

Summer 2023

Record Runoff Arriving

Mono Lake's Exciting Rise

they

Stream Restoration Potential

192

Summer Activities

Planning for the future in California's wet-then-dry, whiplash climate pattern is a very real challenge. The big winter we just came through has changed much about how Mono Basin residents are planning for the future. For example, my husband and I now own a generator. Some neighbors are rebuilding their roofs to a stronger structural standard. Others are getting more firewood than usual.

The big winter has also given us a chance to plan better for Mono Lake's future. We now know how directly stream diversions by the Los Angeles Department of Water & Power erode gains in the lake level. We have modeled different scenarios using zero diversions and it's evident how much better the lake could withstand drought if DWP was not diverting its water (see page 5). The drought that, in California's climate, is inevitable.

So now we know-we need to stock up on wood and we need to stock up on water.

This remarkably wet year is the perfect time to stock up. We expect Mono Lake to rise 5½ feet by the fall (see page 4), which is a rare, amazing boost. The State Water Board can pause DWP's diversions so the lake doesn't lose any of those precious feet of water, the way we know it will if DWP continues to divert. Mono Lake, California Gulls, phalaropes, brine shrimp, alkali flies, even humans, will be better set up to weather whatever comes next.

Planning for the future must include community as well. The Mono Basin community leaned on each other—our neighbors and friends—to get through this past winter.

Mono Lake's community is strong. Sixteen thousand members across the world—you, who are reading this *Newsletter*—are essential to shoring up the lake's fate in hard times, advocating for its better protection, and planning for its future. Let's make plans together.

-Elin Ljung, Communications Coordinator



In mid-May the walls of snow along Highway 120 West, Tioga Pass, were impressively tall.

Mono Lake Committee Mission

The Mono Lake Committee is a non-profit citizens' group dedicated to protecting and restoring the Mono Basin ecosystem, educating the public about Mono Lake and the impacts on the environment of excessive water use, and promoting cooperative solutions that protect Mono Lake and meet real water needs without transferring environmental problems to other areas.



Mono Lake Office

Information Center & Bookstore

Highway 395 at Third Street Post Office Box 29 Lee Vining, California 93541 (760) 647-6595

info@monolake.org • monolake.org

Los Angeles Office

1718 Wellesley Avenue Los Angeles, California 90025-3634

Staff

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Founded by David Gaines in 1978

The Mono Lake Committee is a 501(c)(3) non-profit organization, also known as the Mono Lake Foundation. Tax ID: 77-0051124



Summer 2023 Volume XLV, Number 1

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Winter 2023: A generational event

by Bartshé Miller

ast winter was, by any measure, superlative. It was the snowiest, coldest, wettest, foggiest, and most rugged winter in a generation. Extreme snowfall and avalanches resulted in a month-long closure of Highway 395. Deep snow buried vehicles, collapsed sheds, damaged roofs, closed schools, severed propane connections, crushed fences, cut off power, halted mail delivery, overwhelmed snow removal crews and equipment, and isolated communities. Intense snowfall fueled by multiple atmospheric river events wreaked so much havoc that in early March the state and federal government declared an emergency for Mono County and other affected counties in California.

Submerged in snow

The Mono Basin amassed a record-breaking snowpack. By late February, 67 inches of snow covered the ground in Lee Vining—a new record for total snow depth. A season total of 229.1 inches of snow was measured in town, which smashed the 1952 record of 170.5 inches. Lee Vining, in the rain shadow of the Sierra, is not accustomed to deep snow, and structural snow-loading requirements are less rigorous compared to higher elevation communities of Mono County. So much snow accumulated that many roofs were damaged and a handful began to show signs of imminent collapse residents banded together to help each other clear snow off roofs. For weeks during the winter shoveling was everyone's full-time job and still it was not enough to keep up.

Snowfall in the Mono Basin's higher elevations also set

records. Collectively, the Ellery Lake, Gem Lake, Gem Pass, Saddlebag Lake, and Tioga Pass snow sensors indicated a snowpack that was 248% of average. Tuolumne Meadows reported an astonishing 275% of average, and Sonora Pass in the Walker River Basin soared off the charts with 300% of average.

Stubbornly cold

Last winter was also the coldest in decades, adding a further twist to the extreme precipitation. Mono Basin temperatures were 6-8 degrees Fahrenheit below average from October to May; regionally, it was the coldest November to March since 1952. In the Mono Basin the unusually cold temperatures preserved low-elevation snow. When it wasn't snowing, ice fog known as poconip settled into the Mono Basin, preventing the sun from melting snow and residents from making their own vitamin D. A total of 53 days of poconip fog smothered Mono Lake from Conway Summit to the north end of the June Lake Loop. The poconip was implicated in destabilizing the snowpack below the crest in the Mono Basin-it deposited rime ice crystals, which, when buried under accumulating snow, potentially contributed to the total number and severity of avalanches that occurred on the slopes near Mono Lake, including many that ran across Highway 395.

Cold anomaly in a warming climate

The last decade has included some of the driest years and wettest years on record for the Mono Basin and many parts

Continued on page 24



Winter 2023 was extraordinary in the Mono Basin, with record snowfall, record cold temperatures, and a record number of foggy days.

Mono Lake's exciting rise may well disappear

DWP stream diversions will undo this year's lake level gains unless State Water Board acts

he incredibly wet winter of 2023 has us anticipating an exciting 5½-foot rise in Mono Lake's level by fall. That gain will boost the lake 30% of the way to the mandated healthy level that will protect the lake, its ecosystem and wildlife, air quality, cultural resources, and more.

But this important progress toward the long-overdue management level will be lost if stream diversions by the Los Angeles Department of Water & Power (DWP) continue unchanged.

In short, one wet year is not a management plan, nor a remedy to the inadequacies of the now outdated rules the California State Water Resources Control Board established to raise the lake to the Public Trust lake level of 6392 feet above sea level by 2014. With the lake a decade late and a dozen feet short of reaching that critical level, State Water Board action is urgently needed to lock in the gains Mono Lake will see this year and keep it on a rising trajectory.

Without Board action, DWP water diversions will, year after year, undercut the lake rises of wet years and accentuate the declines in the future droughts that we all know lie ahead. Mono Lake Committee hydrologic model projections show that continuing to follow the outdated rules will prevent the lake from achieving the Public Trust lake level.

Simply put, if DWP keeps doing the same thing it has done for the past three decades, there's no reason to expect different results. Plus, with the outdated rules set to allow stream diversions to quadruple in 2024, it is time for action.

by Geoffrey McQuilkin



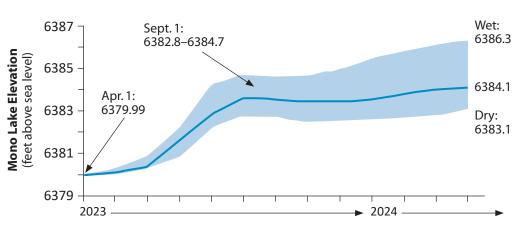
The lake level gauge was only accessible by skis or snowcat on April 1, the start of the runoff year.

Outdated rules will cause lake rise to be lost

The State Water Board established stream diversion rules back in 1994. Their purpose was to implement the protection of Mono Lake by raising the lake to the healthy Public Trust lake level in 20 years while allowing limited diversions of water to Los Angeles along the way. Although they were based on solid analysis at the time, the rules have not delivered the intended result. The lake is a decade overdue and only 30% of the way to the mandate; meanwhile, DWP has diverted the maximum allowed every year, taking more water than expected and continuing to divert even now despite the lake's lack of progress.

So what will happen to this year's 5½ feet of lake level gain in subsequent years? If diversions continue under the outdated rules, the gains will be lost.

Continued on page 5



Mono Lake Level Forecast 2023–2024

From April 1, 2023 to March 31, 2024, the Committee anticipates Mono Lake will rise about 4 feet, with a range of levels possible if next winter is wet or dry. Added to the 1.5 feet the lake has already risen since January, that means a total expected lake rise of 5.5 feet. Modeled by the Mono Lake Committee.

Mono Lake's rise from page 4

One clear illustration of this is to look at recent history. As the Committee told the State Water Board at the recent workshop on Mono Lake (see Winter & Spring 2023 *Mono Lake Newsletter*), we've seen this movie before, and we know how it ends.

Six years ago, the lake rose more than four feet thanks to the wet winter of 2017. Unfortunately, with DWP diverting the maximum allowed each year, the gains of 2017 were erased by 2022, triggering two emergency situations: Salinity increased to levels that violated federal and state water quality regulations, and the landbridge was exposed enough to allow predators access to the California Gull nesting islands.

The problem is that DWP water

diversions hold back the lake when it is rising and accelerate its drop when it is falling. Looking to the future, droughts are to be expected, and in the era of climate change their intensity, frequency, and duration are increasing. The key to lake health is what position Mono Lake is in when the inevitable dry years return.

