.

Leshy, John. 1993. Fishing Rights of the Yurok and Hoopa Valley Tribes. Memorandum from the Solicitor of the Interior to the Secretary of the Interior (M-36979).

Leshy, John. 2021. Our Common Ground: A History of America's Public Lands. Yale University Press.

Leshy, John. 2022. Public Lands and Native Americans: A Guide to Current Issues. Public Land & Resources Law Review. Vol. 47, No. 1, pp. 1-33 (2022).

Leslie, Jacques. 2025a. A Win for Farmers and Tribes Brings New Hope to the Klamath. Yale 360, Yale School of the Environment.

Leslie, Jacques. 2025b. DOGE Quashes a Klamath River Basin Comeback. Seattle Times, April 16, 2025.

Littleworth, Arthur, and Eric Garner. 2019. California Water, 3rd ed., Solano Press.

Luna, Taryn. 2019. *Newsom Apologizes for California's History of Violence Against Native Americans.* Los Angeles Times, June 18, 2019.

Madley, Benjamin. 2016. An American Genocide: The United States and the California Indian Catastrophe, 1846-1873. Yale University Press.

Margolin, Malcom. 1978. The Ohlone Way: Indian Life in the San Francisco-Monterey Bay Area. Heyday Books.

Martin, Nicole. 2024. Timbisha Shoshone Demonstration. National Park Service.

Maven's Notebook. 2019. Tribal Groundwater Rights and SGMA: A New Underlying Tension? Maven's Notebook, Best of the Notebook, May 15, 2019.

Maven's Notebook. 2026. Bay Delta Plan: Delta Advocates Speak Out Against Bay Delta Plan Update and the Healthy Rivers and Landscapes Program. Maven's Notebook Daily Digest, Feb. 4, 2026.

McShane, Catherine. 1969. The Estudillo Family. San Diego Historical Society Quarterly. Vol. 15, No. 1.

Metropolitan Water District of Southern California. 2003. Agreement Relating to Supplemental Water Among the Metropolitan Water District of Southern California, the San Luis Rey Settlement Parties, and the United States.

Metropolitan Water District of Southern California. 2021. Seasonal Land Fallowing: A Partnership Benefitting Agriculture and Cities.

Metropolitan Water District of Southern California. 2022. Securing Colorado River Supplies: An Urban-Agriculture Partnership in the Palo Verde Valley.

Metropolitan Water District of Southern California. 2023a. Securing Colorado River Water Supplies: An Urban-Agricultural Partnership with the Quechan Tribe.

Metropolitan Water District of Southern California. 2023b. Amendment to an Agreement for the Implementation of a Pilot Seasonal Land Fallowing Program.

Metropolitan Water District of Southern California. 2024. Metropolitan Facts.

McEwen, Lisa. 2025. *Return of More than 17,000 Acres to Tule River Indian Tribe Begins "Healing."* SJV Water, Oct. 30, 2025.

Miller, Mark. 2000. *The Timbisha Shoshone and the National Park Idea: Building Toward Accommodation and Acknowledgment at Death Valley National Park, 1933-2000.* Journal of the Southwest, Vol. 50, No. 4, pp. 415-45.

Miller, Mark. 2006. Forgotten Tribes: Unrecognized Indians and the Federal Acknowledgment Process. University of Nebraska Press.

Modoc Nation. 2026. History.

Mono Lake Committee. 2026. Kootzaduka'a People.

Mono Lake Kootzaduka'a Tribe. 2025. Press Release: Mono Lake Kootzaduka'a Tribe Acquires Ancestral Land with Support from Eastern Sierra Land Trust and Sierra Nevada Conservancy.

Morongo Band of Mission Indians. 2026a. Miyaxwa.

Morongo Band of Mission Indians. 2026b. Fact Sheet.

Mount, Jeffrey. 1995. California Rivers and Streams. University of California Press.

Mount, Jeffrey, Brian Gray, Caitrin Chappelle, Greg Gartrell, Ted Grantham, Peter Moyle, Nathaniel Seavy, Leon Szeptycki, and Barton "Buzz" Thompson. 2017. Managing California's Freshwater Ecosystems Lessons from the 2012–16 Drought, Technical Appendix: Eight Case Studies of Environmental Water Management During the 2012–16 Drought. Public Policy Institute of California.

Mount, Jeffrey, Ellen Hanak, and Caitlin Peterson. 2023. Water Use in California. Public Policy Institute of California.

Moyle, Peter. 2002. Inland Fishes of California (revised edition). University of California Press.

Mueller, Gordon, and Paul Marsh. 2002. Lost, A Desert River and Its Native Fishes: A Historical Perspective of the Lower Colorado River. U.S. Geological Survey, Government Printing Office.

Music, Lisa. 2025. *Eel River Deal Trades Dam Removal for Monitored Diversion and Restoration Funds.* Redheaded Blackbelt, July 26, 2025.

National Archives. 2022. Treaty of Guadalupe Hildago (1848).

National Marine Fisheries Service. 2024. Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for Klamath Project Operations from October 1, 2024 through September 30, 2029.

