

MEMBER SURVEY: license plate fundraiser

Mono Lake Newsletter

Summer 1994

Volume 17, Number 1

The Mono Lake Committee

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IN THIS ISSUE

Wetlands, riparian systems, and Mono Lake continue to be issues of concern. While we wait for the Water Board decision (see page 4), other projects continue to move forward. An update on stream restoration on is on page 5. Habitat restoration at DeChambeau Ranch is underway; page 15 offers a brief introduction. Watch for developments on these topics in future issues.

"Science Updates" are the featured articles in this issue. Look on pages 14–21 for detailed information about California Gulls, waterfowl at Mono Lake, the alkali fly, the MLC plan for raising the lake, the condition of riparian vegetation, DWP's conclusions about Mono Lake's "health", and historic wetlands and lagoons at Mono Lake.

The Water Board decision is on the horizon and the fall *Newsletter* will offer a full assessment. In the meantime, celebrate summer; visit the lake, smell the wildflowers, and enjoy the fiery sunsets

- Geoff McQuilkin



An abandoned deep-water stream channel in the Rush Creek bottomlands. Someday, it may carry water again due to restoration efforts.

The Mono Lake Committee is a non-profit citizens' group dedicated to saving Mono Lake from the excessive diversion of water from its tributary streams. We seek a solution that will meet the real water needs of Los Angeles and leave our children a living, healthy, and beautiful lake.

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This newsletter is partially funded by a grant from The Mono Lake Foundation, a non-proexempt organization dedicated to studying and protecting the Mono Lake watershed. Donations to the Mono Lake Committee or the Mono Lake Foundation maybe made using the enclosed envelope.

⁽⁾Turning paper into water

by Geoffrey McQuilkin



here was a little bit of wildness in Lee Vining Creek this spring. It wasn't much, just enough to Cirta that creek restoration, though Consuming, is worthwhile.

I was walking the edge of the creek with a friend, watching fresh snowmelt slide past, when we found it. Through a patch of wild rose, a thin channel of water made its way over gravel toward the lake, sparkling in the sun as it wove a path around wildflowers. Looking closer we could see that the water was coming from a nearby channel and contouring across formerly dry ground. The stream was exploring the flood-ravaged, fire-damaged place that used to be its domain.

When you walk Lee Vining Creek you can discover natural processes like this, but they're written onto a tablet of diversion-caused damage. The creek tells the story of 45 waterless years at every turn, every earth-scoured cobble bar, every shallow stream-run, every bird searching for a tree. Someday, though, the creek will show what creeks do cascade, pool, flood, nourish — and not what humans have done. The exploration of the creek onto new ground was a

nder of that.

The creek's exploration was also a reminder of the work and struggle it has

taken to transform court orders from paper into wet ground. For the spot where the creek was running wild was at the edge of a historic stream channel, a channel carrying water only because backhoes cleared its entrance of boulders and debris. It has taken eight years to get the restoration program this far.

When the Committee won water for Lee Vining Creek back in 1986 we were only part way through a long process; the court order was a high point on an everlengthening path to see the streams healthy again. After winning the water, we went on to fight over the damage done by grazing on the creeks. And when that was resolved, plenty of issues remained: how to monitor the recovery of fish populations, whether to dig pools for habitat, if revegetation is worthwhile, whether to rewater historic channels way. But in the real world of politics, personalities, and legalities, environmental victories aren't real until you can read them in the landscape. The true successes are all in implementation. The restoration order won't be a fulfilled victory until we see the restored creek rambling by, tossing off rivulets at its own inclination.

And the Water Board decision, so close on the horizon, will just be paper until the lake rises. There are so many ways to thwart, obscure, and misdirect legal decisions; you can win in the courtroom and never see anything in the field. Especially, I realized, if DWP — an expert at the diversion of water and intent, chooses to stand in the way.

The day after walking the creek I had the chance to look at some recent aerial photos of the same area. I traced

... environmental victories aren't real until you can read them in the landscape.

The list is always long.

Opening the gates and letting water back into the creek in 1986 took only minutes, but seeing the creek restored to health has taken — and will take years. Turning legal documents into pools and channels has become a whole saga of its own, longer than the story of obtaining the court order in the first place.

In isolation, by themselves, the legal decisions that start processes like restoration seem to be absolutes, clear victories, vindications. They are, in that isolated the patterns in the film grain with my finger and found it, that wild piece of the creek, captured in black and white, locked in by chemicals, ready for analysis. I had thought it would bother me to find the creek controlled in this way, but it did not. The information needs to be there; the court victories for Lee Vining Creek began in 1986 but we're still playing the intricate game that turns them into on-the-ground habitat. The photos, and research, and work, are part of it and will be, for a long time.

Water Board deliberating Mono's future

ot without a few surprises, the record has finally closed for the State Water Resources Control Board hearings on the amendment of Los Angeles' rights to divert water from the Mono Basin.

The final legal briefs were filed in early May, but the rebuttal brief filed by the Department of Water and Power (DWP) created controversy into June. The brief, almost twice as long as their closing brief, was supposed to respond to the closing arguments presented by other parties. Instead, DWP took it as an opportunity to introduce new evidence into the record.

The Mono Lake Committee, National Audubon Society, CalTrout, and other parties objected to the transgression of the rules. While most parties requested the Water Board strike portions of the document from the record, the Mono Lake Committee filed a surrebuttal brief, addressing the new



All parties will have the opportunity to raise questions they have about the Water Board's decision before Judge Terrence Finney.

points raised by DWP.

DWP introduced new material in several areas. They claimed "vested" water rights in the Mono Basin — a claim dismissed by the Supreme Court in 1983, Committee attorneys pointed out. They argued that the Water Board may not legally order the rewatering of Mill Creek (see Newsletter spring



With the hearing record now closed, the State Water Resources Control Board is deliberating on the amendment of Los Angeles' water rights.

1994, pg. 7) as mitigation for other damages caused by diversions — a misinterpretation of the legal basis for the proposal. They contended that ducks and

waterfowl are unlikely to return in large numbers to the lake — using an argument which disregards the special characteristics of waterfowl habitat at Mono Lake. DWP also introduced new data on air quality — data which Committee attorneys found to be statistically invalid.

The Committee dismissed DWP's new information in a strongly argued response to the new points. "DWP's Rebuttal Brief deserves skepticism," Committee attorneys concluded. "Legal arguments are made for the first time in the presumed hope that they would have a better chance of survival than if their faults were identified. Evidence is sought to be introduced after the close of evidence knowing that it could not otherwise endure the scrutiny of cross-examination. In short, if the arguments had merit, they would not have appeared for the first time in a reply brief."

Although the Water Board allowe most of DWP's brief to stand as written, they did choose to strike portions of the document from the record. They declined, however, to accept the Committee's surrebuttal brief or any other briefing on the issues introduced by DWP, noting that the record is closed to such materials "in the interest of producing a timely decision."

The Water Board is expected to release their draft decision sometime in August. After a brief comment period, the final decision will be released along with a final version of the Environmental Impact Report (EIR). Because the Water Board and the courts have concurrent jurisdiction over the amendment of DWP's licenses, parties to the proceeding will then have a chance to raise concerns they may have with Judge Terrence Finney of the El Dorado Superior Court. Judge Finney presides over the court cases filed to protect Mono Lake and its tributary streams.

No one yet knows what sort of de sion the Water Board will reach. "The Water Board is carefully and

Restoration to focus on Rush Creek

The focus of restoration work on Mono Lake's tributaries is turning to Rush Creek this year. "Rush Creek has seen relatively few restoration projects compared to Lee Vining Creek, but a number of opportunities have emerged for restoring fish, riparian, and wetland habitat on Rush Creek," observes John Cain, the MLC representative to the Restoration Technical Committee (RTC), which directs restoration work on Mono Lake's tributary streams.

The challenge is to restore the formerly extensive network of channels and wetlands that existed in the Rush Creek "bottomlands." Historically, the bottomlands were an area of high biological productivity, characterized by over 200 os of dense woodlands with numerous am channels, active springs, and areas of slow-moving water. The bottomlands provided excellent habitat for fish, mammals, and waterfowl; in recent years, however, they have been damaged by streambed incision.