If diversions continue unchanged, gains will be lost

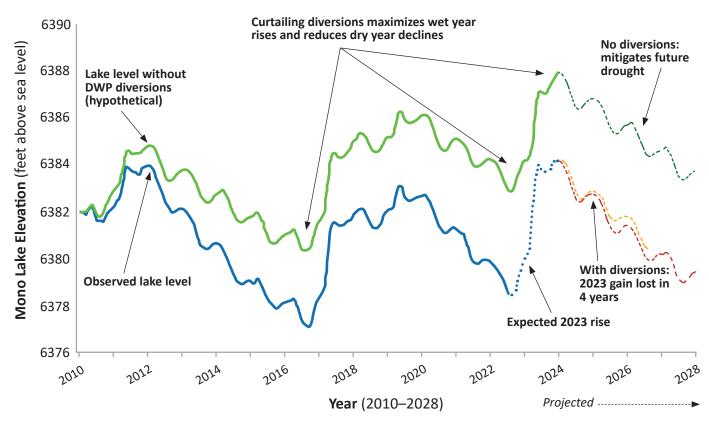
The Committee has taken a look back at the time period since 2010, which includes a moderate wet year, two extreme wet years, and the significant drought of 2012–2015 as well as the recent 2020–2022 drought. This time period is a good one for looking at the benefits of maximizing wet year gains as insurance against dry year declines. It is also representative of the developing whiplash pattern under climate change, in which annual precipitation swings from dry extremes to wet and back again.

The Committee hydrology team analyzed a key question: What happens to Mono Lake if one of the two recent droughts repeats itself starting next year? The answer is worrisome.

With the outdated stream diversion rules in place, a repeat of these droughts is amplified by DWP diversions continuing. The takeaway: Under the outdated rules, the 5½ feet we expect Mono Lake to rise in 2023 could be gone in as few as four years.

Continued on page 6

Without DWP diversions, Mono Lake would be rising



Analysis shows that over time, the impact of DWP's stream diversions significantly affects Mono Lake's level. The wet winters of 2011 and 2017 resulted in dramatic lake rises, which were quickly erased by subsequent periods of drought and continued stream diversions. This summer we expect a record lake rise (blue dotted line), but this graph demonstrates how droughts similar to what we've experienced in the last decade (dashed red line: 2012–2015 drought; dashed yellow line: 2020–2022 drought) would drop Mono Lake back down to dangerously low levels. The green lines show hypothetical lake levels if DWP stopped all stream diversions beginning in 2010—demonstrating that curtailing diversions creates enough buffer to sustain the lake through extended drought. Modeled by the Mono Lake Committee.

Mono Lake's rise from page 5

The hydrologic projections underscore a point the Committee and partners have been making frequently: After 29 years, it is clear the lake level rules aren't working, and it is also clear the State Water Board has to fix them. Relying on one wet winter's precipitation is not a plan—for Mono Lake nor Los Angeles. Allowing the current outdated stream diversion rules to continue ensures that Mono Lake's rise in 2023 will only be temporary.

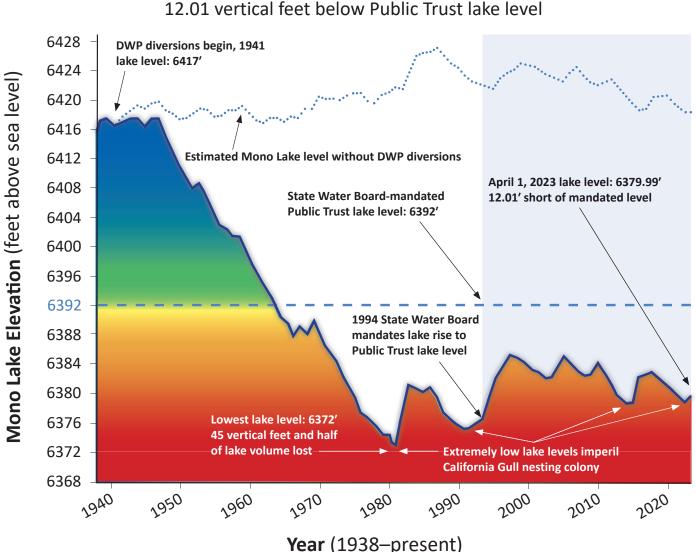
Without DWP diversions Mono Lake's rise would be preserved

The modeling team also asked: What would have happened if stream diversions had stopped in 2010—and everything else happened as it did? The answers are instructive.

First, this modeling shows that the lake, absent DWP diversions, would on average be rising—even accounting for the two driest three-year periods on record. Mono Lake would be four feet higher today, poised to hit the 6388-foot mark by early 2024. This illustrates the simple principle that the impact of stream diversions on the lake's level adds up over the years to significant amounts.

Second, the modeling shows that curtailing diversions maximizes wet year rises and reduces dry year drops,

Continued on page 7



DWP's stream diversions caused Mono Lake to lose half its volume and fall more than 45 vertical feet, negatively affecting the Mono Lake ecosystem, millions of migratory and nesting birds, salinity, and air quality. Even after the State Water Board mandated that Mono Lake rise to the Public Trust lake level of 6392 feet in order to achieve ecological sustainability, restore damaged resources, and minimize air quality violations, DWP's stream diversions have continued to keep Mono Lake too low by exacerbating lake level drops during droughts and eroding lake level gains during wet years. Modeled by the Mono Lake Committee.

Mono Lake Surface Elevation 2.01 vertical feet below Public Trust lake level

Mono Lake's rise from page 6

allowing the lake to build a critical buffer against drought. In this scenario, the lake would likely have remained above the 6380-foot level during both recent droughts, meaning that the California Gull protection fence would not have been necessary and salinity violations would have been avoided.

Third, in this hypothetical scenario, a future repeat of the 2012–2015 drought does cause the lake to fall, but it remains above 6383 feet (see dashed green line in graph on page 5).

Of course, the lake needs to be higher than 6380 or 6384 or even 6388 feet to provide protection and health for all the resources the State Water Board evaluated, including California Gulls, air quality, salinity levels, and more. That was the plan the Board ordered back in 1994—raise the lake to the 6392-foot Public Trust level to restore ecological health through wet years and dry ones.

Better rules can better protect the lake

Hydrology modeling shows we can do much better for the lake. Both Mono Lake Committee and California



On windy days dust billows off the dry lakebed, which was exposed when Mono Lake's level dropped due to DWP's stream diversions. The dust storms violate Clean Air Act health standards.

Department of Fish & Wildlife analyses show that different implementation rules would have produced notably different results for Mono Lake. For example, if the State Water Board had suspended diversions in 1994 until the protection level had been achieved, the lake today would be significantly higher and, after this incredible winter, expected to approach 6390 feet in 2024, putting it *Continued on page 8*

Tufa towers toppling

ono Lake's tufa towers are vulnerable to toppling when storm waves erode their bases. The repeated rise and fall of the lake creates a repeated risk of toppling, which underscores the importance of preserving this year's lake rise and continuing upward to the 6392-foot Public Trust lake level.



Dust storms will continue despite lake rise

inter snow is excellent at suppressing dust when it blankets the lakebed that was exposed by DWP water diversions. That exposed dust-emitting land is often responsible for the worst PM₁₀ particulate air pollution in the nation. After this year's snow melted in April, dust storms immediately kicked up again as expected-with two exceedances of Clean Air Act health standards recorded in the first two weeks of May alone. Detailed air quality monitoring shows decades of significant violations of the health standard, including 24 highconcentration exceedances last year.

As Mono Lake rises it will inundate the dusty lakebed, but this year's rise will still leave thousands of acres of lakebed exposed—far less than is needed to solve the air quality problem at Mono Lake. To do that the lake must rise to the Public Trust lake level, which was selected in part to ensure that hazardous dust storms come to an end. within quick reach of the Public Trust lake level.

DWP has argued that its water diversions have little impact on Mono Lake (see Winter & Spring 2023 *Mono Lake Newsletter*). Analysis of the actual hydrology shows otherwise.

Water in Los Angeles

In the big picture, Los Angeles and Mono Lake share a problem: both need an adequate and reliable water supply. The challenge is to achieve solutions, and the Committee sees

Meromixis expected this year

he welcome rise of Mono Lake this year is expected to produce a less desirable, though temporary, side effect. The large influx of fresh water from the streams will produce a phenomenon known as meromixis, in which a fresher (though still salty) layer of water floats on top of the more saline lake water and prevents the lake from fully mixing. By trapping nutrients under the fresher layer, meromixis reduces the food supply available to brine shrimp and can cause a decrease in productivity, which affects available food for some species of birds. The impact, however, is transient and will disappear as the lake's water mixes more fully over subsequent years.

Meromixis is more likely to occur when the lake level is low, like it is now, because low levels cause excessively high salinity levels. The higher the lake level, the lower the salinity, and the easier it is for lake water and fresh inflow to mix. The State Water Board determined that the probability of meromixis is very low when the lake is at the 6392-foot Public Trust lake level—yet another reason that taking action to ensure a quick, steady rise is the right thing to do for the health of Mono Lake. flexible and innovative paths forward. Indeed, Los Angeles has set impressive goals for sustainable local water supply development (see page 9) that will reduce the burden on places like Mono Lake. Funding for projects like conservation, turf replacement, and stormwater capture can accelerate this good work. The Committee is working with Los Angeles community groups and state officials to advance project concepts to provide the flexibility needed to deliver the water to Mono Lake that it needs while meeting real water needs in Los Angeles.

State Water Board action is essential

Earlier this year, the Mono Lake Committee, California Department of Fish & Wildlife, and Mono Lake Kutzadika'a Tribe asked the State Water Board to take swift action to implement the Mono Lake protection requirements of their 1994 decision specifically, to temporarily suspend diversions by DWP to allow the lake to reach and fluctuate at the Public Trust lake level (see Winter & Spring 2023 *Mono Lake Newsletter*). Joined by more than 3,000 supportive public commenters, including air quality and land management agencies and Mono County, the Committee asked the Board to hold the hearing it has already determined is necessary to look into changing the outdated diversion rules this year. Given the narrow scope of such a hearing, which would only need to address how to expeditiously implement the 6392-foot Public Trust lake level, we believe the Board has access to the data and established hydrologic models it needs to proceed quickly.