National Marine Fisheries Service. 2025. NOAA Fisheries Restoration in the Klamath Basin.

National Park Service. n.d. Timbisha Shoshone Tribe of Death Valley.

National Park Service. 2023. Mojave Tribe.

Native American Rights Fund. 2017. Agua Caliente Water Rights. NARF Legal Review, Vol. 42, No. 1.

Native American Rights Fund. 2025. Individual Indian Money Accounts: Cobel v. Salazar.

Native Land Information System. 2019. Native Land Area Data from the U.S. Bureau of Indian Affairs.

National Research Council. 1992. Water Transfers in the West. National Academy of Sciences.

National Research Council. 2004. Endangered and Threatened Fishes in the Klamath River Basin. National Academy of Sciences.

Natural Resources Consulting Engineers. 2025. Cahuilla Indian Reservation.

NDN Collective. 2025. LandBack.

Neale-Sacks. 2022. *A Process of Survival.* Bay Nature, March 15, 2022.

Newsom, Gavin. 2019. Executive Order N-15-19.

Newton, Nell, and Kevin Washburn, eds. 2024. Cohen's Handbook of Federal Indian Law. LexisNexis.

Nieman, Greg. 2025. *Coachella Valley History: Early Settlers Struggled to Bring an Adequate Water Supply into the Palm Springs Area.* Coachella Valley Independent, Jan. 10, 2025.

Nieto, Lester. 2024. Testimony of Vice Chairman Lester Shine Nieto, Tule River Indian Tribe of California, to the Subcommittee on Water, Wildlife, and Fisheries, U.S. House of Representatives, in Support of H.R. 8920.

NOAA Fisheries. 2022. Glossary: Endangered Species Act.

NOAA Fisheries. 2023. Klamath River Basin.

NOAA Fisheries. 2024a. The Original Salmon Stewards.

NOAA Fisheries. 2024b. Hydroelectric Management and Dam Removal Activities: PacifiCorp Klamath Hydroelectric Project.

NOAA Fisheries. 2024c. World's Biggest Dam Removal Project to Open 420 Miles of Salmon Habitat this Fall.

North Coast Resource Partnership. 2025. Round Valley Reservation and Off-Reservation Trust Lands.

Nuttall, Arewen. 2019. *Section 14: The Agua Caliente Tribe's Struggle for Sovereignty in Palm Springs, California.* American Indian Magazine, Vol. 20, No. 2.

Olade, Mark, Umar Farooq, and Anna Smith. 2023. *The Colorado River Flooded Chemehuevi Land. Decades Later, the Tribe Still Struggles to Take Its Share of Water.* ProPublica, July 5, 2023.

Oregon Historical Society. 2025. Oregon History Project: Klamath Indian Reservation.

Oregon History Project. 2025. Klamath Indian Reservation.

Ostler, Jeffrey. 2015. Genocide and American Indian History. Oxford Research Encyclopedias; American History.

Owens Valley Groundwater Authority. 2021. Owens Valley Groundwater Basin Final Groundwater Sustainability Plan.

Owens Valley Indian Water Commission. 2018. Owens Valley.

Owens Valley Indian Water Commission. 2025. Three Creeks Land and Water Return Back to Indigenous Care.

Pala Band of Mission Indians. 2026. History.

Partnership with Native Americans. 2024a. Arizona: Colorado River.

Partnership with Native Americans. 2024b. Arizona: Yuma, Cocopah, Maricopa.

Partnership with Native Americans. 2024c. California: Chemehuevi.

Partnership with Native Americans. 2024d. California: Mojave.

Partnership with Native Americans. 2024e. California: Quechan.

Paullin, Charles O., and John K. Wright. 1930. Indian Reservations, 1900, Plate 36. Atlas of the Historical Geography of the United States. Carnegie Institution of Washington and the American Geographical Society of New York.

Pauma Band of Luiseño Indians. 2024. Pauma Tribe: Deep Roots in the Pauma Valley.

Pechanga Band of Luiseño Mission Indians, et al. 2017. Pechanga Band of Luiseño Mission Indians Water Rights Settlement Agreement.

Pechanga Band of Indians 2026a. History.

Pechanga Band of Indians 2026b. The Eviction of the Temecula Indians.

Pechanga Water Systems. 2012. Bylaws.

Peyron, Neil. 2022. Testimony of Chairman Neil Peyron, Tule River Indian Tribe of California, Before the Senate Committee on Indian Affairs, United States Senate, in Support of S. 4870, Tule River Tribe Reserved Water Rights Settlement Act of 2022.

Pilling, Arnold. 1978. Yurok. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Pisani, Donald. 1984. From the Family Farm to Agribusiness: The Irrigation Crusade in California and the West, 1850-1931. University of California Press.

Pit River Tribe. n.d. Tribal History.

Prado, Yesica. 2022. *California Indian Tribes Denied Resources for Decades as Federal Acknowledgement Lags.* San Francisco Public Press, Aug. 11, 2022.

Preston, William. 1981. Vanishing Landscapes: Land and Life in the Tulare Lake Basin. University of California Press.

Prucha, Paul. 1984. The Great Father: The United States Government and the American Indians. University of Nebraska Press. (2 Vols.)

