

Mono: The Lake, the Legacy

by Mary Scoonover

On September 28, 1994, in a hearing room in the state capitol, the California State Water Resources Control Board (Water Board) unanimously adopted a decision amending the City of Los Angeles's water rights in order to protect the environmental resources of the Mono Basin. In a noteworthy announcement earlier that morning, the parties to the 15-year legal battle over Mono Lake announced their agreement not to appeal the Water Board's order, thus ending one of the most celebrated environmental battles in California history.

To believe, however, that Mono Lake either began or ended with the Water Board process is a great injustice to the events, both natural and human, that shaped this inland sea. What follows is a brief history of the landscape, litigation, and people of the Mono Basin; a summary of the Water Board's process and order; and a glimpse at the future of the lake itself.

I. Natural History

Understanding the significance of the Water Board decision requires a look at the lake prior to Los Angeles's diversions of water from the basin. Why spend time on the million-plus years of geologic history of the basin? First, it makes the later summary of the litigation history less daunting. More importantly, however, it brings some sense of perspective to this entire controversy and the Water Board's decision. Although this litigation may appear to have been almost interminable, in geologic time, it was barely a drop in the bucket.

Mono Lake occupies a deep basin immediately east of Yosemite National Park. It is a land of striking extremes with perennial snowfields looming over sagebrush. "A country of wonderful contrasts," wrote John Muir, "hot deserts bounded by snow-laden mountains, cinders and ashes scattered on glacier-polished pavement, frost and fire working together in the making of beauty."¹

Mono Basin, formed some three million years ago at the western edge of the Sierra, has held a lake for perhaps a million years. The Mono Basin is one of the most geologically dynamic areas of the world. At least 12 times in the past million years glaciers filled the Sierran canyons and flowed downslope to the margins of Mono Lake. Geologists believe there has been perhaps 2,000 feet of offset between the floor of the Mono Basin and the Sierra Nevada during the past million years. There have been dozens of volcanic eruptions during the past 40,000 years, and evidence indicates that the incidence of volcanic activity has actually increased during the last 3,000 years.

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Abutting the southern shore of Mono Lake is what may be the youngest mountain range in North America, the Mono Craters. Another interesting geologic feature at Mono Lake is tufa, calcium carbonate structures created under the lake by fresh-water springs. In many locations tufa is now visible along the shorelands.

Mono Lake has no physical outlet other than evaporation. It hasn't overflowed its basin in tens of thousands of years. The lake is sustained from surface runoff (streams and springs), groundwater inflow, and precipitation on its surface. Mark Twain commented, "Half a dozen little mountain brooks flow into Mono Lake, but not a stream of any kind flows out of it. What it does with its surplus water is a dark and bloody mystery."² The answer to Twain's question is simple: evaporation.

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The creeks and springs that flow into the lake introduce minute quantities of soluble salts and minerals, which accumulate in the lake over long periods of time. On a shorter time scale, increases in lake level dilute the salts while lake recessions concentrate them. At lake levels typical of the past decade, Mono Lake is almost three times saltier than the ocean.

In its chemical composition, however, Mono Lake differs significantly from the ocean. It contains chlorides, carbonates, sulfates, and other substances. The carbonates make the lake 80 times more alkaline than seawater, imparting a slippery feel, and making it an outstanding cleansing agent. This bitter chemistry precludes fish and many other aquatic organisms, but provides habitat for a huge abundance of algae, brine shrimp, alkali flies and many microscopic organisms.

The Mono Basin was home to indigenous people prior to European exploration and settlement. The natives gathered alkali fly pupae, or kutsavi, during the summers at the lake's edge. The pupae were a significant source of fat and protein and provided a valuable commodity for out-of-basin trading.

European visitors recorded their impressions of the basin over the past 150 years. Israel Russell, a scientist with the United States Geologic Survey, explored the Mono Basin in the late 1880s. He wrote: "In the middle distance there rests upon the desert what appears to be a wide sheet of burnished metal, so even and brilliant is its surface. It is Lake Mono. At times the waters reflect the mountains beyond with strange distinctness . . . No prosaic description, however, can portray the grandeur of fifty miles of rugged mountains, rising beyond a placid lake in which each sharply-cut peak, each shadowy precipice, and each purple gorge is reflected. . . ."³

II. Modern History

By early in the 20th century, Mono Lake was home to an established tourist and recreation industry. Boating resorts, fishing, duck hunting and swimming drew visitors from

all over the state. Long-time residents of the Basin describe the sky blackened by huge flocks of ducks, geese, swans, gulls, grebes, and other aquatic birds. The birds fed on brine shrimp and alkali flies, used the fresh-water lenses that floated on the lake, and rinsed their feathers in the fresh water of the streams.