As record Mono Basin snowfall turns to record runoff, the pressure for a State Water Board hearing is also at record levels. The extremely wet winter of 2023 is a gift that will raise the lake multiple feet toward the Public Trust lake level in a single season. The fact is clear that, if given the opportunity by the Board, Mono Lake will rise. That gives us a rare opportunity to seize the moment to preserve this year's lake level gains before DWP diversions increase and, once again, undercut progress in protecting Mono Lake. *****



In big runoff years like this, ephemeral streams carry snowmelt to Mono Lake.

City Council asks: Is Los Angeles water transformation on track?

by Geoffrey McQuilkin

os Angeles is making big changes to increase use of local water to ensure a sustainable water supply for residents and reduce reliance on distant sources like Mono Lake. The city's ambitious and impressive local water goals add up to this: By 2035, 70% of the water Los Angeles uses will be sourced locally, up from about 10% today.

The vision and the projects are huge and will change how the city manages water at a scale equivalent to the days of William Mulholland constructing the Los Angeles Aqueduct: Capture 150,000 acre-feet of stormwater annually. Recycle all wastewater. Remediate groundwater contamination. Reduce per capita potable water use by 25%.

Projects are underway with widespread public support. One notable funding source—voters in Los Angeles County passed, with 70% in favor, a 2018 parcel tax measure known as Measure W to provide funding for enhanced green infrastructure to recharge local groundwater basins.

For Mono Lake and the Owens Valley, this transformation is also huge. While the Los Angeles Aqueduct remains a part of the city's supply plan, the water demand would be reduced, potentially bringing an end to the Mulholland philosophy of taking every last drop. This past winter, for example, Los Angeles Department of Water & Power (DWP) press releases highlighted how expanded stormwater capture projects around the city captured 32,000 acre-feet of water by early January with capacity to go up to 64,000 acre-feet—14 times the amount diverted from Mono Lake last year.

So how is DWP doing in meeting these goals? Are they

on track for success? What projects are underway? Those are the questions City Councilmember Katy Yaroslavsky asked in a March resolution, seconded by Councilmember Paul Krekorian and approved overwhelmingly by the City Council.

Yaroslavsky's motion highlighted the importance of achieving these goals in light of climate change imposing uncertainties on old assumptions about water supply. She also directly acknowledged the city's responsibility for the impacts of its existing water system, writing "the importation of water supplies have had direct, negative impacts on the natural environment and populations near the sources of this water, including in Mono County [and] Inyo County..."

The *Los Angeles Times* endorsed LA's goals in an editorial, calling them ambitious, important, and doable, but questioning whether the city's leadership had the commitment to see them through. Yaroslavsky's motion is an important step, reaffirming the Council's ongoing support for this water transformation—and keeping DWP on track to get it done. The resolution requires DWP and fellow agencies to report on "the transition to reducing purchased or imported water and increasing our local supply, including all planned and existing efforts, as well as infrastructure and conservation projects in the planning and or development stages."

The report from DWP is due this summer. Here at the Mono Lake Committee we enthusiastically anticipate Mono Lake being part of the discussion. Once the report is released, Yaroslavsky and the City Council Energy & Environment committee are expected to hold a hearing to dig into the details. �



In March the Los Angeles City Council passed a resolution requiring DWP to report on its progress toward reducing use of imported water—such as water from the Mono Basin—and increasing local water supplies.

What does record runoff mean for Mono Basin stream restoration?

Exceptional runoff offers exceptional restoration opportunities

he seasonal runoff (April through September) in the Mono Basin this year is forecasted to be 243% of the long-term (1971-2020) mean runoff, which will make it the single wettest seasonal runoff period in more than a century. While this impressive percentage provides us with a general sense of what kind of runoff will occur this year, the stream restoration benefits associated with an exceptionally wet runoff year are best understood in terms of three factors: magnitude, timing, and frequency.

Larger flows restore more

Runoff magnitude is perhaps the most exciting consideration in a wet year like this. When I look at a hydrograph (streamflow over time), say during one of the Los Angeles Department of Water & Power's (DWP) planning meetings, my eyes can't help but jump to the highest point of the graph to examine how big the peak flow will be. While DWP's presentations often discuss

the logistical challenges of operating their outdated water conveyance infrastructure, I've found my attention swept away by daydreams of 1,000 cubic feet per second (cfs) of water spreading across Rush Creek's floodplains and through braided channels, with stream banks armored by willows, black cottonwoods, and Jeffrey pines. What large trees might fall into the creek? What kind of log jams will form, creating fish



Stream Ecosystem Flows that mimic natural runoff patterns are critical to achieving restoration goals.

by Robert Di Paolo



In 2017 Rush Creek, Mono Lake's largest tributary, experienced many restoration benefits of high flow runoff. The 2023 runoff is forecasted to be 243% of the long-term mean.

habitat and stream complexity? What new channels, pools, and delta habitat will establish after such a large flow recedes? Bottom line, large-magnitude flows are destined for Mono Lake, which will bring tremendous stream restoration potential.

Timing is everything

Runoff magnitudes indicate what restoration processes will occur, but runoff timing affects how those magnitudes will be enhanced or diminished, and their duration. DWP's current runoff forecast predicts a peak flow of more than 930 cfs occurring in the Rush Creek bottomlands near the end of June, but temperatures will ultimately determine when and how quickly the snow will melt, which in turn will dictate runoff magnitudes. In this way, runoff timing plays a critical role in what kinds of flow magnitudes will occur-before, during, and after the peak runoff period. As Greg Reis explains on page 12, "there is a chance that the minimum required peak flow of 750 cfs could be reached, however, an early peak could be captured by [Grant Lake] reservoir and a cool summer could result in a lower peak but extend high flows well into August." Critically, ecological processes such as willow seed dispersal or trout spawning rely on a "natural" timing of runoff. It's for this reason that DWP is required to mimic the natural runoff

Restoration milestone for Mill Creek

Amended settlement returns streamflows to Mono Lake's third-largest tributary

by Robert Di Paolo

he Mono Lake Committee is dedicated to protecting and restoring Mono Lake and its tributary streams, but while protection and restoration were afforded to four of Mono Lake's major creeks (Rush, Lee Vining, Parker, and Walker) in 1994 by the California State Water Resources Control Board, Mono Lake's third largest tributary, Mill Creek, has remained excessively diverted for decades. That officially changed in November 2022 with the signing of the First Amendment to the Lundy Hydroelectric Project Settlement, which guarantees water will be delivered to Mill Creek as required by established water rights.

Finding a new solution to an old problem

An analysis conducted by the Committee in 2011 found that over the previous 20-year period, nearly 80% of Mill Creek's water had been diverted due to inadequate infrastructure owned and operated by Southern California Edison (SCE). This means that Mill Creek received less than half of the water it should have received according to court-decreed water rights. As a result, excessive diversions significantly impacted and degraded the bottomlands of Mill Creek where a once robust wooded wetland has been nearly wiped out.

It was this pattern of excessive diversions and environmental degradation that led to a 2005 settlement agreement. The 2005 settlement was signed by seven parties consisting of the Committee, SCE, US Forest Service, Bureau of Land Management, California Department of Fish & Wildlife, California Trout, and American Rivers. The parties sought to establish minimum flow requirements for Mill Creek below the Lundy Reservoir (there were none at the time) as well as to ensure that SCE's hydropower operations wouldn't harm existing water rights. Original plans included building a new water conveyance system, but that system proved too expensive and logistically challenging to implement. By 2017, with SCE stymied in construction of the critical infrastructure, the parties reconvened at the request of SCE to see if an amendment to the settlement could be agreed on in order to achieve the same key objectives.

Collaboration key to success

Amending the 2005 settlement took five years of analysis, field testing, discussion, and collaboration between the seven settlement parties. But thanks to that effort, SCE is now able to accurately track, report, and deliver Mill Creek water as part of their normal hydroelectric operations, including during emergency conditions like in March 2023 when the Lundy powerhouse was the sole power supply for Mono City amidst emergency snow and avalanche conditions. New tools and guidelines developed collaboratively through the amended settlement process will now allow for more accurate water deliveries to water rights holders and provide more transparent information to interested parties, all while delivering larger

Under the First Amendment to the Lundy Hydroelectric Project Settlement, this year Mill Creek will receive larger and more consistent streamflows, which will give a much-needed boost to riparian habitat restoration along Mono Lake's third-largest tributary.

and more consistent natural flows to Mill Creek. These increased flows will help to restore vital cottonwood and willow riparian habitats, maintain a multi-channel stream network, and promote more productive lake delta habitat for waterfowl and shorebirds.

A new landscape for the future of Mill Creek restoration

The finalization and implementation of this amended settlement is a major restoration milestone for Mill Creek, but the Committee's work will not end here. We will continue to collaborate with settlement partners, water rights holders, and other parties to make sure the settlement is being fulfilled and working. We will work to implement new restoration opportunities for Mill Creek now that it will reliably receive larger and more natural flows. And we will continue to share the restoration progress and success at Mill Creek with our members and advocates who make this work possible. *****

Epic runoff begins

by Greg Reis

he snowmelt runoff forecast is 226% of average for the 2023 runoff year (April 1, 2023–March 31, 2024), much higher than the previous record of 202% in 1983. That record was followed closely by 196% of average runoff in 2017.