Pulikla Tribe. 2025. Pulikla Tribe of Yurok People and the Trinidad Rancheria Address Claims Regarding Marine Stewardship Area. Redheaded Blackbelt, April 27, 2025.

Ramona Band of Cahuilla Indians. n.d. History.

Rancho California Water District. 2016. Urban Water Management Plan.

Red Owl, Teri. 2019. Payahuunadü: Land of the Flowing Water.

Reed, Gerald, and Sarah Berry. 2025. Culture Summary: Yokuts. Yale University, eHRAF World Cultures.

Rhadigan, Ryan. 2018. Surveying the Reservoir: Public Records and the Archival Logics of the Oroville Dam. U.C. Berkeley, ISSI Graduate Fellows Working Paper Series 2017-18: 83.

Righter, Robert. 2005. The Battle Over Hetch Hetchy. Oxford University Press.

Rincon Band of Luiseño Indians. n.d. History.

Robertson, Lindsay. 2005. Conquest By Law: How the Discovery of America Dispossessed Indigenous Peoples of Their Lands. Oxford University Press.

Robinson, W.W. 1948. Land in California. University of California Press.

Rockwell, Thomas, Aron Meltzner, Erik Haaker, and Danielle Madugo. 2022. The Late Holocene History of Lake Cahuilla: Two Thousand Years of Repeated Fillings within the Salton Trough, Imperial Valley, California. Quaternary Science Reviews, Vol. 282, April 15, 2022, 107456.

Rode, Erin. 2026. California Tribe Takes Back Over 600 Acres Near Palm Springs in Historic Land Return. San Francisco Chronicle, Mar. 12, 2026.

Round Valley Indian Tribes. 2025. Motion to Intervene and Comments by the Round Valley Indian Tribes. In re Pacific Gas and Electric Company, No. 77-323, Federal Energy Regulatory Commission.

Round Valley Indian Tribes. n.d. About Us.

Sahagún, Louis. 2021. *A Century-Old Fight for Tribal Recognition Simmers Over the Eastern Sierra Nevada's Mono Lake.* Los Angeles Times, Feb. 20, 2021.

San Diego County Water Authority. n.d. Quantification Settlement Agreement for the Colorado River.

San Diego Integrated Regional Water Management. 2019. Integrated Regional Water Management Plan: Tribal Nations of San Diego County.

San Diego State University. 2015. California Indians and Their Reservations.

San Luis Rey Indian Water Authority. 2003a. Agreement Relating to Supplemental Water Among the Metropolitan Water District of Southern California, the San Luis Rey Settlement Parties, and the United States.

San Luis Rey Indian Water Authority. 2003b. Agreement for the Conveyance of Water Among the San Diego County Water Authority, the San Luis Rey Settlement Parties, and the United States.

San Luis Rey Indian Water Authority. 2022a. The Settlement Act.

San Luis Rey Indian Water Authority. 2022b. Economic Development.

San Luis Rey Indian Water Authority. 2022c. Comments on draft Groundwater Sustainability Plan for the Upper San Luis Rey Valley Groundwater Basin.

San Luis Rey Indian Water Authority. 2024. Liquid Gold: The Story of the San Luis Rey River Indian Water Rights Settlement.

San Luis Rey Indian Water Authority. n.d. The History of the San Luis Rey Indian Water Authority.

Sanchez, Leslie, Eric Edwards, and Bryan Leonard. 2022. Beyond "Paper" Water: The Complexities of Fully Leveraging Tribal Water Rights. Federal Reserve Bank of Minneapolis.

Sanchez, Leslie, and Eric Edwards. 2025. Bargaining for Tribal Water in California. ARE Update, Vol. 28, No. 4, pp. 12–15.

San Pasqual Band of Mission Indians. 2018. History.

Schneider, Charlie. 2025. Six Things to Know about the Potter Valley Project and Eel River Restoration. CalTrout News, May 29, 2025.

SCS Engineers. 2024. Ramona Band of Cahuilla: 2023 Priority Climate Action Plan.

Sencan, Gokce, and Brian Gray. 2025. The Colorado River. Public Policy Institute of California.

Steward, Julian. 1933. *Ethnography of the Owens Valley Paiute.* University of California Publications in American Archaeology and Ethnology. Vol. 33, No. 3, pp. 233-350.

Shasta Indian Nation. 2024. Press Release: 2,800 Acres of Ancestral Homelands returned to the Shasta Indian Nation.

Shilling, Fraser, April Negrette, Lori Biondini, and Susana Cardenas. 2014. California Tribes Fish-Use: Final Report to the State Water Resources Control Board and the U.S. Environmental Protection Agency. University of California, Davis.

Shipek, Florence. 1978. History of the California Mission Indians. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Silversmith, Shondiin. 2024. "We Are Tied to Our Water": Colorado River Indian Tribes Sign Historic Water Rights Settlement, Arizona Mirror, May 7, 2024.

Simpson, John. 2005. Dam! Water, Power, Politics, and Preservation in Hetch Hetchy and Yosemite National Park. Pantheon Books.