The combination of low lake levels and uncontrolled flood releases in the

1960s and 1980s caused Rush Creek to cut down, or incise, into its own streambed, lowering the elevation of the creek by up to forty feet (see photo in Newsletter spring 1994, pg. 7). This incision drained adjacent wetlands and caused widening and straightening of the formerly deep, narrow, and sinuous creek channel.

Fortunately, many of the historic channels which were abandoned during the floods are still intact and can be rewatered. This year, two channels will be rewatered on a pilot basis to determine the best manner for rewatering other channels in the future. The rewatering of channels could have tremendous benefits for expanding the riparian forest, increasing the acerage of wetlands, and creating fish habitat.

Another interesting possibility in-

>> deliberately reviewing the information," commented Mono Lake Project Coordinator Jim Canaday in late April, "realizing that there is no one lake level that maximizes all the issues."

The decision will be based on the extensive material gathered by the Water Board. The volume of information is daunting: a three volume EIR, over forty days of testimony, and hundreds of exhibits, making the Mono Lake case one of the most detailed the Water Board has handled.

"These have been the longest hearfor water rights ever, to my knowle, outside the Bay Delta," Canaday commented. "But we're fortunate that so much information is available," he concluded. "It takes a long time to review but leaves a lot less to speculation."

When it arrives, the Water Board decision is expected to be complex document subject to some interpretation. The Board must address Mono Lake's health by setting a required lake level, but it must address a host of additional issues as well.

The Water Board must establish a procedure for achieving and maintaining the lake level they identify (see the MLC's proposal on page 17). They must also establish stream flows to comply with the Fish and Game Code, consider restoration measures on the four Mono Basin creeks diverted by DWP, evaluate mitigation measures such as rewatering Mill Creek, decide how to monitor



Members of the Restoration Technical Committee examining watercress for the "scuds" — small freshwater shrimp — that were once exceptionally plentiful in the bottomlands springs of Rush Creek.

volves recharging springs in the bottomlands. Historically, these springs benefited the fishery by moderating the temperature of Rush Creek and providing nutrients. The RTC is currently considering whether recharging the springs will be possible.

"The Mono Lake Committee, and I think the RTC as well, hopes to adopt a final conceptual plan for Rush Creek restoration by this fall so that an extensive work program can be implemented next summer," concludes John Cain.

changing conditions, and produce a plan for enforcement of the order.

In addition, the Board will decide whether to designate Mono Lake an Outstanding National Resource Water (ONRW). The ONRW designation, which stems from the Clean Water Act, would create an additional layer of protection for the lake by setting a maximum salinity threshold.

In order to address these issues comprehensively, it is expected the decision will be a lengthy document. There are likely to be complex portions which will be subject to debate over interpretation. Thus implementation of the Water Board decision may take years.

Mono Basin Journal

A roundup of lesser-known events at Mono Lake by Geoffrey McQuilkin

T he drawn-out days of late spring make winter snows hard to believe; a reminder arrived late in May, however. Fourteen inches of snow dropped into Lee Vining in a day and a half, causing great consternation among the robins, red-winged blackbirds, and tourists, all of whom carefully time their visits to avoid such weather.

Gulls flew in circles over town in frustration; they tried to land on what had always been solid phone poles and, beginning to sink into a foot of snow, would flap away in con-



A late May storm brought 14 inches of snow to Lee Vining, coating apple blossoms and causing confusion among gulls.

fusion. Trees, covered with new spring leaves, captured more than their usual share of snow and bent to the ground. The storm buried all the spring growth, a reminder of what sets the rules, and who just tries to guess what they will be.

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Now spring, and summer, have arrived. Bulging thunderclouds climb invisible ladders over the Basin and virga sweep the horizon. Jupiter's moons put themselves on display at night with the Milky Way. And, just recently, sparkling spiders of gold and silver tiptoed on the Sierra crest as Fourth of July celebrations reached their peak.

Despite a wet May, lake level will fall

P recipitation came late in the season to Mono Lake, too late to raise the lake level much this year. Although May brought record wetness to the Mono Basin, the runoff totals are down to drought-year levels again.

May turned out to be the wettest on record for the Mono Basin, a surprise in this otherwise dry year. Rain came throughout the month, and a surprise late-season snowstorm dumped 14 inches of snow in Lee Vining, burying already-blooming spring flowers.

Today, Mono Lake stands at 6375.6 feet above sea level, up just a tenth of a foot from the spring *Newsletter* update. We can now expect the lake to fall at least six inches over the course of the year.

The landbridge to Negit is still a prominent Basin feature and, despite a small channel of water, offers coyotes easy access to California Gull nesting grounds. For the second year in a row the nesting islet called Java was raided by the predators; no eggs or chicks were found left among the tracks. Only fifty yards from Java is Twain islet, home to 50% of the lake's gull colony. The coyotes haven't made it there yet...



The landbridge still dominates the view of Negit Island. A small, shallow channel of water separates Negit from the mainland, but it's not enough to stop coyote predation of gull chicks.

Mono Lake Newsletter -

Dance of the Sage Grouse

by Julie Clothier

Standing on a rocky precipice in the cool predawn stillness of an early April morning, surrounded by the dark outlines of the rolling Bodie Hills and a sky full of fading stars, I close my eyes and listen intently.

Not even a breath of wind across the sage breaks the silence. Cupping my ears and slowly turning to listen in every direction, straining for even the slightest sound, I hear it . . . far below and rising softly, a gentle purring coo. The call of the sage grouse floats upward just as the sun begins to climb over the eastern horizon.

"I see them!" calls Geoff, peering through the spotting scope. Soon we are stealing down the brushy slope, moving carefully and quietly in the growing "it. On a low hill overlooking the aring below, we settle in to witness an ancient ritual of courtship.

Year after year, sage grouse return to their traditional site, the lek, where the males perform a ritualized dance. With their tails fanned and wings held out, males inflate neck sacks and, throwing their heads back, deflate the sacs with a loud popping sound. Females approach the lek, select a male with whom to mate, and then leave to nest and rear the young alone.

Biologists believe that sexual selection such as this may help to insure the genetic superiority of offspring. Studies of sage grouse reveal that males hold specific territories on the lek and that the dominant male usually holds the central position. A male's position on the lek determines his success at attracting and mating with females, the central male mating with the most females. Through successive breeding seasons, surviving males move from the periphery toward the center of the lek and the older and

dier males thus sire the next generation. With the lek spread out below, I see the grouse claiming their territories.



Those on the periphery dance as fervently as those in the center, more so perhaps, practicing in earnest for the next year. One male dances alone, down in a gully, partially obscured by brush, barely visible. Individualist or outcast, I wonder.

The sun is well past the horizon now, bathing the hills in golden light, and still the grouse dance on. Reluctantly, I turn and make my way back up the slope, reflecting on the vulnerability of these dawn dancers. Dependent almost exclusively upon sagebrush communities, the sage grouse is threatened by habitat loss and herbicide ingestion and has been extirpated from much of its former range, especially in the Northwest. As human "progress" continues to alter the

land, from the diversion of water to the conversion of sagebrush to rangeland, the cost to wildlife becomes immeasurable. And, although most of us live separated from it, human survival itself is inexorably linked to wilderness protection. Wildlife conservation insures human survival. The dance of the sage grouse holds the promise of life for us all.

Julie Clothier is the Committee's new Sales Operations Coordinator.

Fundraising Events

Ninth annual Wine Cellar Drawing a success

Brown Pelicans skimmed the windy surf below the Golden Gate Bridge as, behind the windows of the St. Francis Yacht Club, the ninth annual Fine Wine Cellar Drawing and Dinner got underway. The event, held on May 21 in San Francisco, raised over \$25,000 for the protection of Mono Lake by the end of the evening. Over 150 supporters filled the tables for dinner, and over 400 drawing tickets were sold.

The Wine Cellar Drawing raises funds for the protection of Mono Lake by raffling off donated wine cellars. Participants who attend the drawing are also treated to a wine tasting.

In addition to raising funds, the event honored George Peyton, the second-ever recipient of the Mono Lake Committee's annual Defender of the Public Trust award. Peyton, a long-time Monophile who rallied the National Audubon Society behind Mono Lake and the original Public Trust lawsuit, received the award this year.