This year, a heat wave at the end of April began melting the record snowpack rapidly and generated the first peak flows of the season. A warm-up in mid-May caused some road crossings to flood on smaller streams and started what will be a very long season of high flows in the larger Mono Basin streams.

During the high flow period in 2017 Southern California Edison (SCE) pumped water out of Agnew Reservoir in order to keep its Rush Creek reservoir storage below seismic safety limits. This is not necessary this year due to SCE's expeditious infrastructure changes at all three reservoirs that increase their

outflow capacity.

A project benefitting Rush Creek that the Los Angeles Department of Water & Power (DWP) agreed to a decade ago is the construction of a new highflow outlet in the Grant Lake Reservoir spillway. Construction is scheduled to begin in April 2024. The outlet will allow reliable delivery of high restoration flows to Rush Creek every year.

This year, without the outlet, there is a chance that the minimum required peak flow of 750 cubic feet per second could

be reached, however, an early peak could be captured by the reservoir and a cool summer could result in a lower peak but extend high flows well into August. High August flows, if combined with a wet 2024 winter, could make it challenging to lower Grant enough for construction before October 1 to maintain low fall and winter flows that benefit Rush Creek fish. In anticipation of these possible wet-year challenges, DWP has requested from the State Water Board a one-year delay in construction. *



At least once a month Mono Lake Committee staff check Mono Lake's level at the gauges.

Lakewatch

6417′

5392'

version lake level, 1941

lagement lake level

Record rise in Mono Lake expected

by Greg Reis

lot of snow was melting around Mono Lake in April. but Mono Lake rose less than a tenth of a foot that month, to 6380.07 feet above sea level on May 1. Why

didn't Mono Lake rise faster? April consistently has the least variation in Mono Lake levels of any month. If no big storms occur and streamflows are near historical averages, Mono Lake tends to rise a tiny bit, because inflow only slightly exceeds 637 evaporation. May is also a low-variation month, and a rise exceeding 0.36 feet will set a new storic low, 1982 record (since 1989).

June through August, in an Extremewet year-type like

this, is when most of the rise in Mono Lake will occur. In fact, if you add up the record monthly rises between April and September, a total rise of 4.3 feet is along the lines of what we will see this summer. This is about a foot higher than the 3.2-foot April-September rise in 2017, which beat the previous record 2.7-foot rise in 1983. Multiple monthly records could be broken this year, and with a strong El Niño likely to bring warmer winter temperatures, there is a good chance for the runoff year record rise of 3.56 feet set in 2017 to be broken next April 1.

In August Mono Lake will be the highest it has been in more than a decade and about a foot shy of the highest levels reached since the State Water Board's 1994 decision to protect Mono Lake. It is urgent that stream diversions are paused as soon as possible in order to

Mono Lake's record monthly rises since 1941

April	0.54 feet (1969)
Мау	0.60 feet (1969)
June	1.37 feet (2017)
July	1.02 feet (1967)
August	0.55 feet (1983)
September	0.20 feet (1983)

preserve these gains, allowing the lake to rise to the 6392-foot Public Trust lake level as quickly as possible. *

Greg Reis is the Committee's Information & Restoration Specialist. At a Living Lakes conference in South Africa he realized that migrating birds stay in the same spot relative to the sun, and the Earth tilts under the migrating birds.

Mono Basin Journal

A roundup of quiet happenings at Mono Lake

by Geoffrey McQuilkin



White tufa, afternoon thunderstorms and songbirds seemingly everywhere all at once, memories of the cold, deep snows of the long winter have faded. Yet winter's legacy remains, and now the snowmelt shapes the season.

Water is the story of the day. Water in every draw, wash, ephemeral drainage, and creek that offers a path to Mono Lake. Water flooding the highway, carving chasms through local dirt roads, and sheeting across meadows. In Rush, Lee Vining, Mill, Parker, and Walker creeks the snowmelt is thundering down, mobilizing cobbles and boulders into a rocky chorus that sings a story of the power of water.

And waiting to receive winter's liquid bounty is Mono Lake, shimmering in the summer sun, rising quickly. The 40 miles of lake shoreline are changing fast as the lake pushes upward and outward, sand berms building and moving, tufa submerging into the underwater world where it formed. As we celebrate the rise, we hope—and we work and we advocate—to never again see Mono Lake at such a perilously low level. �

Benchmarks



December 6, 2022: Mono Lake dropped to a low point of 6378.4 feet above sea level after two years of drought, leaving many tufa towers on dry land.



May 24, 2023: Mono Lake has already risen 1.7 vertical feet thanks to this year's record-breaking snowpack. The lake is expected to rise a total of 5.5 feet this year.

When you visit Mono Lake

estled at the edge of the arid Great Basin and the snowy Sierra Nevada, Mono Lake is an ancient saline lake that covers over 70 square miles and supports a unique and highly productive ecosystem. Along the lakeshore, scenic limestone formations—tufa towers—rise from the water's surface. The lake has no fish; instead it is home to trillions of brine shrimp and alkali flies. Freshwater streams feed Mono Lake, supporting miles of lush riparian forests of cottonwood and willow. Millions of migratory and nesting birds visit the lake each year.

The Mono Lake story begins

In 1941, the Los Angeles Department of Water & Power (DWP) began excessive water diversions from Mono Basin streams. Mono Lake dropped 45 vertical feet, lost half its volume, and doubled in salinity.

The Mono Lake Committee was founded in 1978 in response to the threat of ecological collapse of Mono Lake. The Committee set up headquarters in the old aqueduct workers' dance hall in Lee Vining and went to work spreading the word about Mono Lake. The Committee took the City of Los Angeles to court, arguing that DWP had violated the public trust doctrine, which is "the duty of the state to protect the people's common heritage of streams, lakes, marshlands and tidelands..." (Supreme Court of California, 1983).

In 1994, after more than a decade of litigation, the California State Water Resources Control Board ordered DWP to reduce diversions and raise Mono Lake to a healthy level of 6392 feet above sea level—twenty feet above its historical low. This was truly an environmental victory. Now, twentynine years after the State Water Board's historic decision, the lake is only 30% of the way to the healthy management level. There is more work to be done.



Mono Lake Committee Information Center & Bookstore

- Open daily 9:00 AM-7:00 PM during the summer
- monolake.org and (760) 647-6595

See detailed displays about Mono Lake's political history and the current work of the Mono Lake Committee, "The Mono Lake Story" film, an art gallery, a comprehensive selection of books on natural and local history, T-shirts, maps, and locally made artisan gifts. This is also the Lee Vining Chamber of Commerce.

Mono Lake's recovery depends on water solutions in Los Angeles, and the Committee has created solutions to the demand for water by implementing conservation and recycling programs in LA that have saved more than enough water to share with Mono Lake. Today LA is one of the most waterconscious cities in the United States, and the Committee works statewide to promote wise water use.



Canoe on Mono Lake

- Saturdays and Sundays at 8:00, 9:30, and 11:00AM
- June 24, 2023 through September 3, 2023
- Tours last one hour
- \$35 per person; \$20 for children ages 4–12
- Sorry, no children under the age of 4 and no pets
- *Reservations required*: monolake.org/canoe *or* (760) 647-6595

Guided canoe tours provide a unique look at the ecology and geology of Mono Lake. Discover bubbling springs, alkali flies, brine shrimp, underwater tufa towers, and migrating birds from the vantage point of a canoe. No canoe experience is necessary and all equipment is provided.

you are part of the Mono Lake story



Free naturalist tours at South Tufa

- Daily at 10:00 AM and 6:00 PM*
- *Reservations recommended: monolake.org/freetour or (760) 647-6595
- Tours are free, but there is a \$3 per person entrance fee to the South Tufa area
- Meet at the kiosk at the South Tufa parking lot

Find out why Mono Lake is salty, make tufa, taste alkali fly pupae, and see migratory and nesting birds on this fascinating hour-long tour. (If you can't make a scheduled tour, you can take a self-guided tour on monolake.org/tour.)

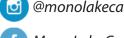
The Mono Lake story is not over

The Committee works in the areas of public policy, ecological protection and restoration, education, water conservation, and scientific research. We continue to strive for solutions that balance the needs of people and the environment.

Protection. The Committee defends existing Mono Lake protections to ensure that established rules, orders, agreements, and victories remain active and strong. We make sure that DWP complies with existing rules and agreements, acting as a watchdog when necessary. In addition to demands for water, challenges facing Mono Lake also include poorlyplanned development, increasing recreation pressures, underfunded management agencies, and climate change.

Restoration. The Committee works to restore the ecological functions of Mono Lake, its tributary streams and waterfowl habitat, and the watershed as a whole. Our restoration programs work to heal the damage caused by 50 years of DWP's past excessive water diversions. As a result of historic litigation, DWP is required to fulfill its restoration obligations in the Mono Basin as ordered by the State Water Board. The Committee plays a critical role as a monitor to transform the





Mono Lake Committee

restoration requirements into measurable restoration progress.

Education. The Committee offers hands-on programs to share the sense of wonder that Mono Lake evokes. South Tufa tours, activities for school groups, Field Seminars (see page 17), custom guided trips, and the annual Mono Basin Bird Chautauqua all provide ways to learn more about Mono Lake. The Committee's Mono Basin Outdoor Education Center brings students from Los Angeles to learn about the source of their water, educating the next generation of California policymakers.

Science. Scientific research is the basis of our policy work, a guide for restoration, and an inspiration for understanding Mono Lake. The Committee supports and works with researchers, hosts a comprehensive research library, and runs the Mono Basin Field Station to enhance the scientific knowledge of Mono Lake, its tributary streams, and the surrounding lands.