Sloan, Kathleen. 2011. Yurok and the Klamath River. U.S. Department of the Interior, Bureau of Indian Affairs.

Smith, Hayley, and Kristi Sturgill. 2021. *After 250 Years, Esselen Tribe Regains a Piece of its Ancestral Homeland.* Los Angeles Times, July 31, 2021.

Soboba Band of Luiseño Indians. n.d. History.

Soboba Band of Luiseño Indians et al. 2006. Soboba Band of Luiseño Indians Water Settlement Agreement. Native American Water Rights Settlement Project, University of New Mexico Digital Repository.

Soboba Band of Luiseño Indians. 2025. Soboba Economic Development Corporation.

Southern California Tribal Chairman's Association. 2026. Cahuilla Band of Mission Indians.

Spier, Robert. 1978. Foothill Yokuts. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Stanford University Environmental Law Clinic. 2022. Title VI Complaint and Petition for Rulemaking for Promulgation of Bay-Delta Water Quality Standards. U.S. Environmental Protection Agency.

Stene, Eric. 1994. Klamath Project.

Stene, Eric. 1996. Trinity Division, Central Valley Project.

Stern, Michelle, Lorraine Flint, Alan L. Flint, and Allen Christensen. 2021. A Basin-Scale Approach to Estimating Recharge in the Desert: Anza-Cahuilla Groundwater Basin, California. Journal of the American Water Resources Association, Vol. 57, Issue 6, pp. 990-1003.

Stetson Engineers. 2021. Annual Groundwater Conditions Report for the Agua Caliente Indian Reservation, Water Year 2020.

Stetson Engineers. 2025. Summary of the Annual Groundwater Conditions Report for the Agua Caliente Indian Reservation, Water Year 2024.

Stringfellow, Kim. 2016. How the Timbisha Shoshone Got Their Land Back. The Mojave Project.

Sweeny, Tara. 2019. Letter from the Assistant Secretary of the Interior for Indian Affairs to the Chair of the Agua Caliente Band of Cahuilla Indians.

Ten Tribes Partnership. 2025. Keepers of the River.

The White House. 1927. Executive Order 4765: Extension of Trust Period for Mission Indian Allotments in California. Digital Resources & Discovery Services, Edmon Low Library, Oklahoma State University.

The White House. 2025. Guidance Regarding Section 7 of the Executive Order Unleashing American Energy.

Thorton, Russel. 1987. American Indian Holocaust and Survival: A Population History Since 1492. University of Oklahoma Press.

Timbisha Shoshone Tribe. 2025. Economic Development.

TODD Groundwater, Indio Subbasin Annual Report for Water Year 2022-2023.

Townsend, Camilla. 2019. Fifth Sun: A New History of the Aztecs. Oxford University Press.

Tribal Treaties Database. n.d. Treaty with the Hupa, South Fork, Redwood, and Grouse Creek Indians, 1864.

Trinity River Restoration Program. 2025a. Lake Conditions.

Trinity River Restoration Program. 2025b. Flow Volume Summary.

Trinity River Restoration Program. n.d. Record of Decision.

Tule River Tribal Council. n.d. Tule River Water Rights Settlement Timeline of Historic Background and Efforts by the Tribe to Achieve a Settlement of its Water Rights.

Tule River Tribal Council. 2007. Tule River Tribe Reserved Water Rights Settlement Agreement Between the Tule River Indian Tribe, the Tule River Association, and the South Tule Independent Ditch Company.

Tule River Tribal Council. 2019. Tule River Water Rights.

Tule River Tribal Council. 2025. Home.

Tule River Tribe. 1974. Constitution and Bylaws of the Tule River Indian Tribe of California. Native American Rights Fund, National Indian Law Library.

Two Basin Partnership. 2025. Memorandum of Understanding to Advance a Water Diversion Agreement for a New Eel-Russian Facility.

Ukiah Valley Basin Groundwater Sustainability Agency. 2026. Member Agencies.

Ulrich, Roberta. 2010. American Indian Nations from Termination to Restoration, 1953-2006. University of Nebraska Press.

University of Arizona, Native American Advancement Initiatives & Research. 2025a. Fort Mojave Indian Tribe Community Profile.

University of Arizona, Native American Advancement, Initiatives, and Research. 2025b. Fort Yuma-Quechan Tribe Community Profile.

University of Oregon, Center for Advanced Technology in Education. 2022. Diary of Juan Bautista de Anza: Colonizing Expedition, 1775-1776, March 29, 1776.

University of Washington, Gallagher Law Library. 2023. Sovereign-to-Sovereign Cooperative Agreements.

US Bureau of Indian Affairs. 2026. Office of Federal Acknowledgement.

US Bureau of Land Management. 2023. BLM approves Whitewater River Groundwater Replenishment Facility Project.

US Bureau of Reclamation. 2017. Lower Colorado River Region Facilities.

US Bureau of Reclamation. 2021. Pilot System Conservation Program.

US Bureau of Reclamation. 2023a. System Conservation Implementation Agreement Among the United States Bureau of Reclamation, the Quechan Indian Tribe of the Fort Yuma Indian Reservation, and the Metropolitan Water District of Southern California to Implement the Lower Colorado Conservation Program.