In accepting the award, Peyton, a former Director of the National Audubon Society, recalled the early days of the Mono Lake issue. Working with Committee founder David Gaines, Peyton



George Peyton received the MLC's annual Defender of the Trust Award, the second ever presented. Peyton, a true Monophile, rallied the National Audubon Society behind the initial public trust lawsuit to protect Mono Lake.

convinced the National Audubon Society to prioritize Mono Lake litigation in 1979.

Also speaking at the event were Bruce Dodge, the lead attorney for the Committee and National Audubon Society; Ken Alexander, former editorial cartoonist for the *San Francisco Examiner*; Harold Gilliam, recipient of last



The Ninth Annual Fine Wine Cellar Drawing and Dinner took place on May 21. The event, which raises money to save Mono Lake, was well attended.

year's award; and Martha Davis and Ed Grosswiler, respectively Executive Director and Board co-chair of the Mono Lake Committee.

Alberic and Grace de Laet, who put together the first Wine Cellar Drawing, drew the winning raffle tickets for this year's wine cellar winners. Four cellars, valued at \$500, were given away. The winners are: Claudia Robertson, of Portland, Oregon, who won cellar I; Virginia B. Geeslin, a San Francisco resident, who won cellar II; Roger Vrilakas, from Portland, Oregon, who won cellar III; and Sandra McDonough, also of Portland, who won cellar IV.

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A special drawing was also held for participants; the following attendees were lucky winners: Lynn Chiapella, from Palo Alto, won a stay at Bodega Bay Lodge. Bahman and Charlotte Sheikh, who live in San Francisco, won a getaway at Casa Munras Hotel while Alison Davis, of Palo Alto, received a two-day stay donated by the Inns of Monterey. The Resort at Squaw Creek offered a weekend for two which was won by Nancy and Dick Fouquet, of Los Altos Hills. And a special additional wine cellar was won by Mrs. J. Wiley of San Francisco.

Event coordinator Tina Sanders offered special thanks to all the sponsors and volunteers who made the drawing possible. Guy Kay and Herb McGrew arranged the wine donations and assembled the cellars. See's Candy provided truffles for dessert, and wine donations came from Beringer Vineyards, Cakebread Vineyards, Codorniu Napa, Corison, Cuvaison, Domaine Chandon, Ferrari Carano, Frog's Leap Wine Cellars, Guy and Connie Kay, Maison Deutz, Dr. Montie Magree, Herb and Linda McGrew, George Peyton, Robert Mondavi Winery, Rosenblum Cellar Schramsberg Vineyards, St. Supery, and Sterling Vineyards.

Mono Lake Newsletter



New T-shirt designed by member

by Rick Knepp

T ime and again, the Mono Lake Committee membership has risen to the occasion when called to action in our efforts on behalf of the lake and its ecosystem. You've ridden bikes, written letters, spoken out, spent big bucks, picketed, purchased wine ... so it came as no surprise to find that you have designs on us — literally!

In the winter *Newsletter*, we asked members and supporters to submit their ideas for new T-shirt designs. We received a gratifying response.

Tom Berto, a member since 1988, as in the midst of what he says was "an extremely rare, unexpectedly boring staff meeting" at Hewlett Packard in Santa Rosa, where he serves as a mechanical engineer, shortly after reading the appeal. He found himself playing with design ideas on his laptop computer. The resulting shirt — dubbed "Night Tufa" — has been a top seller since its debut in early June.

The shirt (shown at right) depicts stylized tufa and the Sierra in shades of gray and black against a starry summer sky of deepening blue, all reflected in the lake's waters and printed on a highquality preshrunk white Tshirt. The accompanying text offers information on how to become involved in the fight on the lake's behalf. The shirt is our featured item this summer and is available for \$16.00. (Use the order form below or phone/fax your order.)

Other designers also came to our aid and thanks go out to all who submitted ideas. Two

vendors, Designs Unlimited and Darnell Designs, donated many hours of time and presented us with a number of concepts, two of which are now shirts available in the Information Center and Bookstore. Watch for them in the 1994–1995 Gift Catalog.

In Pasadena, an entire class, under the instruction of Maria Soler at Webster Elementary School, sent beautiful artwork for consideration. While



MLC member Tom Burto designed the above T-shirt, available by mail order for \$16.00.

budget constraints prevented development of a shirt, Public Education Coordinator Stacey Simon worked with Maria, and the class visited the lake under a new program bringing inner-city kids to this precious natural resource. Many will be leaving their urban environment for the first time.

Rick Knepp is the MLC's Sales Manager

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Join us for the Annual Meeting of the Mono Lake Committee

by Colin Saunders

Events

The State Water Board will decide Mono Lake's future at the end of summer, and what better way to get the scoop than at the Mono Lake Committee's 16th Annual Meeting on Saturday, September 3. All Mono Lake supporters are invited to this event. And for those planning to spend the Labor Day weekend at the lake, special activities for attendees include a morning bird walk and creek restoration tour (depending on interest), canoe tours, and of course the daily sunset walks at South Tufa.

For Saturday morning, the bird walk and the creek restoration tour provide an excellent opportunity to reacquaint yourself with the lake. Bird enthusiasts and laypersons alike can talk "bird" with expert ornithologist Dave Shuford at Mono Lake. Then take a relaxing tour alongside Lee Vining Creek and find out how the historic stream habitat is being returned to health by restoration efforts. Meet at 8:00 A.M. at the Mono Lake Committee's Information Center and Bookstore for the bird walk and 10:00 A.M. for the creek restoration tour. Call (619) 647-6595 for reservations.

Every Friday, Saturday, and Sunday, our canoe tours lend a watery approach to the Mono Lake experience. Paddle next to gulls, grebes, and plumes of brine shrimp as you learn about the lake from the lake's point of view. Finish off your day with the sunset walks at South Tufa — and prepare for some awesome ambience. Canoe tours start at 8:00 A.M., 9:30 A.M., and 11:00 A.M., and the sunset walks begin at 6:00 P.M. Reservations must be made for the canoe tours.

"It's a great way of visiting Mono Lake," says Martha Davis, "but with a twist ... it's an opportunity for people to see the lake in a way they have never seen it."

After supporters have joined with the Bike-A-Thon cyclists for the rehydration ceremony at the Old Marina, the Annual Meeting will then convene at County Park for a picnic (bring your own lunch) and guest speakers. Our own Executive Director, Martha Davis, will be cycling this year as well as speaking about the State Water Board's decision and the future of Mono Lake.

"After 10 years of working with the Mono Lake Committee, the opportunity to carry this symbolic amount of water from L.A. to Mono Lake means a great deal to me, especially as we wait for the Water Board decision which will so profoundly affect Mono Lake's future," says Davis. "It's a ride in which you physically experience the impact of water in the Eastern Sierra."

After the speeches, including the second half of Martha's "workout", the meeting will kick into gear with dancing to some original, environmentally tole ful tunes by the High Desert Band.

Colin Saunders is a summer intern with the MLC. \checkmark

Bike-A-Thon riders to be joined by Martha Davis

Mono Lake Committee Executive Director Martha Davis will pedal her way from Los Angeles to Mono Lake this year on the 15th annual Bike-A-Thon. Up to one hundred riders will join her on the 350mile journey which is the Committee's largest fundraising event.

Bike-A-Thon riders carry vials of water dipped from the reflecting pools at the Department of Water and Power headquarters. The water is poured back into the lake at the conclusion of the ride in a Rehydration Ceremony.

You can support the riders with a permile donation — watch your mailbox for the MLC's upcoming Bike-A-Thon mailing and further details.

If you'd like to participate, there are still spaces left. To become a part of the journey — by riding or assisting — contact Tina Sanders in the Committee's Burbank office at (818) 972-2025.

This year's ride will begin on Monday, August 29, at DWP headquarters and arrive at Mono Lake on Saturday, September 3. All it takes to participate in the 'Thon is a bike and an interest in protecting Mono Lake (although we recommend some training, too). The Bike-A-Thon is not a race or a competition; while some riders routinely cycle

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hundreds of miles a week, others simply ride for recreation. The Bike-A-Thon is the group effort of committed individuals who want to make a statement about Mono's destruction and raise funds to stop it. And if you don't feel up to riding in the 'Thon, consider helping out as part of the support team that travels the Highway 395 route with the riders.