Get involved at Mono Lake

Mono Lake has a great success story, and you can be a part of it! Add your voice to the 16,000 members who are committed to the protection and restoration of Mono Lake. Your support as a Committee member will be put to work for Mono Lake.

Join us on a walking tour, Field Seminar, or custom guided trip. Check out Mono Lake online at *monolake.org* to stay connected to Mono Lake and help ensure its protection for generations to come. �



Free birding tours

- Fridays* and Sundays at 8:00AM at Mono Lake County Park
- Saturdays* at 8:00AM in Lundy Canyon
- *Reservations recommended: monolake.org/birdtour or (760) 647-6595

Magic is literally flying and flitting through the air in the Mono Basin. Join a resident expert to see everything from shorebirds to songbirds on this free tour for birders of all levels. Bring binoculars and a bird book if you have them (not required).

Naturalist notes

by Nora Livingston

alifornia Gulls fly from their nesting colony on the islets east of Negit Island to the edges of Mono Lake to forage in the shallows and along the shoreline where flies congregate, and to bathe in the freshwater flowing in from creeks and springs. One of my favorite wildlife behaviors of all time is the rhythmic stomping dance that California Gulls do to stir up brine shrimp and alkali fly larvae in the muddy shallows of Mono Lake. They stand up straight, heads held high, wings tucked neatly, while their little webbed feet rapidly stomp away in the inch-deep water. Every few seconds they dip their head down to snatch up the morsels they've drummed up. I love closing my eyes and listening to the "taptap, tap-tap, tap-tap" of their slappy beat while soaking up the summer sun. It is one of the many unique sounds of a Mono Lake summer.

This year, with a huge snowpack, fresh water abounds. Ephemeral creeks along the north, east, and south sides of the lake that are dry 95% of the time and rarely reach the lake at its low levels, are flowing-some creating small ephemeral lakes in the sagebrush that activate dry cysts of alkali fairy shrimp (Branchinecta mackini) that can be dormant for years, just waiting for a wet winter to help them hatch. These fairy shrimp are related to the endemic Mono Lake brine shrimp (Artemia monica) but they are 2-3 times as big and can't tolerate salty water at all.

Around the less-traveled sides of the lake, Snowy Plovers have laid perfectly camouflaged eggs in scrapes in the pumice berms that mark former lake levels. The adults blend in with



A male alkali fairy shrimp that hatched and grew in a freshwater ephemeral lake east of Mono Lake this spring.



A rare White-eyed Vireo, seen at Mono Lake County Park.

the beige alkali flats and hide in the shadows of depressions in the sand. When the chicks hatch, they look like fluffy speckled cotton balls with big eyes and legs too long for their bodies. These small shorebirds are so cryptic, you can scan the shoreline all the way until the heat shimmer dissolves your chances of seeing anything at all and still miss plover families who have been watching you look for them while hiding in plain sight.

After a long hard winter and a slightly delayed spring, the warmth and brightness that summer brings has an even deeper meaning to all life here in the Mono Basin. The desert peach blossoms seem pinker, the shiny new cottonwood leaves greener. The birdsong caresses the soul with more nuance-it reminds us how amazing it is to have made it through the winter, and even a single phrase of birdsong lifts the spirits enough to muster more strength for the long days ahead. Gratitude is at the forefront of our thoughts.

A few observations from late spring:

Bright orange Bullock's Orioles weaving long strands of dry grass into a pendulum nest that will be strong enough to hold several almost-full-grown nestlings in a few weeks.

Stout wildflower stems pushing snow and soft dirt aside to reach sunlight and start their brief yet fruitful life.

Mourning cloak butterflies, as big as monarchs but chocolate brown, pale yellow, and royal blue, fluttering across the lawn at County Park and perching on logs by the creek.

A rare vagrant Painted Redstart fanning its white tailfeathers out while it sings for a mate that is likely 400 miles away.

Another rare vagrant, a White-eyed Vireo, singing a quirky song at County Park while birders flock around it.

Afternoon thunderheads building massive electron castles that threaten to douse us with more water-even after a record-breaking water year, more is welcome. �

2023 Field Seminars



Rewild Yourself with Field Journaling

July 7–9 • Sue Jorgenson \$280 per person / \$265 for members

Rewild yourself by paying attention to, being astonished by, and telling about nature in the Mono Basin. There is a unique quality to the Mono Basin's geology, flora, and fauna—some would even call it magical—and it draws us into a deeper connection with nature. Sue will discuss and lead the group through several biodiverse regions—wildflowers will be a major focus, but other flora, fauna, ecology, and geology will be included in our perambulations. Using portable field journaling methods, we'll follow our curiosity, which will create new perspectives and deepen our own unique connections with nature.

En Plein Air at Mono Lake: Beginning Oil Painting

July 14–16 • Instructor TBD \$280 per person / \$265 for members

Painting outdoors allows an instant connection with landscape, and the textural possibilities and completecoverage quality of oil paint allow participants to portray their own feelings in their art. This field seminar is designed to be an introduction to the sometimes-intimidating subject of oil painting for those who want to learn oil painting outdoors. With demonstrations, individual instruction, group discussions, and plenty of humor, we will discover the tools, techniques, and some of the challenges of the outdoor oil painter. Learn to transfer the feeling of where you are into what you want to say.

Geology of the Mono Basin: Land of Fire & Ice July 21–23 • Greg Stock

\$250 per person / \$235 for members

From volcanic craters to glacial moraines, earthquake faults to tufa towers, the Mono Basin displays some of the most unique, spectacular, and accessible geology anywhere in the world. This seminar, consisting of field visits to the premier sites from Mono Lake to Tioga Pass, will present in understandable fashion the geologic forces that formed the diverse landscapes of the Mono Basin.

Communing With(in) Nature

July 28–30 • Bree Salazar \$40–80 sliding scale, by application only

This naturalist-led field seminar will visit the varying ecosystems of Kootzagwae (the Mono Basin) and Payahuunadü (Owens Valley) to learn about local natural history, regional environmental/Indigenous-led movements, and ways to feel more connected to and grounded on the land. Activities may include hiking, birding, nature journaling,

To sign up for a Mono Lake Committee Field Seminar please visit *monolake.org/seminars* or call (760) 647-6595.

forest bathing, meditation, and community building. Whether it's your first time or your hundredth in the area, by the end of this seminar we will feel more confident and empowered to step beyond just recreation and into responsibility, while honoring each other's identities. *This seminar is specifically designed for participants who self-identify as BIPOC (Black, Indigenous, and People of Color).*

Natural History at the Edge of the Sierra

August 5 • Nora Livingston \$145 per person / \$130 for members

Natural history pays attention to all aspects of nature and widens our view when out in the forest or high desert. In this seminar, we will make our way up the east slope from Mono Lake to Tioga Pass, stopping at several locations to observe all that we find, which may include wildly colorful butterflies like the lustrous copper, hidden Sierra rein orchids in pristine meadows, and plenty of birds, from warblers to rosy-finches. This is the quintessential day in the field with a naturalist, where we will ponder the grandeur and the minutiae that envelop us in this amazing place.

Falling for the Migration: Bridgeport, Crowley, Mono

August 11–13 • Dave Shuford \$250 per person / \$235 for members

The east slope of the Sierra Nevada is a major migration route for birds traveling from northern nesting areas to warm southern habitats. As a result, August is the time of year to see late summer migrants and early arriving wintering birds in the Mono Basin, Bridgeport Valley, and Long Valley. Beginners as well as experts will enjoy this introduction to the area's birdlife found in a wide variety of habitats, from the shimmering shores of Mono Lake to lofty Sierra peaks.

Mono Basin & Bodie Photography

August 18–20 • David Gubernick \$325 per person / \$310 for members

In this seminar, we will enhance our photography skills in the uniquely beautiful Mono Basin and at the world-renowned Bodie State Historic Park. Field trips and classroom sessions will combine to cover a multitude of photographic topics, and we will visit Bodie for private, after-hours evening access. This seminar is designed to enhance our picture-taking abilities in a supportive learning environment. In addition to mastering the technical aspects of creating images, we will explore the artistry of photography with an emphasis on composition.

Late Summer Birding

August 26–27 • Nora Livingston \$195 per person / \$180 for members

As birds fly south for winter, people often wonder: "Where exactly are they going? Where are they coming from? How long does it take them to get there? How do they know where to go?" This seminar strives to answer those questions during a fun time in the field observing these lightweight travelers as they fuel up along the way. We will focus on shorebirds, but there will be plenty of songbird migrants to see as well.

Mono Basin Tree Identification

September 2 • Nora Livingston \$145 per person / \$130 for members

From cottonwoods and willows along creeks to gnarled windswept pines high in the mountains, the Mono Basin and adjacent mountains provide a wonderful gradient upon which to look at trees and tree-like shrubs in their plant communities. There are plenty of trees to learn about and celebrate here in the Eastern Sierra. This one-day seminar will delve into the diversity of trees in the Mono Basin and their identifying traits. We will take time to examine and observe the trees to help ingrain the knowledge into our senses.

Los Angeles Aqueduct Tour

September 3 • Robbie Di Paolo & Maureen McGlinchy \$145 per person / \$130 for members

The Mono Basin extension of the Los Angeles Aqueduct began exporting water 350 miles south to the City of LA in 1941. Today, the aqueduct must balance competing needs for this water instead of exclusively serving one. During this seminar, we'll visit all the major aqueduct facilities in the Mono Basin and learn about their modern relationship with Los Angeles, Mono Lake, and the lake's tributary streams. We will discuss past and present diversions, and see how 20th century infrastructure is serving 21st century water needs. This seminar will provide a great overview of the Los Angeles Aqueduct, and a few of the historical, engineering, and ecological anecdotes that make up this fascinating water infrastructure.