US Bureau of Reclamation 2023b. Colorado River Accounting and Water Use Report: Arizona, California, and Nevada: Calendar Year 2022, Table 18.

US Bureau of Reclamation 2023c. Funding Opportunity for Voluntary Participation in the Lower Colorado Conservation and Efficiency Program.

US Bureau of Reclamation. 2024a. Colorado River Accounting and Water Use Report: Arizona, California, and Nevada: Calendar Year 2023, Table 18.

US Bureau of Reclamation. 2024b. Implementation of Klamath Project Operating Procedures 2024-2029: Draft Environmental Assessment.

US Bureau of Reclamation. 2024c. Final Biological Assessment: The Effects of the Proposed Action to Operate the Klamath Project from October 1, 2024, through September 30, 2029, on Federally Listed Threatened and Endangered Species.

US Bureau of Reclamation. 2025a. Lower Colorado River Water Accounting.

US Bureau of Reclamation. 2025b. Reclamation Awards Colorado River Indian Tribes $1.1M to Assess Existing Infrastructure and Potential Modernization Opportunities.

US Bureau of Reclamation. 2025c. Colorado River Accounting and Water Use Report: Arizona, California, and Nevada: Calendar Year 2024, Table 18.

US Bureau of Reclamation. 2025d. Alternatives Report: Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead.

US Bureau of Reclamation. 2026a. Lower Colorado River Basin System Conservation and Efficiency Program.

US Bureau of Reclamation. 2026b. Post-2026 Operational Guidelines and Strategies for Lake Powell and Lake Mead: Draft Environmental Impact Statement.

US Bureau of Reclamation. n.d. Yuma Project.

US Bureau of Reclamation, California Department of Water Resources, and Oregon Water Resources Department. 2016. Klamath River Basin Study. Technical Memorandum 86-68210-2016-06.

US Census Bureau. 2023. Detailed Data for Hundreds of American Indian and Alaska Native Tribes.

US Congress. 1850. An Act to Enable the State of Arkansas and other States to Reclaim the "Swamp Lands" Within their Limits. Chapter 84; Statutes at Large, Vol. 9, p. 519.

US Congress. 1851. An Act to Ascertain and Settle the Private Land Claims in the State of California. Public Law No. 31-41, Chapter 16; Statutes at Large, Vol. 9, pp. 631, 634.

US Congress. 1853a. An Act to Provide for the Survey of the Public Lands in California, the Granting of Preemption Rights Therein, and for Other Purposes. Public Law No. 32-145, Chapter 6; Statutes at Large, Vol. 10, p. 244.

US Congress. 1853b. Appropriations Act for the Current and Contingent Expenses of the Indian Department. Pub. L. No. 32-104, Chapter 1; Statutes at Large, Vol. 10, pp. 226, 238.

US Congress. 1864. An Act to Provide for the Better Organization of Indian Affairs in California. Public Law No. 38-48, Chapter 48; Statutes at Large, Vol. 13, p. 39.

US Congress. 1887. An Act to Provide for the Allotment of Lands in Severalty to Indians on the Various Reservations, and to Extend the Protection of the Laws of the United States and the Territories Over the Indians, and for Other Purposes. Public Law No. 49-43, Chapter 119, Statutes at Large, Vol. 24, p. 288.

US Congress. 1886. Lands Granted to the Southern Pacific Railroad Company. House Report No. 706. 49th Cong., 1st Sess.

US Congress. 1891. An Act for the Relief of the Mission Indians in the State of California. Public Law Chapter 65, Statutes at Large, Vol. 26, p. 712.

US Congress. 1892. An Act to Provide for the Disposition and Sale of Lands Known as the Klamath River Reservation. Chapter 120, Statutes at Large, Vol. 27, p. 52.

US Congress. 1934. Indian Reorganization Act. Public Law No. 73-387, Chapter 576, Statutes at Large, Vol. 48, p. 984.

US Congress 1937. An Act to Authorize the Secretary of the Interior to Exchange Certain Lands and Water Rights in Inyo and Mono Counties, California, with the City of Los Angeles, and for Other Purposes. Pub. L. No. 75-37, Chapter 114, Statutes at Large, Vol. 50. p. 70.

US Congress. 1954. An Act to Provide for the Termination of Federal Supervision Over the Property of the Klamath Tribe of Indians Located in the State of Oregon and the Individual Members Thereof, and for Other Purposes. Public Law No. 83-587, Chapter 732, Statutes at Large, Vol. 68, p. 718.

US Congress. 1955. An Act to Authorize the Secretary of the Interior to Construct, Operate, and Maintain the Trinity River Division, Central Valley Project, California, under the Federal Reclamation Laws. Public Law No. 84-386, Statutes at Large, Vol. 69, p. 719.

US Congress. 1958. An Act to Provide for the Distribution of the Land and Assets of Certain Indian Rancherias and Reservations in California, and for Other Purposes. Public Law No. 85-671; Statutes at Large, Vol. 72, p. 619.