Bike-A-Thon riders raise money for the Committee by gathering sponsors for their journey. At least \$300 in sponsorship is required of each rider; many raise over \$1,000 each. The Committee provides r stops with water and snacks, campsites, support vehicles, and some meals.

Mono Lake Newsletter

Is there a Mono Lake license plate in California's future?

License Plate Survey



What in the world is a Mono Lake \icense Plate?

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A Mono Lake license plate would be an official license plate issued by the Department of Motor Vehicles for automobiles registered in California. The plate would be distinguished by a "full-color graphic scene" depicting Mono Lake (see concept design above). The Mono Lake Committee would benefit financially through the sale of these special plates.

How does the Mono Lake Committee benefit?

The Mono Lake Committee would get a portion of the fees collected from the sale of these plates. In addition, MLC would be guaranteed half of the annual renewal fee. Most of this fee would be a tax-deductible charity donation. Further, these special license plates would show other motorists — throughout California and wherever you drive — your desire to Help Save Mono Lake.

How much would these Mono Lake License Plates cost?

Initially, the plates would cost approximately 30 to 60 dollars. Renewal fees would be approximately one-half of the initial cost. Personalized plates would also be available for a slightly higher fee.

What can I do to make Mono Lake License Plates a reality?

You can help put Mono Lake license plates on your automobile by filling out and returning the informational survey below. Before we can proceed, we need to show that at least 5,000 people are interested in this program. We need members like you to show their enthusiasm by returning the survey below. This is no small task, as you may imagine. If there is sufficient interest, we will proceed. Please help us by returning the survey today. Help Save Mono Lake and put <u>Mono Lake License</u> Plates in California's future.

Here is my Mono Lake License Plate survey!

- 1. Besides myself, I know _____ others interested in purchasing a Mono Lake license plate.
- 2. I think I could help sell _____ more license plates to friends, relatives, and business associates.
- 3. I would be willing to pay \$30 \$40 \$50 \$60 in additional fees for a Mono Lake License Plate.
 - ____ This is a great idea–what can I do to help?

Name:			· ·	
Address:				
City:	ч. 		State:	
Telephone: ()		Zip code:	
26841 Oal	c Hollow I	Road, La	tor Vehicle License guna Hills, CA 92 ax: 714/367-0505	

Summer 1994

SUMMER AT

Explore the Mono Basin!

ummer brings a wealth of recreational opportunities to the Mono Basin and surrounding area. Visit Mono Lake's shore, sign up for a canoe tour, or take some time to go birdwatching.

To learn about all the activities in the Basin, stop in at the Mono Lake Committee Information Center and Bookstore. Here are some of the highlights:

Committee naturalists lead South Tufa walks daily at 6:00 P.M. A special photo walk begins at sunrise every Sunday morning. Watch for special evening programs as well!

The Forest Service offers numerous programs, including South Tufa walks, patio talks, and Panum Crater hikes — look for information posters in Lee Vining.

Hour-long canoe tours depart every Friday, Saturday, and Sunday morning. Make reservations at the Mono Lake Committee.

Discover the Mono Basin on your own for a day. Take a stroll along the Lee Vining Creek trail with one of the Committee's new interpretive brochures. Or just head off and explore the lakeshore.

When you're in Lee Vining, be sure to visit the Mono Basin Historical Society's Schoolhouse Museum (hours 11:00–5:30). And don't miss the Forest Service Visitor Center, which offers educational displays about Mono Lake.

Nearby attractions include historic Bodie Ghost Town (\$5 admission per car), Yosemite National Park (\$5 per car), the scenic June Lake loop road, Devil's Postpile, and High Sierra hiking trails.



Mono Lake!



Visit the Mono Lake Committee Information Center and Bookstore

ust a year ago MLC staff, a handful of volunteers, and our contractors were furiously working to beat a late June deadline for the completion of the remodel of the Committee's Information Center and Bookstore.

This spring, instead of building new shelves, we've been hustling to *fill* those shelves with new merchandise. Book-buyer Julie Clothier has packed our already-sagging bookshelves with nearly a hundred new titles, including a new environmental education section for teachers.

No less than six new T-shirt designs, including three featuring Mono Lake, grace our walls. Two new Carl Dennis Buell designs complete the lineup of our popular recycled plastic mugs.

There's an inexpensive lapel pin featuring the Committee logo, which also graces new embroidered twill caps and, for the first time, legionnaire's hats. There are also plenty of recent releases to be found in our music department.

Don't miss the 1995 Mono Lake Calendar, our best ever, which arrived just in time for the summer season . . .

And on and on! Be sure to stop in and browse. If your summer plans don't call for a trip to the lake, fear not! Most, if not all, of the new stuff will stuff the pages of the **1994–1995 Mono Lake Committee Gift Catalog**. Watch for it in your fall Newsletter.

1994 Mono Basin Science Updates

For 16 years the *Mono Lake Newsletter* has published updates on scientific work being done in the Mono Basin. Throughout its existence, the Mono Lake Committee's position and goals have been strongly shaped by the insights researchers have provided into Mono Lake's ecosystem.

This year, the updates focus on the research that has fed into the Water Board process. Unlike past years, not all of the updates reflect analysis of detailed data collected at Mono Lake. Peter Vorster, for example, used his modeling expertise to work out the nuts and bolts of the MLC's proposed plan for filling the lake to 6390 or higher. Nonetheless, all the updates provide a sense of the type of information the Water Board is currently considering.

The Committee has traditionally offered the Department of Water and Power the opportunity to present research which supports their position on Mono Lake; we do so again this year on page 19. The presence of their information, however, does not mean we agree with the conclusions they have drawn. Read what follows and decide what you think.

California Gull Research: 1993 Breeding Analysis

Dave Shuford

Point Reyes Bird Observatory 4990 Shoreline Highway Stinson Beach, CA 94970-9701

I n 1993, Point Reyes Bird Observatory conducted its eleventh year of research on the population size, reproductive success, and ecology of California Gulls breeding at Mono Lake, the site of the world's second largest nesting concentration of this species.

As usual, our research focused on the Negit Islets, which over the course of our studies have on average supported 76% of the lake's nesting population. Combining our data with that provided for the Paoha Islets by Dr. Joseph R. Jehl, Jr., allows us to estimate the size and reproductive success of the entire Mono Lake gull population.

In 1993, we estimated that 60,844 adult California Gulls bred at Mono Lake, a number similar to the totals since 1990. Twain Islet alone again held slightly over 50% of the lake's nesting gulls. The estimated 33,000 to 37,000 young fledged from all of the lake's islands was the third highest since our studies began in 1983. The relatively high number of young produced was in large part a function of the large nesting population of adult gulls, because the fledging rate of 1.09 young per nest was about average for the 11 years of our study.

Despite a wet winter preceding the nesting season, coyotes crossed a narrow water barrier to Java Islet and were the apparent cause of a complete reproductive failure there.

Although this reduced the number of chicks produced lakewide by only about 1%, this was nonetheless an important event. Based on prior data, the Environmental Impact Report prepared for the State Water Resources Control Board predicted that Java and Twain islets would be protected from coyote predation at lake levels above 6373 feet. That coyotes reached Java in 1993 at a lake elevation of 6375 feet — a full 2 feet higher than the predicted safe level indicates that the EIR analysis is incorrect.

It is not clear exactly what level will protect the nesting islands, as coyotes, having been rewarded by their previous behavior, may cross over to the gull colonies at even higher lake levels. This is particularly important at present given that Twain Islet is susceptible to coyote predation at the same lake levels as is Java and that Twain holds 50% of Mono Lake's nesting gulls.

These facts from the 1993 nesting

season were presented in oral testimony to the Water Board in December to aid them in choosing a lake level that will protect nesting gulls and other features of the Mono Lake ecosystem. Dr.

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Dave Calleri, Jan Dierks, and C tine King led the field research in 1993 and were assisted by a large number of people both on and off the islands, all of whom we kindly thank. Our research in 1993 was supported by the Mono Lake Committee and the membership of Point Reyes Bird Observatory.