Eastern Sierra Volcanism

September 8–10 • Claire Landowski \$250 per person / \$235 for members

The Eastern Sierra is a fascinating and exciting place to learn about volcanoes and to experience the volcanic history of the region. Over two days this seminar will explore some of the world-class volcanic features in Mono Lake's backyard. At Hot Creek we'll imagine the catastrophic eruption of Long Valley Caldera and observe its remnants; at the Mono-Inyo Craters we will hike through spectacular obsidian and pumice deposits; and in the north Mono Basin we will envision underwater eruptions. Whether you are a casual observer of landscape or an avid rock nerd, this seminar will deepen your understanding and appreciation of Eastern Sierra geology and natural history.

Mono Basin Landscape & Night Photography

September 15–17 • Jeff Sullivan \$310 per person / \$295 for members

Early fall is a special time in the Mono Basin, with fall color beginning, Sierra Nevada peaks catching morning alpenglow, and afternoon cloud formations for potential sunset color, often yielding to clear skies for night photography. This seminar will cover best practices for composing and capturing stunning landscape and night sky photographs. We'll also spend time learning how to anticipate and plan for great sunrise and sunset shots and how to use composition and light for greater impact in every photograph. When we're not out photographing in the field, we will have discussions and demonstrations on post-processing indoors to refine our skills.

Geology of the Mono Basin: Land of Fire & Ice

September 22–24 • Greg Stock \$250 per person / \$235 for members

See the July 21–23 description on page 17.

Arborglyphs & Aspen Natural History

October 7-8 • Richard Potashin & Nancy Hadlock \$195 per person / \$180 for members

A century of sheep grazing brought Basque sheepherders into the Mono Basin's aspen-bordered meadows, and they left numerous carvings-arborglyphs-on the aspens. Join this seminar for an enchanting journey into the aspen groves at peak color to explore this historical art form and to learn about the wildlife, insects, and birds that are drawn to this habitat. By visiting several different groves we will compare the designs and artistic and cultural content of aspen carvings. Participants will have an opportunity to document carvings using photography, pencil drawing, and video.

Mono Basin Fall Photography

October 13–15 • Robb Hirsch \$310 per person / \$295 for members

In autumn spectacular foliage and skies combine with exceptional light, presenting ample subject matter to photograph. Seminar participants will learn how to refine their own vision and best interpret it through the camera. Explore shoreline locations at sunrise and sunset, fall color in nearby canyons, and grand overviews of the Mono Basin.



The changing fall leaves are the perfect backdrop for a Field Seminar.

Field Seminar Information

Please visit monolake.org/seminars to register for a Field Seminar, see complete itineraries, and view cancellation and refund policies.

No pets are allowed on any Field Seminars. Please consider this in advance and find boarding accommodations for your pets or leave them at home; do not leave pets in your car during seminars. Service animals assisting people with disabilities are allowed on seminars and must be leashed.

Field Seminars are open to all, but Mono Lake Committee members may register early and receive discounts. All instructors are experts who have received high ratings from past seminar participants. We emphasize a spirit of learning and camaraderie in this magnificent outdoor setting for a reasonable cost. Proceeds from Field Seminars benefit research and education in the Mono Basin.

All Field Seminars and custom trips operate under Inyo National Forest and California State Parks permits.

Questions? Email fieldseminars@monolake.org or call us at (760) 647-6595.

Policy notes

by Arya Degenhardt, Robert Di Paolo, & Bartshé Miller

Wild horses further impact South Tufa

Last winter wild horses overwintered along the south shore of Mono Lake throughout South Tufa and Navy Beach. Record winter snow and poconip fog dramatically reduced public access and between 30 and 200 horses lingered in the area until spring. The impact was significant. Nearly every square yard of trail at South Tufa and Navy Beach was covered in manure, and manure piles blocked access along the boardwalk from the parking lot to the lake. Several horses died at South Tufa over the winter and their scavenged carcasses were draped between tufa towers and along the lakeshore.

Volunteer clean-up crews, including Mono Lake Volunteers, Inyo National Forest staff, and Mono Lake Committee staff worked over multiple days to remove most of the manure from the trails and shoreline to preserve access and maintain some quality of visitor experience. Even with a small and dedicated army of volunteers, it's impossible to remove all the manure, and some horses remain in the vicinity. Inyo National Forest staff removed at least two carcasses from busy trail areas.

The Inyo is working with agency partners, including the Bureau of Land Management, and preparing to revise



Several wild horses died at South Tufa during the harsh winter this year.

the 1988 Management Plan for the Montgomery Pass Herd Management Area. The Inyo is the lead agency in managing this expanding wild horse problem that has extended well beyond its original herd management area. The Inyo recently told the Committee that planning must be complete before active management occurs, yet that planning has not begun.

In addition to causing detrimental impacts to tufa, fragile alkali meadows, freshwater springs, and bird habitat, the horses present a growing public safety threat as they encroach across new range and appear on Highway 167, Highway



Thanks to record runoff, at the start of breeding season this year the DeChambeau Ponds waterfowl habitat on the north side of Mono Lake were fiilled to capacity.

120 East, and move closer to the busy four lanes of Highway 395. The Inyo is aware that the conflicts with wild horses have the potential to escalate, and there has been local support for taking actions that preserve federally protected wild horses within their designated herd management area while also protecting visitors, as well as the fragile habitat and ecological health of Mono Lake, the Mono Lake Tufa State Natural Reserve, and the Mono Basin National Forest Scenic Area.

The increased level of horse impacts this past winter underscored the urgency of taking action soon. Meanwhile, the Committee is helping to monitor horse impacts, actively maintain a positive visitor experience at the lakeshore, and keep the visiting public informed as the Inyo initiates planning and management.

Record water levels at the DeChambeau Ponds

The DeChambeau Ponds waterfowl habitat on the north side of Mono Lake started out this season strong with all the ponds at full capacity in early May. Deep snowpack at and around the ponds persisted through most of April, which translated into a large amount of surface

Continued on page 21

water that filled the ponds to higher levels than they've been in more than a decade. Notably, infrastructure improvements initiated in 2020 allow the system to maximize pond habitat in this wet year.

The Mono Lake Committee is continuing to collaborate with the Inyo National Forest and community members from the DeChambeau Creek Foundation and Beaver's Sporting Goods to monitor and identify management needs and opportunities for the DeChambeau Ponds. This summer, a volunteer monitoring program will help document infrastructure performance.

Critical to the long-term health of the DeChambeau Ponds remains the task of replacing an early 20th century artesian well that provides hot water for the ponds system. The existing well has greatly deteriorated, making it impossible to complete the full replacement of the pond piping infrastructure initiated in 2020. With funds available and waiting to be utilized, the Invo National Forest needs to initiate the environmental documentation necessary to implement the project.

In the meantime, community members, Inyo National Forest staff, and the Committee have consulted with waterfowl pond specialists to identify best management practices and strategies that could be implemented with existing infrastructure to promote increased habitat productivity over time.

Summer road construction planned for the north Mono Basin

This summer Caltrans will begin construction on the Conway Ranch Shoulders Widening project along Highway 395 between the junction of Highway 167 and the bottom of Conway Summit.

The two-mile-long project will widen the existing 2-4 foot paved shoulders to 8 feet. The project will also upgrade and extend culverts to match new pavement widths, install rumble strips, and lengthen the northbound chain installation and removal area at the base of Conway Summit. The goal of the

project is to improve traffic safety along this stretch of Highway 395.

The Committee commented on the draft environmental document in December 2021, stressing the need for a detailed revegetation plan along the multiple new fill slopes that will be constructed to widen the existing highway shoulders. Following the comment letter. Committee staff toured the site with Caltrans planners in 2022 to better understand project details and revegetation plans.

Project construction will be ongoing this summer, and travelers can expect delays along Highway 395 between the junction of Highway 167 and Conway Summit to the north.

Richard Riordan's legacy

Richard Riordan, former Mayor of Los Angeles, passed away on April 19, 2023. His practicality, foresight, and leadership were crucial in leading Los Angeles to do the right thing for Mono Lake at a critical time in the lake's storied past.

Riordan was elected the 39th mayor of Los Angeles in June 1993, arriving in the office at an important time for the Mono Lake Committee. John Hart, in Storm Over Mono, wrote, "In Los Angeles, 1993 had been a year of city government change. In June, after twenty years of Bradley administrations, Republican Richard Riordan became

mayor. Riordan, a businessman not known as an environmentalist, brought to the job an executive's virtues: dislike of waste and unresolved conflict, along with an eye to the budget."

The very next year, Riordan, the City Council, and the Los Angeles Department of Water & Power (DWP) Commission had to decide how to handle the imminent State Water Board decision that would ultimately order DWP to re-water Mono Basin streams and wetlands for fish and wildlife and raise the lake level to the ecologically sound, 6392-foot Public Trust lake level.

Would Los Angeles appeal the decision and sue the State Water Board? Fortunately for Mono Lake, Riordan evaluated DWP's numerous legal losses, unwillingness to negotiate, and refusal to accept state funding for alternate water supplies. As the Los Angeles Times said at the time, he "quickly saw the madness of all this when he took office ... " In large part due to Riordan's leadership and willingness to engage in discussions with the Committee, the City accepted the State Water Board's decision.