US Congress 1959. An Act to Authorize Longer Term Leases on the Agua Caliente (Palm Springs) Reservation. Public Law No. 86-326, Statute at Larges, Vol. 73, p. 597.

US Congress. 1964. An Act to Amend the Act Entitled "An Act to Provide for the Distribution of the Land and Assets of Certain Indian Rancherias and Reservations in California, and for Other Purposes." Public Law No. 88-419; Statutes at Large, Vol. 78, p. 390.

US Congress. 1988a. San Luis Rey River Indian Water Rights Settlement Act. Public Law No. 100-675, Statutes at Large, Vol. 102, p. 4000.

US Congress. 1988b. An Act to Partition Certain Reservation Lands Between the Hoopa Valley Tribe and the Yurok Indians, to Clarify the Use of Tribal Timber Proceeds, and for Other Purposes. Public Law No. 102-580, Statutes at Large, Vol. 102, p. 2924.

US Congress. 1992. Central Valley Project Improvement Act. Public Law No. 102-575, §§ 3401-3412, Statutes at Large, Vol. 106, pp. 4706-31.

US Congress. 1994. California Desert Protection Act. Public Law No. 103-433, § 706(b), Statutes at Large Vol. 108, pp. 4471, 4498.

US Congress. 2000. Timbisha Shoshone Homeland Act. Public Law No. 106-423, Statutes at Large, Vol. 114, p. 1875.

US Congress. 2003. Katimiîn and Ameekyáaraam Sacred Lands Act. Public Law No. 117-353, Statutes at Large, Vol. 136, p. 6268.

US Congress. 2008. Soboba Band of Luiseño Indians Water Rights Settlement Act. Public Law No. 110-297, Statutes at Large, Vol. 122, p. 2975.

US Congress. 2016a. Water Infrastructure Improvements for the Nation Act: San Luis Rey Settlement Agreement Implementation. Public Law No. 114-322, § 3605, Statutes at Large, Vol. 130, p. 1793.

US Congress. 2016b. Water Infrastructure Improvements for the Nation Act: Pechanga Band of Luiseño Mission Indians Water Rights Settlement Act. Public Law No. 114-322, §§ 3401-3413, Statutes at Large, Vol. 130, p. 1775.

US Congress. 2023. Colorado River Indian Tribes Water Resiliency Act. Public Law No. 117-343; Statutes at Large, Vol. 136, p. 6186.

US Congress. 2025. Klamath Basin Water Agreement Support Act. Public Law 118–246; Statutes at Large, Vol. 138, p. 2933.

US Court of Appeals. 1956. *California v. United States,* 235 F.2d 647 (9th Cir. 1956).

US Court of Appeals. 1981a. *Colville Confederated Tribes v. Walton,* 647 F.2d 42 (9th Cir. 1981).

US Court of Appeals. 1981b. *Blake v. Arnett,* 663 F.2d 906 (9th Cir. 1981).

US Court of Appeals. 1983. *United States v. Adair,* 723 F.2d 1394 (9th Cir. 1983).

US Court of Appeals. 1986. *United States v. Eberhardt,* 789 F.2d 1354 (9th Cir. 1986).

US Court of Appeals. 1995. *Parravano v. Babbitt,* 70 F.3d 539 (9th Cir. 1995).

US Court of Appeals. 1999. *Klamath Water Users Association v. Patterson,* 204 F.3d 1206 (9th Cir. 1999), *amended on denial of rehearing,* 203 F.3d 1175 (9th Cir. 2000).

US Court of Appeals. 2004. *Westlands Water District v. Department of the Interior,* 376 F.3d 853 (9th Cir. 2004).

US Court of Appeals. 2011. *Klamath Irrigation District v. United States,* 635 F.3d 503 (Fed. Cir. 2011).

US Court of Appeals. 2017a. *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water District,* 849 F.3d 1262 (9th Cir. 2017).

US Court of Appeals 2017b. *San Luis & Delta–Mendota Water Authority v. Haugrud,* 848 F.3d 1216 (9th Cir. 2017).

US Court of Appeals. 2019. *Baley v. United States,* 942 F.3d 1312 (Fed. Cir. 2019).

US Court of Appeals. 2022. *Klamath Irrigation District v. U.S. Bureau of Reclamation.* 48 F.4th 934 (9th Cir. 2022).

US Court of Federal Claims. 2017. *Baley v. United States,* 134 Fed. Cl. 619 (Ct. Cl. 2017)

US Department of Agriculture. 2025. Press Release: Secretary Rollins Intervenes to Protect Potter Valley's Water Supply.

US Department of Justice. 2025. Federal Appellees Reply in Support of Motion to Dismiss Appeals Due to Mootness, or Alternatively, to Remand to Enable Motion to Voluntarily Dismiss Cross-Complaint. *Yurok Tribe v. U.S. Bureau of Reclamation,* Nos. 23-15499 & 23-15521, U.S. Court of Appeals for the Ninth Circuit.

US Department of the Interior. 1974. Agreement of 1922 Between the United States of America Acting Through the Secretary of the Interior and the South Tule Independent Ditch Company.