Some residents fished for trout in the swiftly flowing Rush and Lee Vining creeks (tributaries to Mono Lake) using willows for poles, string for line, and pins for hooks with worms or grasshoppers for bait. Others preferred fly fishing. By 1940, a local newspaper declared that "Mono County is an extraordinarily popular vacation spot and leads the state in the number of trout taken."

In the 1920s and 30s, boats ventured out on the lake for elementary school field trips, bird watching, sightseeing, moonlight tours, and even boat racing. The lake was a favorite swimming spot among locals and tourists. It was reputed to be wonderful for bathing and medicinal purposes. The solubles were dilute enough in pre-diversion times for people to swim for hours and even open their eyes. (Today, swimmers don't open their eyes in the lake for fear of a caustic reaction.) Visitors also came to the lake to hike, camp and picnic along the tributary creeks, on the beaches of white pumice sand, and on the islands in the lake. Long stretches of the western shorelands were lined with tall, riparian woodlands that extended to near the water's edge.

In the early 20th century in Los Angeles, civic leaders, businessmen and land developers realized that their limited local water supply would impede further growth of the city. The lead engineer for Los Angeles, William Mulholland, embarked upon one of the most ambitious water projects ever undertaken: a 240-mile-long aqueduct that would tap the Owens River, its snow-fed tributaries and eventually the streams feeding Mono Lake. Mulholland remarked in 1907, "If we don't get the water, we won't need it."⁴

Los Angeles acquired water rights in the Owens Valley and constructed its aqueduct. The Owens Valley diversion deprived Owens Lake of inflow, causing its demise. By 1930 the population of Los Angeles had increased to 1.2 million people, and was still growing. That year, Los Angeles voters approved a bond measure to finance the extension of the aqueduct northward from the Owens Valley into the Mono Basin.

In 1940, the Water Board issued permits to the Los Angeles Department of Water and Power for the diversion of water from four Mono Lake tributary streams--Rush, Walker, Parker and Lee Vining Creeks--thereby extending the aqueduct intake to 388 miles from Los Angeles. To the aqueduct's proponents, Mono was a worthless, saline "dead sea." Water flowing into the lake was considered wasted. Although environmental concerns were raised when these licenses were approved, the Water Board concluded it

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had no power to consider the Mono Basin's esthetic and natural values and had no choice but to confirm Los Angeles's rights to apply the water to urban uses.

In 1963, Los Angeles initiated construction of a second aqueduct from the Owens Valley to enable greater exports from the Eastern Sierra to Los Angeles. This second barrel was completed in 1970. The water in the system flows by gravity through tunnels and siphons from the Eastern Sierra to Los Angeles, generating hydroelectric power en route. At its peak diversion, Los Angeles received roughly 15 percent of its water from the Mono Basin.

III. A Lake Imperiled

Diversion of Mono Basin streams since 1940 caused the lake to fall 45 vertical feet--from a pre-diversion level of 6417 feet above sea level to an historic low stand of 6372 feet in January 1982. In the mid-1970s, a group of University of California students began studying the impact of the diversions on the biotic and abiotic elements of the basin.

They found that, because of the diversions, the lake volume had been halved, and the salinity nearly doubled, thus jeopardizing the health of the brine shrimp and alkali fly populations. Almost 15,000 acres of dry lakebed were exposed, giving rise to toxic dust storms which represented some of the worst recorded violations of state and federal clean air laws.

The recession of the lake also exposed a land bridge to the island that was the principal nesting place for a major population of California gulls. With the island accessible to predators, the gulls abandoned it as a nesting site.