Further details of our research in 1993 can be found in: Shuford, W. D., A. J. Dierks, D. M. Calleri, and C. A. King. 1993. Population size and reproductive success of California Gulls at Mono Lake, California, in 1993, with emphasis on the Negit Islets. Contribution No. 604 of Point Reyes Bird Observatory.

Editor's Note: On July 1,1994, researchers found Java islet to be totally abandoned once again. The signs of coyote predation were clear: scat, tracks, and predated birds. Although 200 nests were counted earlier this year, no eggs or chicks remained.



O The Significance of Mono Lake for Waterfowl

Dr. Frederic A. Reid Biological Supervisor for the Pacific Flyway

Ducks Unlimited 9823 Old Winery Place, Suite 16 Sacramento, CA 95827

Historically, the Intermountain Region of the United States provided between 1.2 and 1.6 million hectares of waterfowl habitat. While most of the published waterfowl literature concentrates on production, some of the best marshes and concentration areas in the region host millions of waterfowl in migration.

The importance of wetlands to waterfowl in the arid West has been well summarized (Kadlec and Smith 1989): "In contrast to the perception that the Great Basin is a 'desert' of little value to waterfowl, the reality is that the marshes and vetlands are of higher value to wate of higher value to wate of higher value to wate of higher value to marshes in a dry region adds to their value."

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Within the Mono Basin, some waterfowl were present historically during the breeding season. Mallard, cinnamon teal, gadwall, and northern shoveler were among the most common breeders. Great Basin Canada goose, redhead, ruddy duck and northern pintail also commonly nested in this region.

The evidence suggests that these breeding numbers were tiny, however, as compared to vast concentrations of waterfowl in migration. In general there are three major flight corridors from the breeding grounds to the wintering grounds in the Pacific Flyway ... a coastal route, an interior coastal route, and an interior corridor through the Great Basin. With huge concentrations of migrant birds in the Great Basin and few stopover areas, spectacular concentrations of waterbirds often are found on suitable areas.

he draft EIR provides countless piess of evidence that pre-1940 conditions (or those in the early years of

diversions) were conducive to the kinds of Great Basin habitats that support substantially more waterfowl than exist today. Statements by long-term residents of the Mono Basin, including Banta, Vestal, McPherson, and DeChambeau describe populations that numbered in the hundreds of thousands to a million waterfowl. Two CDFG employees, Vestal and Dombrowski, are in agreement that population levels were far higher than found today. Dombrowski's waterfowl population estimates in fall 1948 indicates substantial waterfowl numbers in the hundreds of thousands to a million waterfowl. By far the dominant species present was the northern shoveler.

Lagoons shown in pre-diversion aerial photos are similar in physical structure to many coastal or lacustrine wetlands important to waterfowl in other areas of North America. These lagoons, and the stream deltas, were the most important habitats for waterfowl. Currently, Ducks Unlimited, cooperating with the Mono Lake Committee, the U.S. Forest Service, and Caltrans, is attempting to restore some 30 acres of seasonally flooded wetlands at the DeChambeau Ponds area at a cost of more than \$400,000. This price is substantially greater than the normal restoration projects with which we become

involved, but reflects the expensive nature of ground-water pumped, restoration projects.

At the current lake level (or below), realistic waterfowl habitat restoration will be both expensive and marginal in impact. While individual restoration projects could have waterfowl respond to the micro-habitat conditions provided, substantial improvements in migrating waterfowl populations can only be achieved with increased lake levels.

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Allowing the lake level to reach 6405 feet and then fluctuate between that level and 6400 feet will result in habitat that can support substantially greater populations of waterfowl than exist today. Efforts to restore Pacific Flyway populations can only be reached if quality habitats are restored in critical breeding, migration, and wintering habitats.

The Mono Basin can once again support substantial waterfowl populations if stream diversions are decreased to allow quality migrational habitats to develop. This article is a summary of testimony given before the State Water Board.



Dr. Reid explains the plans for the DeChambeau waterfowl habitat restoration project at Mono Lake. The work will be paid for by Caltrans as part of their environmental mitigation program.

Highlights of 15 Years of Alkali Fly Studies

David B. Herbst, Ph.D. Sierra Nevada Aquatic Research

Laboratory University of California Route 1, Box 198 Mammoth Lakes, CA 93546

Mono Lake was summarized in testimony I presented recently at hearings of the State Water Resources Control Board. This update highlights some of the main conclusions of over fifteen years of studies:

• Laboratory and field experiments have repeatedly shown that increased salinity reduces the growth and potential for population productivity of the alkali fly.

• Reduced productivity potential due to salinity stress results not only from inhibited rates of growth and survival of fly larvae but also because of loss of physical habitat and limited algal food supply.

• The salinity increase that restricts growth includes any concentration of salts above that of the historical pre-diversion lake level (at about 5% dissolved salt) indicating that the lake has already suffered substantial

losses in productivity.

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• Flies are larger, contain more fat, and would be more abundant at lower salinities, suggesting that food conditions for birds were more favorable under past higher lake level conditions.

• Models simulating possible changes in N ono Lake predict greater productivity at higher lake levels, but even so are conservative and underestimate the potential for abundant populations, high-quality habitat, and a more diverse community of plants and animals.

• The replenishment of nutrient supply from nitrogen fixation is limited by increased salinity.

• The lake level optimizing shallow tufa habitat and favorable salinity conditions for growth of the alkali fly population can conservatively be set at 6390 feet elevation.

I have found the criticisms of the



Evidence from microcosm experiments.



Los Angeles Department of Water and Power and its lawyers to be misrepresentations of the truth and selective presentations of information.

• Criticisms of salinity bioassay methodology is disingenuous — dosage-response data has long been used to evaluate the effects of toxins from drug and pharmaceuticals to environmental pollutants. This is a far more useful approach to predicting the effects of salinity than uncontrolled environmental correlation. If we did not use this approach to understanding toxicity we might all now be using DDT for air freshener.

• Science proceeds by refinement and improvement in the design of experiments so as to isolate the causes underlying natural phenomena. Conflicting results seen early in the experiments I conducted on the effect of salinity were due to a failure to control culture condi-

> tions. Once these confounding influences were controlled, salinity has consistently and repeatedly been shown to inhibit growth.

• Microcosm experiments simulate the effect of salinity not only on the alkali fly but on all the biological and physical components of the ecosystem as they interact together. These studies show that the impact of salir originates not only from phy ological toxicity to flies, but limitations on the amount and type of algal food available and other negative feedback such as low fecundity. These limitations occur despite elevated nutrient levels in more concentrated salinities.

• Although factors other than salinity may also affect nitrogen fixation, none of them would be expected to have a counteracting affect on the inhibition I have shown to be due to salinity.

• The inhibition of brine shrimp growth with elevated salinity would not be nullified by greater food availability at higher

salinity because experimental evidence indicates (1) less algal food would be present at high salinity, and (2) studies in which excess food supply was present at all times show dramatic decreases in shrimp growth and reproduction at higher salinity. If food could offset salinity stress, as LADWP argues, shri would have been unaffected by salinity under these conditions. Peter Cons

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The Mono Lake Water Management Plans

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Consulting Hydrologist to the Mono Lake Committee and National Audubon Society 3901 Balfour Avenue Oakland, CA 94610

was asked to develop two separate management plans for the National Audubon Society and Mono Lake Committee using the Los Angeles Aqueduct Management Program (LAAMP), which was developed by Jones and Stokes Associates, the consultant to the State Water Resources Control Board (State Board). I was involved in the conceptualization, review, and revision of the model through the Technical Advisory Group established by the State Board.

LAAMP is used to simulate monthly aqueduct operations and it presides results on streamflows, recoir levels, groundwater pumping, and exports from the Mono Basin and Owens Valley for any given set of user-specified operational assumptions and input parameters. LAAMP can be used to calculate the number of years it would take for Mono Lake to achieve various lake levels under various diversion scenarios.