US Department of the Interior. 2011. Salazar Announces Finalization of Soboba Tribal Water Rights Settlement, Triggering Release of $21 Million Benefiting Reservation and California's San Jacinto River Basin Communities.

US Department of the Interior. 2017a. Interior Executes Water Rights Settlement Agreement with Pechanga Band of Luiseño Mission Indians.

US Department of the Interior. 2017b. Tribal-State Compact Between the State of California and the Morongo Band of Mission Indians.

US Department of the Interior. 2020. Duties of Assessment Team Members.

US Department of the Interior. 2024a. Interior Department Reaches Landmark Agreement with Klamath Basin Tribes, Project Irrigators to Collaborate on Ecosystem Restoration and Water Reliability.

US Department of the Interior. 2024b. Memorandum of Understanding: Collaboration Mutual Support and Restoration Efforts in the Klamath Basin.

US Department of the Interior. 2025. Indian Affairs.

US Department of the Interior. 2026. Press Release: Interior Department Moves Forward on Guidelines for Colorado River Absent Full State Consensus. Maven, Feb. 14, 2026.

US Department of the Interior. n.d. Land Buy-Back Program for Tribal Nations.

US Department of the Interior, U.S. Bureau of Reclamation, and Ten Tribes Partnership. 2018. Colorado River Basin Ten Tribes Partnership Tribal Water Study.

US District Court 1962. *United States v. Fallbrook Public Utility District et al.* (S.D. Cal.), Civ. No. 3:51-CV-01247, Findings of Fact and Conclusions of Law: Interlocutory Judgment No. 41.

US District Court. 1966. *United States v. Fallbrook Public Utility District et al.* (S.D. Cal.), Civ. No. 3:51-CV-01247, Modified Final Judgment and Decree.

US District Court. 2015. *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water District et al*. (C.D. Cal.), No. EDCV-13-833-JGB, Order Granting in Part and Denying in Part Plaintiffs' and Defendants' Motions for Partial Summary Judgment.

US District Court. 2017. *United States v. Fallbrook Public Utility District et al.* (S.D. Cal.), Civ. No. 3:51-CV-01247, Order Denying Defendant Gregory Burnett's Motion for Relief from Stay.

US District Court. 2019. *Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water District et al.* (C.D. Cal.), No. EDCV 13-00883 JGB, 2019 WL 2610965.

US District Court. 2023a. *Hoopa Valley Tribe v. U.S. Bureau of Reclamation et al.* (E.D. Cal.), Case No. 1:20-cv-01814-JLT-EPG, Order Denying Motion for Preliminary Injunction.

US District Court 2023b. *Yurok Tribe v. U. S. Bureau of Reclamation,* 654 F. Supp. 3d 941 (N.D. Cal. 2023).

US Environmental Protection Agency. 2025a. California Tribal Lands Map.

US Environmental Protection Agency. 2025b. Federally Recognized Tribes in EPA's Pacific Southwest" California Area Tribes.

US Environmental Protection Agency. 2025c. Overview of Total Maximum Daily Loads (TMDLs).

US Environmental Protection Agency. 2025d. Tribes and Water Quality Standards.

US Environmental Protection Agency. 2025e. Water Quality Standards Tools for Tribes.

US Environmental Protection Agency. 2026. EPA Actions on Tribal Water Quality Standards and Contacts.

US Fish and Wildlife Service. 2003. Klamath River Fish Die-off, September 2002. Report No. AFWO-01-03.

US Fish and Wildlife Service 2020. Biological Opinion on the Effects of the Proposed Interim Klamath Project Operations Plan, Effective April 1, 2020, through September 30, 2022, on the Lost River Sucker and the Shortnose Sucker.

US Fish and Wildlife Service 2024. Klamath Basin Restoration: Bipartisan Infrastructure Law Projects.

US Fish and Wildlife Service 2025. Bipartisan Infrastructure Law, 2022-2025: Klamath Basin Project Awards.

US Geological Survey, California Water Science Center. 2020. Evaluation of Groundwater Resources of the Anza-Terwilliger Area, Anza, California.

US Government Accounting Office. 2006. Indian Issues: BLM's Program for Issuing Individual Indian Allotments on Public Lands Is No Longer Viable.

US House of Representatives. 2025a. Mono Lake Kootzaduka'a Tribe Recognition Act. H.R.5820, 119th Congress, 1st Session.

US House of Representatives. 2025b. Agua Caliente Band of Cahuilla Indians Water Rights Settlement Act. H.R. 5935, 119th Congress, 1st Session.

US Indian Claims Commission. 1976. *Soboba Band of Mission Indians v. United States.* 37 Ind. Cl. Comm. 326 (1976)

US Senate. 1852. Senate Debate on Indian Appropriation Bill. Congressional Globe, 32nd Congress, 1st Session, 2171, 2175.

US Senate. 2000. Providing to the Timbisha Shoshone Tribe a Permanent Land Base within its Aboriginal Homeland and for Other Purposes. Senate Report No. 106-327, 106th Congress, 2nd Session.

US Senate. 2025a. A Bill to Approve the Settlement of the Water Right Claims of the Tule River Tribe and for Other Purposes. Senate Bill 689, 119th Congress, 1st Session.