Riordan's legacy of helping to preserve Mono Lake for future generations through the agreement to achieve the State Water Board's Public Trust lake level continues to serve as a model for LA's leadership on the Mono Lake issue today. 🛠



Mayor Riordan speaking in 1994 at the press conference affirming the State Water Board's decision to have DWP restore Mono Lake's tributary streams and raise Mono Lake to the 6392foot Public Trust lake level.

2023 Andrea Lawrence Award honors Dave Marquart

by Lily Pastel

ommunity members and friends and family of Andrea Mead Lawrence gathered at Mammoth Mountain's Parallax Restaurant in early May to present Dave Marquart, retired Mono Lake Tufa State Natural Reserve ranger, with the 2023 Andrea Lawrence Award. Andrea was a visionary environmental leader, an Olympic double gold medalist, and a mother of five, who tirelessly pursued a principled vision of how ecological integrity, economy, and community can thrive in a way that preserves the vitality of each and enhances the whole. The Andrea Lawrence Award honors those who carry on her legacy of environmental conservation.

Dave Marquart is a revered member of the Mono Basin community. Throughout his 36-year career as a State Park ranger he served as a dedicated steward to the lands of the State Natural Reserve and shared his passion for this place with three decades of visitors. Through his interpretive tours at South Tufa, birding walks, and work with local school children, Dave inspired the next generation of Mono Lake advocates and bird enthusiasts.

Dave worked for the Reserve since its creation, starting as a volunteer in 1982. Dave's influence in the Mono Basin is felt by locals and visitors alike. He worked tirelessly to keep the Mono Basin's State Park lands open and accessible when budget cuts threatened to close parks, and he trained many interpretive guides from a variety of agencies, including our own interns at the Mono Lake Committee. If you have ever joined a guided walk at South Tufa, then you have likely been led to the shore of Mono Lake by someone Dave taught, if not Dave himself.

While tours are a great way to get to know the Mono Basin, there is something just as impactful about exploring the vast and mysterious lands in the less visited corners of the basin. As a State Park ranger, Dave was critical in managing these less frequently visited areas of the State Natural Reserve to preserve that rare sense of wonder that exists in this remote and starkly beautiful place.

Dave continues to be involved in Mono Basin stewardship as a Mono Lake Volunteer, a board member for the DeChambeau Creek Foundation, and a key organizer for the annual Mono Basin Bird Chautauqua. He continues to instruct Mono Lake Committee, State Park, Eastern Sierra Interpretive Association, and Forest Service staff in the art of natural history interpretation. Even in retirement Dave embodies the spirit of collaboration, working in synchrony with the many agencies in the Mono Basin to achieve the best outcomes for protecting and sharing this spectacular place.

The 12th annual Andrea Lawrence Award Dinner would not have been possible without the generous support of the Lawrence family and Mammoth Mountain Ski Area. Thank you also to our guests; speakers Janet and Dave Carle, Margaret Eissler, and Karen and Bob Gardner; and to this year's award recipient, Dave Marquart, for his inspiring and transformational work. Proceeds from the event support the Andrea Lawrence Fund to encourage collaboration and to inspire youth to become environmental leaders. �



Andrea Lawrence Award recipient Dave Marquart, third from left, was honored by family, friends, and colleagues for his 36 years as a State Park ranger at the Mono Lake Tufa State Natural Reserve.





ANTONIA CHIHUAHUA

A fter a long, record-breaking winter, the Mono Basin Outdoor Education Center (OEC) has thawed and another busy season is underway. This season is scheduled to have a record number of groups attending the OEC program every week from May through November. The bulk of the groups will be from the Los Angeles area—students will connect with the source of their water and experience desert and alpine ecosystems. These groups will be led by longtime Outdoor Education Center Manager Santiago with assistance from returning Project Specialist Bree and Los Angeles Education Coordinator Herley Jim.

The OEC will get a small facelift this year thanks to generous donations. A member has kindly donated the funds necessary to replace the OEC's linoleum floors, which date to 1970. Additionally, we're installing a bird sanctuary next to the outdoor dining area to further educate students about the creatures that live in the Mono Basin. Thank you to Brome Bird Care Inc., who generously donated bird feeders for the bird sanctuary. Finally, thanks to Ed Gibbons of San Francisco, the boots closet is flush with 12 new pairs of donated hiking boots, which are essential to ensure students have the proper footwear to enjoy the Eastern Sierra.

For the last few seasons, OEC participants have witnessed the shoreline at Mono Lake slowly receding. The message and focus of the program then were to highlight how drought and excessive water diversions have caused realtime, visible damage to the area. But for the first time since 2017, OEC groups will see a rising Mono Lake. They will experience the Mono Basin with creeks rushing with water. They will experience Mono Lake on a true rebound and see the potential of what it can ultimately be. The message this year will be one filled with hope.

2023 OEC groups

e are pleased to welcome these groups to the Mono Basin Outdoor Education Center this year:

- Chicano & Chicana Studies Department, California State University, Northridge (2 groups)
- Communities for a Better Environment, Huntington Park
- Cricket's Hope, Modesto
- East Los Angeles Performing Arts Magnet, Los Angeles
- East Yard Communities for Environmental Justice, Long Beach (3 Groups)
- Generation Green, Pasadena
- Hawthorne High School, Hawthorne
- Homeboy Industries, Los Angeles
- Inyo County Outdoor Program, Bishop
- Kid City, Los Angeles
- Miguel Contreras Learning Complex, Los Angeles
- ONEgeneration, Van Nuys
- Pacoima Beautiful (3 groups)
- Peace Camp Network, Los Angeles (3 groups)
- Port of Los Angeles High School
- Renaissance School, Oakland
- · Sierra Expeditionary Learning School, Truckee



Our mission is to build understanding and appreciation for the Mono Basin/Los Angeles watershed through education programs and muscle-powered recreational activity; to demonstrate that balanced solutions are possible for meeting the water needs of people and the environment; and to kindle stewardship through service projects that restore and improve the quality of the Mono Basin watershed.

monolake.org/oec

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Bequest creates opportunity to purchase west shore parcel

by Anna Christensen

ast summer, the Mono Lake Committee completed the purchase of ten acres of undeveloped land located on the west shore of Mono Lake using funds bequeathed by celebrated local writer, conservationist, and longtime Mono Lake advocate, Genny Smith.

In 2018, Genny left a generous bequest to the Committee, which allowed for future projects that honored her love for the outdoors and protection of wild places (see Fall 2018 *Mono Lake Newsletter*). As a Board member in the earliest days of the Committee, Genny was a champion for the protection of Mono Lake. Her dream of protection remains strong and her legacy now allows for this land to be carefully stewarded into the future.

When traveling north from Lee Vining on Highway 395 as it hugs the shoreline of Mono Lake, you have no doubt enjoyed the expansive view across these ten acres, which are located between the highway and the lake. Over the years, and despite having no utilities or feasible road access, this parcel has faced threats of development in direct conflict with the protections of the Mono Basin National Forest Scenic Area (see Fall 2002 *Mono Lake Newsletter*). The Committee was particularly motivated to purchase the land to bring a final end to this long-running conflict, support the integrity of the Scenic Area, and benefit the adjacent the Mono Lake Tufa State Natural Reserve—areas that were designated specifically to preserve the Mono Basin's inspiring scenic qualities. *****

state gifts provide an opportunity to create a philanthropic legacy that makes the protection and restoration of Mono Lake possible. Our legacy society, Friends of Mono Lake Forever, recognizes members who have included the Mono Lake Committee in their estate plans. To learn more about Friends of Mono Lake Forever, please contact Operations & Philanthropy Director Anna Christensen (*anna@monolake.org*) at (760) 647-6595 x112.

Winter 2023 from page 3

of California. California has perennially vacillated between dry and wet years in its climate record, but an increasingly extreme precipitation regime is showing up in climate data, with dry years getting drier and wet years getting wetter. Temperatures are trending warmer, and while last winter was colder than average it was not the coldest on record. Anthropogenic climate change, and the warming that results, mean that below-average winter temperatures become increasingly rare. When cooler temperatures do occur, they seem all the more unusual because many people have never experienced a colder-than-average winter. For comparison, statewide, there have only been two winters (November– March) since 1993 that were colder than the 1901–2000 mean average temperature: 1999 and 2023.

The probability of cold winters with heavy, low-elevation snowfall is decreasing. Warming temperatures are already making drought years drier and wet years more extreme, and warming will continue to reduce snowfall and increase rainfall at lower elevations of the Sierra. In terms of overall liquid precipitation, there is no clear trend upward or downward.

One big runoff year is not enough

What does this mean for Mono Lake, at the bottom of the Mono Basin watershed? Big winters are significant for total runoff and lake level gain. Wet years drive the level of Mono Lake upward and counterbalance the inevitable return of drought years, but one wet year on its own is not enough; two or more can contribute to real gain.

Three decades ago, the State Water Board mandated a Public Trust lake level for Mono Lake. Diversions by the Los Angeles Department of Water & Power detract from Mono Lake's upward progress during wet years and subtract from the overall progress toward its mandated level. We now understand that Mono Lake and its ecosystem can't benefit from the wet years and preserve those gains in the dry years for the long term under the current diversion and export criteria (see page 4).

Meanwhile, Los Angeles continues to sustain and increase benefits in resilience from investments in water efficiencies. As the climate has warmed and droughts have intensified, Los Angeles has become more resilient and adaptive. The city has grown, but overall water consumption is at its lowest in 50 years—and not by a little.