The amount of time it would take for the lake to rise depends on the sequence of precipitation and runoff that one assumes will occur. LAAMP uses the historical record of precipitation and runoff to make its projections and uses a lake level forecast model that predicts the lake would rise to a given level in slightly less time, given the same release, than that calculated by the forecast model I developed for my master's thesis. The DEIR uses the 1940–1989 sequence in all of its simulations, although we later extended the sequence through 1992 to include the recent drought.

The management plan is designed to achieve and maintain a lake level close

to or above 6390 feet; the second plan proposes to achieve and maintain a median lake level of 6405 feet. [Editor's note: see *Newsletter*, spring 1994 for discussion of the merits of these levels].

The two plans have the following specific measures in common:

• Keep fish in good condition by implementing the Department of Fish and Game (DFG) recommendations for minimum releases and flushing flows for the Mono Basin streams, with several clarifications.

• Allow no diversions until the lake level reaches 6384 in order to accelerate

Table A. Years to achieve a given lake level under the NAS and MLC plan

Lake Level	Years
6377	18
6390	7–25
6405	4050

the protection of public trust values associated with higher lake levels including compliance with the Clean Air Act — and as a buffer against droughts.

• In the period when the lake is initially between 6384 feet and 6390 feet, the diversions will be limited to 10,000 acre-feet per year of available water in all the year types (available water is defined as runoff above and beyond the DFG fish flows).

• The plan of no diversions until the lake reaches 6384, and the subsequent allocation of a constant 10,000 acre-feet per year export amount in the initial period, was designed to have the lake rise to 6390 feet in an average of 16 years. I ran the plan with LAAMP fifty times starting with successive years in the historical sequence and cycling back to the beginning of the sequence to obtain the average of 16 years. It can take as long as 25 years and as little as 7 years for the lake to reach 6390 with this plan. The period of no diversions could vary from as little a four years to as much as 12 years. The 16 year period is the longest practically measured time frame allowed by the EPA for compliance with the Clean Air Act.

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• By pre-specifying a block of water DWP can export in a year, both plans are simple to implement and monitor, and both provide DWP maximum operational flexibility. 6390 Plan

> • Once the lake level has achieved 6390 feet, DWP can export all available water above DFG fish flow requirements (the average export is then 32.3 thousand acre-feet per year). There is no lake level release requirement because LAAMP indicates DFG fish flows by themselves will keep the lake between about 6387 and 6400 with a median lake level between 6391 and 6392

6405 Plan

feet.

• Once the lake level has achieved 6390 feet, then DWP can export 15,000 acre-feet per year of S available water until the lake rises to 6405 feet. When the lake is at or above 6405, DWP can export all runoff above the fish flows. When the lake drops down to 6405 feet, the exports are reduced to 15,000 acre-feet per year. It take 44 years to reach the 6405 foot level with this plan if one uses the historic sequence beginning with the 1940 runoff year. Once the lake level is at 6405 feet, exports average about 22.6 thousand acrefeet per year and the lake fluctuates between 6401 feet and 6412 feet with a median elevation of about 6405 feet.

This article is a summary of testimony given before the State Water Board.

Assessing Prediversion and Present Riparian Vegetation Conditions on Tributary Streams

Tim Messick Jones and Stokes Associates 2600 V. Street, Suite 100 Sacramento, CA 95818-1914

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n 1940 you could walk down Lee Vining Creek from the town of Lee Vining to the county road near the lake and be in the shade of tall cottonwoods, willows, and Jeffrey pines for virtually all of your 1.2 mile walk.

Today that walk is a very different experience — there are few tall shade trees, sagebrush is now dominant in most areas, and dense accumulations of fallen riparian trees make passage difficult in some areas. The contrast between past and present conditions is similar along much of Rush Creek, but is more varied because the influences of topography, hydrology, and history are more complex on Rush Creek than on Lee Vining Creek.

One of the objectives of the EIR was to objectively and quantitatively characterize the differences between prediversion (1940) and existing (1989) conditions of riparian vegetation along all the Mono Basin streams diverted by LADWP. To do this, we mapped prediversion riparian vegetation from aerial photographs taken in the winter 1929-30 and summer 1940. To map existing vegetation we used aerial photographs taken in 1987 and 1990 and ground-checked the maps with field surveys. We distinguished several kinds of riparian communities based on the dominant trees and shrubs, as well as areas of high and low canopy density. Each patch or "polygon" of vegetation was measured with a planimeter. Then the data were collected, summarized, and compared using a spreadsheet program.

Table 1 is a condensed summary of the results (see the EIR for more detail). You can see that Lee Vining Creek below town lost three quarters of its mature riparian vegetation, including 93% of its cottonwood-willow forest. Losses on Lee Vining Creek from the town up to the diversion dam were minor because groundwater remained available to the trees. Rush Creek lost half of its mature riparian vegetation, including 95% of its cottonwood-willow forest and 21% of its willow scrub. Losses were greatest from the Bottomlands down to the mouth of Rush Creek. On both creeks, mixed riparian scrub increased in area as rose flourished in some areas too dry to support willow.

Although a variety of mechanisms lead to the declines, LADWP's dewatering of the creeks was the common factor in all of them. On both creeks, many trees died from loss of groundwater. The forest stopped regenerating when annual high flows and occasional floods disappeared. Dewatering exacerbated the adverse effects of heavy grazing, which had already degraded portions of the riparian forest long before LADWP began diversions. The floods of the late 1960s and early 1980s produced severe lateral erosion wherever the riparian vegetation that knits the banks together had been lost. The floods also caused channel incision, especially severe on lower Rush Creek, because the lake level had dropped, greatly increasing the stream's erosive potential. Fire burned part of the dead riparian forest on Lee Vining Creek in the early 1950s.

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On Rush Creek, springs on the side of the bottomlands dried up wherrigation in Pumice Valley ceased, due in part to LADWP's growing water-export capacity and in part to destruction of the B-ditch diversion structure in the 1967 flood. Gravel buried riparian habitat just above the Narrows and clogged channels throughout the upper Bottomlands when the late 1960s floods swept through quarries near the mouth of Parker Creek.

Rewatering the streams and removing sheep has promoted extensive regrowth of willows and cottonwoods along some segments of the creeks in the last few years; however, these saplings will not form a dense, multilayered canopy for several decades, and most parts of the former riparian zone lack this sort of recovery.

Changes in riparian vegetation conditions from 1940 to the present and the reasons for these changes are important issues in the State Water Board's consideration of the EIR and related testimony. The recovery of riparian resources will influence fisheries, recreation, and agement in the Mono Basin for decades to come. ►►

Table 1. Comparison of Prediversion and Existing RiparianAcreages on Lee Vining and Rush Creeks

	Matur	Mature Riparian Vegetation (acres)				
	Rush Creek		Lee Vining Creek			
	(below Grant Lake)		(below Lee Vining)			
Vegetation Type	1940	1989	1940	1989		
Cottonwood-Willow	160	8	56	4		
Willow Scrub	80	63	5	5		
Mixed Riparian	12	58	0	6		
Other (Conifer- Broadleaf and Aspen)	20	7	1	1		
Total	272	136	62	16		
	•	7				

Mono Lake Newsletter -

18

DWP Report: Mono Lake Ecosystem Continues to Thrive Los Angeles Department of Water and data continue to show no correct

Los Angeles Department of Water an Power P.O. Box 111

Los Angeles, CA 90051

he winter of 1993 saw one of the heavier snowfalls on record, but it was followed by a very hot and dry summer. Consequently, the level of Mono Lake did not significantly change (even without any export) and averaged 6,375 feet msl during the summer season. Since 1979, Mono Lake has fluctuated between 6,372 and 6,381 feet msl, and the Negit land bridge has come and gone. Biological data gathered during this period is clear: Mono Lake continues to thrive at lake elevations in the mid and upper 6370s.

Brine Shrimp Do Well in 1993

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The average yearly abundance of adult brine shrimp was similar to previous vears. At 9,047 adult shrimp per s meter of lake surface, the 1994 average was slightly lower than the 1992 reading, but within the range of variation measured since the first counts were taken in 1979. The historical data show that the Mono Lake brine shrimp population has been relatively stable over the past 15 years and continued to do well in 1993.