US Senate. 2025b. To Approve the Settlement of the Water Right Claims of the Tule River Tribe and for Other Purposes. Senate Report No. 119-22, 119th Congress, 1st Session.

US Supreme Court. 1901. *Barker v. Harvey,* 181 U.S. 481.

US Supreme Court. 1908. *Winters v. United States,* 207 U.S. 564.

US Supreme Court. 1960. *Arizona v. California,* Report of Special Master Simon H. Rifkind, pp. 254-88.

US Supreme Court. 1963. *Arizona v. California,* 373 U.S. 546.

US Supreme Court. 1964. *Arizona v. California,* 376 U.S. 340.

US Supreme Court. 1973. *Mattz v. Arnett,* 412 U.S. 481.

US Supreme Court. 1983a. *Arizona v. California.* 460 U.S. 605.

US Supreme Court. 1983b. *Arizona v. San Carlos Apache Tribe,* 463 U.S. 545.

US Supreme Court. 1984. *Escondido Water Co. v. La Jolla Indians,* 466 U.S. 765.

US Supreme Court. 2006a. *Arizona v. California,* 547 U.S. 150.

US Supreme Court 2006b. Settlement Agreement in Arizona v. California by and among the Quechan Indian Tribe of the Fort Yuma Indian Reservation, the United States, the Metropolitan Water District of Southern California, the Coachella Valley Water District and the State of California.

US Supreme Court 2023. *Arizona v. Navajo Nation,* 599 U.S. 555.

Walker, Alice. 2025. Tribal Interests in the Future of the Colorado River. Native American Rights Fund.

Wallace, William. 1978a. Southern Valley Yokut. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Wallace, William. 1978b. Hupa, Chilula, and Whilkut. Handbook of North American Indians, Robert Heizer, ed. Smithsonian Institution.

Walker River Paiute Tribe. 2026. History.

Washington Department of Fish and Wildlife. 2025. Treaty History with the Northwest Tribes.

Water and Tribes Initiative. 2021. Colorado River Basin. Universal Access to Clean Water for Tribes in the Colorado River Basin.

Weber, David. 1992. The Spanish Frontier in North America. Yale University Press.

Western Rivers Conservancy. 2025. Largest Ever Land Back-Conservation Deal in California Now Complete: Western Rivers Conservancy Conveys Final Acreage to Yurok Tribe in a 47,000-Acre Effort Critical to the Salmon, Wildlife and Forests of the Klamath River.

Williams, Robert, Jr. 1990. The American Indian in Western Legal Thought: The Discourses of Conquest. Oxford University Press.

Winnemem Wintu Tribe. n.d. Who We Are.

Wood, William. 2008. *The Trajectory of Indian Country in California: Rancherias, Villages, Pueblos, Missions, Ranchos, Reservations, Colonies, and Rancherias.* Tulsa Law Review, Vol. 44, No. 2, pp. 317-63.

World Population Review. 2025. Native American Reservations by State.

World Sustainable Hospitality Alliance. 2024. Water Stewardship.

Xia, Rosanna. 2021. *A River of Secrets: How the Battle Over Reservation Ranch Summoned a Violent Past.* Los Angeles Times, Dec. 20, 2021.

Yale Environment 360. Crisis on the Colorado. Yale School of the Environment.

Yolo Subbasin Groundwater Agency. 2026. Board Members.

Yoshiyama, Ronald, Frank Fisher, and Peter Moyle. 1998. *Historical Abundance and Decline of Chinook Salmon in the Central Valley Region of California.* North American Journal of Fisheries Management, Vol. 18, No. 3, pp. 487–521.

Yurok Tribe. 2004. Water Quality Control Plan for the Yurok Indian Reservation.

Yurok Tribe 2019. Resolution Establishing the Rights of the Klamath River. Yurok Tribal Council Resolution No. 19-40.

Yurok Tribe 2024a. Rights of the Heyhl-keek 'We-roy Ordinance.

Yurok Tribe 2024b. Yurok Tribal Code, Title 17: Fishing Rights. Yurok Tribal Code, Title 21, Chapter 21.60.

Yurok Tribe 2024c. Environmental Protection. Yurok Tribal Code, Title 21.

Yurok Tribe. 2026a. Our History.

Yurok Tribe. 2026b. Gold Rush in Yurok Country.

Yurok Tribe. 2026c. Religion.

Zerzan, Gregory. 2025. Klamath Updated Analysis of Endangered Species Act Obligations. Memorandum from the Acting Solicitor of the Interior to the Secretary of the Interior.

500 Nations. 2025. Eagle Mountain Casino.

PPIC

PUBLIC POLICY
INSTITUTE OF CALIFORNIA

The Public Policy Institute of California is dedicated to informing and improving public policy in California through independent, objective, nonpartisan research.

Public Policy Institute of California
475 Sansome Street, Suite 1150
San Francisco, CA 94111
T: 415.291.4400
F: 415.291.4401
PPIC.ORG

PPIC Sacramento Center
1215 K Street, Suite 1740
Sacramento, CA 95814
T: 916.440.1120
F: 916.440.1121