The dropping lake level also caused severe erosion along the tributary channels. On Rush Creek alone more than 400,000 cubic yards of sediment were excavated and deposited in the lake. The streams incised (down cut) their beds by as much as 25 vertical feet. The deeply incised stream trenches acted as ground water drains, lowering the water tables from 10 to 25 feet, destroying the delta marshes and converting them to dry scrubland. Construction of reservoirs and restriction of fresh water inflow to the lake also eliminated hundreds of acres of waterfowl habitat. The receding lake exposed a broad band of alkali playa around the lake plainly visible on satellite photographs.

Several of the students, alarmed by their findings, formed the Mono Lake Committee to "save" the lake.

IV. Litigation

A. *National Audubon v. Superior Court*

In 1979, the Mono Lake Committee and the National Audubon Society filed a lawsuit against Los Angeles,⁵ alleging in part that Los Angeles's diversions violated the public trust doctrine by destroying the environmental values of a navigable lake. Although the public trust had never been applied to appropriative water rights, precedent existed for the allegation. Cases going back to the days of hydraulic mining prohibited activities upstream that adversely affected navigable waters below.⁶

In 1983, the California Supreme Court held in *National Audubon* that public trust was indeed applicable, and imposed on the State an "affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses

whenever feasible."⁷ Furthermore, the court held, the state must exercise continuing supervision over the taking of appropriated water, even when allocation decisions were initially made after consideration of their effects on the public trust.⁸ The court recognized the extent to which the economy and population have developed in reliance on appropriated water. It acknowledged, therefore, that the Legislature may "as a matter of current and historical necessity . . . authorize the diversion of water to distant parts of the state, even though unavoidable harm to trust uses at the source stream may result."⁹

*B. California Trout v. State Water Resources Control Board
(Cal Trout I) and California Trout v. Superior Court
(Cal Trout II)*

Meanwhile, in the early 1980s, fishing groups challenged Los Angeles's right to divert virtually the entire flow of several Mono Lake tributaries on somewhat different grounds. The basis of their challenge was Fish and Game Code section 5937, which provides that the "owner of any dam shall allow sufficient water at all times . . . to pass over, around, or through the dam, to keep in good condition any fish that may be planted or exist below the dam."¹⁰

In 1989, the Third District Court of Appeal made clear that Los Angeles's water licenses must be limited to water available after sufficient releases for fisheries are maintained: "These provisions [§§5937 and 5946] straightforwardly limit the amount of water that may be appropriated by diversion from a dam in the designated area by requiring that sufficient water first be released to sustain fish below the dam."¹¹

However, neither the Water Board nor Los Angeles took immediate action to restore the stream flows. They believed that the requirements of the statute could be met by studies of

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alternative solutions. The National Audubon Society disagreed and raised the issue to the Court of Appeal. In 1990, the Court of Appeal again visited the issue of whether or not the Water Board had the discretion to forego compliance with the Fish and Game Code to balance competing claims for the beneficial use of water. The court wrote, "[t]hat argument is foreclosed by section 5946 and our prior opinion for the reason, we are at pains to repeat, that the Legislature has already balanced the competing claims for water from the streams affected by section

5946 and determined to give priority to the preservation of their fisheries. There is no discretion in the Water Board to do other than enforce its requirements."¹²

The Court of Appeal in *Cal Trout II* directed that Los Angeles's licenses be amended to require that it release sufficient water into the streams from its dams to reestablish and maintain the fisheries which existed in them prior to diversion. The Court directed the Water Board to establish long-term flows for the tributary streams, and asked a superior court to set interim flows.

In 1989, all Mono Basin cases, including the public trust and streamflow cases, were consolidated before Judge Terrence Finney in El Dorado County Superior Court. After months of hearings, he set a preliminary injunction prohibiting Los Angeles from diverting any water from the Mono Basin unless and until the lake elevation reached the critical level of 6377 feet. Because of drought, the lake has not reached this critical level in the past five years. Consequently, no diversions have occurred. Judge Finney also required Los Angeles to begin interim stream restoration and rewatering on the tributaries. Judge Finney agreed to render interim protection to the lake and stay the proceedings in superior court pending the outcome of the Water Board process.