California Gulls Have Another Good Year

For the second year in a row, almost 50% more California Gulls nested at Mono Lake than in the 1980's. Though the reason for this population increase is not known, the fact that the colony is expanding shows that there is more than enough food and nesting space for the Gulls and their chicks. These historical

>> Jones and Stokes Associates prepared the Mono Basin EIR. Work for the EIR was funded by LADWP and directed by the State Water Res(es Control Board. Dr. Scott Stine helped characterize historic riparian conditions. data continue to show no correlation between Gull numbers and lake salinity. Nor has the Negit Landbridge been a factor in the Gulls' survival, as they have moved to nest at other islands at the lake. Early results show that 1994 will be another banner year for the California Gull at Mono Lake.

"Explosive" Vegetative Recovery seen on Mono Basin Creeks

Since the return of permanent streamflows in the mid-1980s and the removal of livestock grazing in 1991, the natural growth of the riparian vegetation along lower Rush and Lee Vining creeks has been described as "explosive" by witnesses at the Water Board's hearing. An example of the rapid changes occurring on the creeks can be seen from the two photographs below: one was taken

in 1986 on lower Rush Creek and the other in 1993 at the same location. This natural recovery would dwarf any effort made by human intervention.

An expert at the hearing testified that "restoration requires time to accomplish. It cannot occur overnight. Many attempts at trying to accelerate stream recovery with structures and physical modifications to channels are counterproductive and can delay the rate at which restoration actually occur." Therefore, the DWP proposed to the Water Board a five-year moratorium on active stream intervention

until the full extent of the natural recovery can be evaluated.

Research to Continue in 1994

The Department of Water and Power will continue to support the research needed to achieve a reasonable and informed resolution of the Mono Lake controversy.

Much of the data presented in this update was collected by Dr. John Melack (U.C. Santa Barbara), Dr. Joseph Jehl (Hubbs Sea World Research Institute), and Dr. Robert Beschta (Oregon State University).

Editor's Note: Court orders require DWP to maintain Mono Lake at a minimum elevation of 6377 feet to prevent irreparable harm to the ecosystem. We have printed DWP's summary exactly as submitted. This is not to be construed as an endorsement of DWP's position.



1986 (above)

1993 (below)



U P D A T E S

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Wetlands, Lagoons, and Wooded Bottomlands at Mono Lake

Scott Stine, Ph.D. 1450 Acton Crescent Berkeley, CA 94702

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ccording to reliable historical sources, large numbers of ducks seasonally occurred on and around Mono Lake during the years prior to, and immediately following, the commencement of diversions by the Los Angeles Department of Water and Power. The areas of greatest waterfowl concentration included localities on the surface of Mono Lake and on adjacent marshlands; on lagoons along the northern shore of the lake; and in the riparian woodlands along the Rush Creek bottomlands.

Each of the offshore areas was characterized by an abundance of fresh water that was derived from streams and/or springs. These influxes of fresh water did not simply dilute the hypersaline water of Mono Lake. Rather, the freshwater inflow, being far lighter than the salt water, floated as a lens on the surface of the lake — a phenomenon known as "hypopycnal stratification."

The photograph above was taken in June of 1986 at the mouth of Rush Creek. It shows the plume of fresh, sediment-laden water from Rush Creek floating on the salty water of Mono Lake. The density difference is made apparent

not only by the different colors of the two waters, but by the white line that surrounds the periphery of the freshwater lens. This white line is attributed to lake waves breaking against the pool of fresh water.

The size and persistence of the hypopycnal lenses on Mono Lake depended on the rate of freshwater inflow, and the rate at which the wind and waves could mix the freshwater with the lake. Some of the sites of hypopycnal stratification,



Hypopycnal stratification occurs at Mono Lake when incoming freshwater floats on Mono's denser salt water. This photo was taken at the mouth of Rush Creek in June of 1986.

including the mouths of Rush and Lee Vining creeks, occurred in relatively open water where wind and wave action were at times considerable; moderate rates of inflow were required to produce hypopycnal conditions at these sites and under these conditions. At other sites, freshwater entered the lake through bays and coves that were protected from wind and waves. At these protected sites, relatively small amounts of freshwater inflow could likely produce persistent hypopycnal conditions.

Hypopycnal stratification effectively gave Mono Lake a freshwater surface up to approximately a half-foot thick. Thus, while Mono is a saltwater lake, inflow from springs and streams created a freshwater surface locally. These were the very areas reportedly utilized by large numbers of waterfowl. In addition, these areas all adjoined, or were in close proximity to, freshwater marshlands. These marshlands totaled 133 acres in the vicinity of the Rush Creek delta (with an additional 38 acres of freshwater lagoons); 45 acres at the Lee Vining Creek delta; 79 acres at the deltas of north shore streams; 7 acres in the vicinity of South Tufa; 43 acres on the southeastern shore;

and 34 acres on the northeastern shore.

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For reasons discussed in Auxilia Report No. 21 to the EIR and elsew Mono Lake's northern shore is characterized by a ~10-mile-long beach berm formed by waves and long-shore currents. The lakeward edge of this berm lies at an elevation of ~6400 feet. The berm can impound water on its landward side, creating lagoons - brackish (freshwater-saltwater mix) ponds lying adjacent to, and typically in elevational equilibrium with, Mono Lake. Lagoons form, and persist, whenever the surface of Mono Lake lies at or above the elevation of the lagoon floor. When Mono Lake drops below these base elevations, the lagoons vanish to desiccation.

In 1940, with Mono Lake standing at an elevation of 6417 feet, these lagoons covered approximately 204 acres. According to reliable historical sources, the lagoons were frequented by large numbers of waterfowl.

During the years prior to the DWP's Mono Basin diversions, Rush Creek the largest of the Mono Basin streams approached Mono Lake through an tensive, poorly drained, alluvial bottomlands characterized by over 200 acres of

Mono Lake Newsletter

S E N E S

de woodland interspersed with areas of particular ded and slow-moving water. Numerous historical accounts and photos document the existence of these wooded marshlands. According to reliable historical sources, this bottomlands supported large numbers of ducks seasonally.

The diversion of water by the LADWP forced a drop in the level of Mono Lake. This artificially-induced lake recession dramatically altered the environment of the areas formerly used by large numbers of ducks. The marshlands that had existed on the plains of the Rush and Lee Vining creek deltas were destroyed not only because of the elimination of stream flows, but because of changes in the elevational relationship between the lake and the plains of the deltas. As Mono Lake dropped below 6400 feet, it "fell off" the gently sloping surface of the delta plains onto the steep delta fronts. This forced the streams to incise their deltas to depths of up to 25 feet. This incision effectively drained the 'es of the delta plains. Today, the m fð. *i* marshlands are desiccated and are

NAS&MLC exhibit 178

covered with woody shrubs. While the hypopycnal stratification still occurs at the mouths of Rush and Lee Vining creeks, the freshwater lenses do not occur in association with marshlands.

A steady decline in the size of the lagoons accompanied the artificially induced lake regression after 1940. As shown on maps and aerial photos, the north-shore lagoons were less than half their pre-diversion size when the lake reached 6406 in 1954; two years later (lake level 6402) the lagoons had desiccated.

The incision of Rush Creek that accompanied the drop in Mono Lake effectively lowered the water table of the Rush Creek bottomlands. This, together with the abandonment of thousands of feet of stream channel, has eliminated the hundreds of acres of wooded marshland that formerly characterized the Rush Creek bottomlands.

In short, the three major types of wetland habitat favored by ducks at Mono Lake have been eliminated or significantly reduced in size by the artificial decline of Mono Lake. Portions of these habitats would return if the lake rises to higher levels. The north-shore lagoons would reform at lake levels around 6405 feet. Hypopycnal stratification would increase with higher stream flows, and portions of the associated freshwater wetlands would return. Portions of Rush Creek's wooded bottomland may return under a restoration program involving the rewatering of historic stream channels.

Streambed incision, however, has caused irreversible draining of some freshwater marsh and wooded bottomland areas and these areas can not be expected to return to their historic condition in the sub-millenial time scale. Perhaps this long term damage can be somewhat mitigated by requiring LADWP to rewater Mill Creek, Mono's third largest stream.

This article is a summary of testimony given before the State Water Board.