After this extreme winter and a rebound from emergency drought conditions, now is the opportunity to preserve this year's gains in lake level. While the combination of a very cold and wet winter may happen once in a generation, getting to the Public Trust lake level doesn't have to wait for another one. \bigstar timing, defined in their license as Stream Ecosystem Flows (long advocated for by the Committee), which help enhance specific restoration outcomes.

Few and far between

Runoff frequency is critical for understanding in part why these extreme wet years are so important to the stream restoration process. Using Rush Creek again as the example, streamflow of approximately 875 cfs is considered a ten-year flood for the Rush Creek bottomlands. But it only requires a modest increase in flow from this volume in order to reach 1,000 cfs, a 20-year flood. The exact timing of when the snow melts and the magnitude of flow it creates can therefore turn the same amount of snowpack into a ten- or 20-year flood. One of the stream processes that can only happen in extremely wet years like this year is channel avulsion, where flows overcome existing channel berms and can establish new channels. And it's only with these episodic events that the streams have the opportunity to spread water to previously arid stream reaches, raise the water table, and promote stream and meadow habitat recruitment and restoration.

Gauging restoration opportunities

We may not know exactly how large the peak flow will be this year, we may not know exactly the timing of runoff, and we don't know when a year like this will happen again, but understanding these variables is critical for understanding stream restoration opportunities. DWP's obligation to deliver Stream Ecosystem Flows that mimic natural runoff patterns is critical for achieving restoration goals. That's why the Mono Lake Committee diligently tracks the progress of runoff leading up to, during, and following each seasonal runoff period and seeks to facilitate information sharing between DWP, the Stream Monitoring Directors, and partnering conservation parties. One thing is for sure—this is a rare and exciting year for restoration on Mono Lake's tributary streams. �

Robbie Di Paolo is the Mono Lake Committee's Restoration Field Technician. He's excited to see his Rush Creek daydreams become a reality this summer.



The Mono Lake Committee tracks the progress of runoff leading up to, during, and following each seasonal runoff period, like we did in 2017 along Rush Creek, shown here. This will be a rare and exciting year for restoration on Mono Lake's tributary streams.

Staff migrations

by Elin Ljung

e're glad to welcome a crew of new staff to the Mono Lake Committee this summer. They bring excitement, growth, and renewal to the office, much like how this year's high runoff in the streams will rejuvenate the Mono Basin. Keep an eye out for our enthusiastic staff this summer in the Information Center & Bookstore, canoeing on Mono Lake, and leading tours at South Tufa, County Park, and Lundy Canyon (see pages 14–15).

Corey Farr, Office Manager, joined the staff from just down the road in June Lake, where she lives with her husband Bruce and dog Asher-Wyatt. Corey knows many Committee staff already from her summers baking delicious treats next door at Latte Da Coffee Café. Her years of experience supervising a large staff during fast-paced winters at the June Mountain Ski School will be invaluable during busy summers at Mono Lake and we're delighted to have her on board.

Project Specialist **Bree Salazar** returns this summer to bring full-circle a winter of outreach to former and potential Mono Basin Outdoor Education Center groups in Los Angeles. Bree will be welcoming and teaching many of those groups at the OEC in person and will also lead a Mono Basin Field Seminar (see page 17).

We said farewell to Project Specialist **Kristin Weiss** as spring made its belated arrival in Lee Vining. Over the winter Kristin was a great help in the bookstore, kept up several monitoring projects, and used her climbing muscles to shovel a ton of snow. She has migrated to Joshua Tree for a consistently warmer desert life.



Mara, Maureen, and Ellen discuss Mono Lake's level on a windy day.

Information Center & Bookstore Assistant Liv Chambers comes to us from Williams College, where she is studying history and geosciences. Liv has a particular interest in the ways mountain communities interact with the land they live upon, so Lee Vining is a great place for her this summer.

Teri Tracy, Information Center & Bookstore Assistant, is pivoting to a second career this summer, earning her master's degree in environmental law after a career as a probation officer in Fort Collins, Colorado. Teri's experience hiking and birding will help visitors make the most of their time at Mono Lake.

Canoe Coordinator **Juniper Bishop** is a naturalist whose Sierra experience includes working as a backcountry avian point count technician in Sequoia and Kings Canyon National Parks. Juniper's studies of botany, ornithology, geology, and more will come in handy this summer leading canoe tours.

Birding Intern **Miles Lafayette** has kept an eye on birds while playing in the waves of Half Moon Bay and Santa Cruz, and while skiing in the Sierra Nevada. After studying ecology, geomorphology, and hydrology at the University of Portland Miles is now honing in on the birds of the Mono Basin.

Lupin Amstutz, Mono Lake Intern, just finished a gap year after high school studying Spanish and playing soccer in southern Spain. Lupin grew up near Yosemite National Park and brings to the Committee her lifelong experience of scrambling through the forest, rafting rivers, and climbing granite formations.

Mono Lake Intern **Autumn Stock** also recently finished a gap year after high school, traveling and living in Indonesia, Mexico, and Costa Rica before attending Colorado College this fall. Autumn fondly remembers the trip from her home in Yosemite Valley over Tioga Pass to Mono Lake every year growing up.

Fiona Travers, Mono Lake Intern, is finishing an undergraduate degree in sustainability policy and marine science at Penn State University. As the daughter of two tropical biologists, Fiona brings to Mono Lake a lifelong interest in the environment and conservation, plus worldwide experience working as a scuba instructor.

Mono Lake Intern **Kenna Williamson** is in her second year of college at the University of Oklahoma studying journalism and environmental sustainability. Kenna grew up on the Great Plains and was captivated by the dramatically different landscape of the Sierra Nevada during her first trip away from home. �

Elin Ljung is the Committee's Communications Coordinator. She waited excitedly for the lilacs to bloom this spring, which took a few weeks longer than usual after the big winter.



From the mailbag

News from members and friends

by Leslie Redman

Whith winter in the rearview, the Mono Basin has sprung back to life. Be it the annual return of seasonal visitors—tourists and travelers, migrating birds and wildlife—or the long-awaited revival of lagoons and dormant species, this summer at Mono Lake is turning out to be as extraordinary as the winter that preceded it. Those who treasure Mono Lake know that making the trek out to this special place, home to a thriving ecosystem of algae, alkali flies, brine shrimp, birds, and more, can be a surreal experience during a "normal" year. But this summer has given us the opportunity to experience an abundance of life rarely seen in the Mono Basin.

Thanks to all who donated in honor or in memory of friends and loved ones. Your support is what makes our work possible.

In honor

Jayne DeLawter of Santa Rosa donated in honor of Penny Docker. Heidi Hopkins of Big Sur contributed in honor of retired Mono Lake Tufa State Natural Reserve ranger and Andrea Lawrence Award recipient Dave Marquart. Margaret Lohfeld of Los Angeles donated in honor of Martin Engel. Patricia Trudeau of Albany, NY gave a gift in honor of Marina Lindsay.

The 8th Judicial Probation Department of Fort Collins, CO gave a gift in honor of Teri Tracy, who joins our seasonal staff this summer as an Information Center & Bookstore Assistant. Peter Vorster of Oakland contributed in honor of the Mono Lake Committee staff for surviving the winter of 2022–2023.

In memory

Allan Brown of Portola Valley donated in memory of Marilyn Brown. Dorothy Dechant of San Pablo, Dr. Laszlo Fodor of Stockton, Annie Harvey of San Mateo, and Amy Skryja of Alamo gave gifts in memory of Dr. Raymond Skryja. Maria Francaviglia of Santa Clarita contributed in memory of Decimo & Rose Francaviglia, who loved bringing their family to visit Mono Lake. Randy Frank of San Anselmo donated in memory of Gay Palmer Frank. Chris Huson of Mill Valley gave a gift in memory of Ellen Cosin. Vickie LaBraque of Bishop contributed in memory of Robert Jerome LaBraque.

Melvin & Frances Leo of Upland donated in memory of Dr. Gregory Leo. Tom Love of Oakland gave a gift in memory of Rebecca Love Gerondale. Christine Lozoski of Big Pine and Jane Askin Wright of Bishop contributed in memory of Bil Askin.

Bob Mandel of Alameda donated in memory of Tanya & Bill Mandel. Carol Mathews of Walnut Creek gave a gift in memory of Robert Mathews. Yvonne McHugh of Richmond contributed in memory of Yvonne S. Higgs McHugh. Sister Mary Miller of Lucerne Valley donated in memory of Ralph Waldo Miller. Tom Parrington of Sonora gave a gift in memory of John Petter. Mark Perry of Bakersfield contributed in memory of Elinore Patterson. Phillip Roullard of San Diego donated in memory of Edith Gail Roullard. Ben & Val Smith of Vacaville gave a gift in memory of Jerri Smith, an avid hiker of the Sierra. Katherine Stanford of Medford, OR contributed in memory of Ray Stanford. Ray Sundberg of Guerneville donated in memory of Elaine Sundberg. Stephen Tillinghast of Arcata gave a gift in memory of Mary Tillinghast. Elaine White of Bakersfield contributed in memory of Mono Lake Committee co-founder David Gaines. Jeff Wilson and Anne Scheer of Port Costa donated in memory of Dave Steidel. *

Leslie Redman is the Committee's Membership Coordinator. Local trails are melting out and Leslie can't wait to get back into the high country.



The extent of the plowing on Tioga Pass on May 14, 2023. We look forward to greeting more members here at Mono Lake once the pass opens for the season!



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