C. State Water Resources Control Board Process

The Water Board set out to accomplish two tasks in its review of Los Angeles's water right licenses in the Mono Basin: 1) quantify the flows necessary in each of the four tributary streams to satisfy Fish and Game Code section 5937; and 2) determine what lake level was necessary to protect the public trust resources of the Mono Basin. The Water Board released a three-volume, 1000-plus page draft environmental impact report on the project in the spring of 1993, and an evidentiary hearing began in October 1993. The hearing lasted four months. It included as parties the Los Angeles Department of Water and Power, the National Audubon Society, the Mono Lake Committee, the California State Lands Commission, the California Department of Parks and Recreation, the California Department of Fish and Game, California Trout, the U.S. Forest Service, the U.S. EPA, the Great Basin Unified Air Pollution Control District, the California Air Resources Board, the U.S. Fish and Wildlife Service, the Sierra Club, and the Upper Owens River property owners in the evidentiary phase. In addition, several hundred individuals and entities made policy statements, including California EPA Secretary James Strock.

The state's responsibility for preservation of the unique values of the Mono Basin primarily belong to the three state agencies represented in the proceedings: the State Lands Commission, the Department of Parks and Recreation, and the Department of Fish and Game. The State Lands Commission is charged with the administration of the public's interest in the beds of navigable lakes and rivers, and the identification and protection of environmentally sensitive lands.¹³

The Department of Parks and Recreation is responsible for managing the Mono Lake Tufa State Reserve, consisting of the state-owned portion of the Mono lake bed lying at or below 6417 feet.¹⁴ The purpose of a state reserve is to preserve the native ecological associations, unique fauna or floral characteristics, geological features, and scenic qualities in a condition of undisturbed integrity with resource manipulation restricted to the minimum required to negate the deleterious influence of humans.¹⁵ The Department of Parks and Recreation cooperatively manages the Mono Lake Tufa State Reserve with the U.S. Forest Service and its Mono National Forest Scenic Area.

California's fish and wildlife resources are held in trust for the people of the State by the Department of Fish and Game.¹⁶ Fish and Game has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitats necessary for biologically sustainable populations of those species.¹⁷ In addition, the Court of Appeal in *Cal*

Trout II made it clear that "the requisite administrative expertise of determining the stream flows necessary to establish and maintain fisheries resides principally in the Department of Fish and Game."¹⁸

During the lengthy hearing process, overseen by Hearing Officer Marc Del Piero, the Department of Parks and Recreation, the State Lands Commission, and the Department of Fish

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and Game joined the environmental parties, and numerous federal agencies in calling for adequate stream flows to restore the pre-diversion fishery in the streams, and a lake elevation of at least 6390 feet above sea level in order to protect Mono Lake's health and diversity. The Department of Fish and Game and several environmental organizations actually called for lake elevations above 6405 feet above sea level in order to restore some of the waterfowl habitat that had been lost. On September 28, 1994 the Water Board adopted Decision 1631 (D-1631). It established stream flows, set minimum lake elevations, directed operations management plans, and required development of both a stream restoration plan and a waterfowl habitat restoration plan.

Specifically, D-1631 establishes stream flows for each of the four streams based on water-year type (e.g., wet, normal, dry). It prohibits Los Angeles from exporting any water from the basin until the lake reaches an elevation of 6377 feet above sea level. If the lake elevation is at or above 6380 feet and below 6391 feet, Los Angeles may divert additional amounts of water. If the lake elevation has not reached 6391 by September 28, 2014, the Water Board will hold a hearing to determine if further revisions to Los Angeles's license are appropriate. The Water Board estimates the average lake elevation will be roughly 6391.6 feet after the transition period during which the lake is allowed to rise.

The Water Board did not include a specific stream and channel restoration plan or a waterfowl habitat restoration plan in D-1631. Instead, the order requires Los Angeles to prepare and submit to the Water Board for its approval a plan to restore, preserve and protect the streams and fisheries, and to help mitigate for the loss of waterfowl habitat due to diversions. The order lists several necessary elements of each plan and sets a schedule for completion. Los Angeles is directed to complete draft restoration plans by August 1, 1995, and make them available to the other parties for a 60-day review and comment period. Following revisions to the draft plans, Los Angeles is to submit final restoration plans to the Water Board by November 30, 1995. The other interested parties will have until December 31, 1995 to submit comments on the plans to the Water Board.

V. D-1631 as Compromise

When Mono Lake reaches the Water Board's intended lake elevation of 6391.6 feet, in twenty or more years, the environment will not have returned to its pre-diversion condition. This target elevation is only about a third of the way between where Mono lake stands today, and where it would have stood if Los Angeles had not diverted its tributaries. The decision seeks to protect public trust resources while acknowledging the beneficial uses of the diversions. In that respect, it is truly a compromise.

Decision-1631 is further a compromise in that it will not restore the incised stream channels of Rush, Lee Vining or Mill Creeks; it can not return the once abundant lagoon and lake-fringing wetland habitat of waterfowl, or repair the myriad of other damages that have occurred to public trust resources over the past 50 years. It is expected, however, to protect the biological diversity of the lake, reduce the air quality impacts, provide adequate and secure habitat and food for birds, and enhance the scenic and recreational resources of the Basin. Although Los Angeles will lose water and hydroelectric power under the Water Board's decision, state and federal cost-sharing will aid in developing replacement water supplies. The decision provides a stable lake ecosystem, while allowing some exports of water from the basin. It is not a perfect solution, but it is a reasoned one.

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The decision regarding Mono Lake is significant in that, for the first time, the Water Board modified a water right license in order to restore some of the environmental resources harmed by diversion, and sought to protect those values in the future. Hearing Officer Marc Del Piero said of the decision, "Today we are correcting a mistake and putting in place an order that protects the public trust. Today we did the right thing. Today we saved Mono Lake." The Water Board clearly followed the California Supreme Court's direction that the state has a duty to exercise continuing supervision over the taking and use of appropriated water, and to reconsider allocation decisions in light of "current knowledge" and "current needs."¹⁹

Did the Water Board, state agencies, scientists and environmentalists succeed in their efforts to save Mono Lake? With more than 250,000 visitors annually, a significant amount of ongoing scientific research, as well as the continued vigilance of local residents, the state and federal agencies and environmentalists, the success or failure of D-1631 will be carefully assessed. The Water Board itself will have an opportunity to evaluate the results of their efforts in 20 years or sometime sooner if it desires. The true test of our collective success will take much longer to play out. "In the long run," Lord Keynes once said, "we are all dead." But Mono Lake, a million-year-old relic of past geologic eras, may live for untold millennia because of the state's belated recognition of its irreplaceable values.

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NOTES

1. Mark Twain, *Roughing It*, 1972.
2. *Id.*
3. 1979 United States Geological Survey Eighth Annual Report.
4. Abraham Hoffman, *Vision or Villainy--Origins of the Owens Valley-Los Angeles Water Controversy*, Texas A&M Press, 1981.
5. *National Audubon Society v. Superior Court*, 33 Cal.3d 419 (1983).
6. *See, e.g., People v. Gold Run Ditch & Mining Co.*, 66 Cal. 138 (1994), *People v. Russ*, 132 Cal. 102 (1901); *See also, United Plainsmen v. North Dakota Water Conservation Com'n*, 247 N.W.2d 457 (N.D. 1976) (holding that there is a duty to consider public trust impacts in comprehensive water planning).
7. *National Audubon Society v. Superior Court*, 33 Cal.3d at 189.
8. *Id.* at 446-447.
9. *Id.* at 446.
10. Fish and Game Code section 5946 applies this earlier mandate to Mono and Inyo Counties: "No . . . license to appropriate water [in portions of Mono and Inyo counties, including the Mono Basin] shall be issued . . . after September 9, 1953, unless conditioned upon full compliance with Section 5937."
11. *California Trout, Inc. v. State Water Resources Control Board*, 207 Cal.App.3d 585, 599 (1989) (*Cal Trout I*).
12. *California Trout, Inc. v. Superior Court*, 218 Cal.App.3d 187, 204 n.3. (1990) (*Cal Trout II*).
13. *State v. Superior Court (Lyon)*, 29 Cal.3d 210 (1981), *cert. denied*, 454 U.S. 865; Cal. Pub. Res. Code §§6370, 6378.
14. Cal. Pub. Res. Code §5046.
15. Cal. Pub. Res. Code §5019.65.
16. Cal. Fish & Game Code §711.7.
17. Cal. Fish & Game Code §1802.
18. *Cal Trout II* at 211.
19. *National Audubon v. Superior Court*, 33 Cal.3d at 447.