Epic droughts dwarf "normal" dry spells

n an article published in the British journal *Nature* on June 16, researcher Scott Stine used data collected at Mono Lake and other locations to document two "epic droughts" in California's not-so-distant past.

The droughts, lasting more than a hundred years each, were far more severe than any ever considered in planning California's water future. And they may not be that unusual.

"We've come to believe that the climate of the past 150 years is what we should expect in the future," says Stine. "But we're kidding ourselves — the past century-and-a-half is the third wettest period of the past 2,500 years."

In *Nature*, Stine presents his study of lict tree stumps rooted in presentkes, marshes, and streams. Using radiocarbon dating and tree ring analysis, he determined the age of tree stumps rooted well below the "normal" waterline at Mono Lake, Tenaya Lake, the West Walker River, and Osgood Swamp. He found a similar data in Argentina's Patagonia

The location and age of the stumps, Stine writes, indicate California underwent "extremely severe drought conditions for more than two centuries before AD~1112 and for more than 140 years before AD~1350." Stine concludes that "during these periods, runoff from the Sierra was significantly lower than during any of the persistent droughts that have occurred in the region over the past 140 years."

Should this type of drought return, the environmental impacts would be enormous, even under natural conditions; they would only be magnified under the artificially stressed conditions that exist today. "If such a drought recurs," Stine suggests, "species having trouble with today's human impacts and climate conditions could easily be pressured into extinction."

Stine cited these "epic droughts" during the recent Water Board hearings, warning that Mono Lake must be buffered against future dry times. "It would not be sufficient, nor realistic, to protect the lake against just seven or eight years of drought. If we are to protect the lake from dropping below 6368 feet, the elevation at which Mono Lake comes unwound geomorphologically, we must plan for a drought of at least twenty years. This means buffering the lake with a level of at least 6390 feet," according to Stine.

Mono Lake through an artist's eyes

T his summer the Mono Lake Committee's slideshow room will be showing something more than slides. From June to September, a multi-media art installation entitled "Water Study (v)" offers the public an educational experience which can be seen, heard, and touched.

Lisa Schoyer, the Los Angeles based artist who created the exhibit, has studied water issues in the West for nearly four years, and her previous "Water Study" installations have appeared in Texas, Arizona, and California.

Different aspects of the installation lead the viewer to draw their own conclusions about the effects of lowering lake levels and water diversions on the Mono Basin. Whether it's an old-fashioned snowglobe, with a map of Mono Lake instead of a snowman and alkali by Stacey Simon

dust for snow, or a thirteen foot long "light box" which emits a long, low plane of light appearing as water around one's ankles, Lisa makes her points in unusual and innovative ways.

A self described "environmental artist," Lisa says she's interested in "the nexus where humans and the environment meet" and in this particular case, the "discrepancy between our

acknowledged need for water to survive, and the reality of how we get, use, and waste it."

The exhibit was paid for in part by a grant from the Mono County Arts Coun-



Artist Lisa Schoyer examining one of the "dust globes" she created to depict Mono Lake's dust storm problems

cil with support from the Town of Mammoth Lakes and Mono County.

Stacey Simon is the MLC's Public Education Coordinator.

Staff Migrations

by Martha Davis . . . and Colin Saunders

W ith great regret, we said goodbye in early spring to **Elaine Light**, the Committee's Mail and Membership Coordinator for the past three years and, briefly, MLC's Retail Operations Manager. Elaine so impressed us in her 1991 interview that we hired her on the spot with a hug. She was well known among members for carefully solving membership problems through the years.

Our new Sales Operations Coordinator is **Julie Clothier**, MLC intern parexcellence. Julie came to the Mono Basin mid-winter and liked it so much she decided to stay, much to our delight. Julie brings an extensive background in environmental education to the Committee and helped prepare the new Lee Vining Creek trail brochure.

Intern **Paul Greci** has departed for the summer, moving north to Alaska with the migrating birds. Paul did outstanding work for the Committee, including working on the creek trail brochure and the Committee's teacher's packet.

We welcome **Sherri Kalifato** as the Committee's new Mail and Membership Coordinator. In Sherri's capable hands the mail moves faster than the eye can see. Her hard work and quick learning have made for a smooth transition in this important position. Sherri comes to the Committee from the Renaissance Pleasure Faire.

And now introducing . . . the summer interns! Doug Knepp, a Mono Lake veteran at 16 and a saxophonist at heart, looks to jazz up his South Tufa tours. With a B.A. in geology, Timothy Tierney, brings a strong scientific background to the Committee along with recent biology graduate Jennifer Naquin, who spent last summer "out there wallowing in the brine of Mono Lake" while researching Mono's algae. Colin Saunders, another biology major,



Elaine Light left the Committee this spring.

seeks ecological enlightenment at Mono Lake, while **Ellen Croome** offers a more political background and may incorporate her experience into her studies at Cambridge University, England. Down in the Southern California office, **Tracy Nicholas** is working miracles for the membership, fundraising, and administrative departments while on break from the University of Colorado.

Martha Davis is the MLC's Ext tive Director; Colin Saunders is a sum² mer intern with the Committee.

Mono Lake Newsletter ---

Accolades

Volunteers and donors help Mono Lake

In Memoriam

Charles Heyler, a visitor to the Mono Basin for over fifty years, passed away on February 8; his wife and friends continue to remember him with donations to help save Mono Lake. Charles, who enjoyed spending time at Walker Lake with his family, frequented the Mono Inn and loved hiking and backpacking in the Sierra. Donations in his memory come from: Ann Heyler of Portola Valley; Richard Wolf of Fremont; William Donnelly of Fremont; William Clayton of El Monte; Roth S. Seneder of San Mateo; Grace McConnell Abbott of Portola Valley; Gunnar G. and Ethel S. Gunheim of Novato; M. Albert and Rita O'Dea of San Mateo; Olga Williams of Woodside; Sigrid S. Banks of Carmel; James C. and Gertrude Hickey of Hillsborough; Neil B. and Judith Ingels of Palo Alto: Bernice M. Brennan of San Mateo; Alyne M. Smiley of Pasadena; Eleanor M. Donovan of San Mateo; Pat G. Lovazzano and Ben

inette of Portola Valley; A. E. Stewart Chaffey of Carmel; Donald Satterlee of Portola Valley; Kathleen Censale of San Mateo; and Elaine Inhelder of Menlo Park.

Edward G. and Madge J. Schneider and Barbara Vaulet, all of Bishop, made gifts in memory of Dennis Schneider.

Helen J. Kraus of Johnsburg, New York and Elizabeth K. Solomon, also of Johnsburg, New York, remembered George Dodge with donations.

Special Gifts

Steve Davis and Carol Davis, residents of Davis, made a special gift in the name of their parents, Dr. Betty S. and Dr. John Davis. Their donation was made specifically for educational projects; it will support the revision of our teacher's packet.

Wish List Responses

Carroll Evans, of Ridgecrest, made us all happy by showing up one Saturday morning with a TV/VCR unit which he donated for use in the store.

Tony Rose, of Santa Rosa, donated a color scanner which was quickly put into use and helped us afford a new printer.

Eric Wilson, of Berkeley, answered one of our wishes with his donation of a beautiful computer which will enable us to work more efficiently.

And **Alan Harper**, of Oakland, donated a tremendously helpful SyQuest cartridge drive with ten cartridges.

Special Notice

We are grateful to **Trans World Express/Alpha Air** for support with flights between L.A. and the Eastern Sierra.

Bike-a-thon rider **Holly Owen** and her husband **Brian Pence** are the pound parents of a baby boy: **Geddy Walden Pence**, born on February 6. Congratulations! We expect to see him cycling soon . . .

Thanks to all for your support!

Bike-a-thon video wins award

Congratulations go out to Nancy Brink and Rick Jaffe. Their documentary video on the Mono Lake Bike-A-Thon, titled *The Water Cycle*, won a Gold Apple award in the Life Sciences and Environment category at the 1994 National Educational Film & Video Festival.

"What excites us more than anything is that this award is a national award," commented Nancy Brink. "The catalog of award winners goes out to teachers

ducators throughout the country, meaning that the Mono Lake issue will get broad exposure." The video follows the six-day, 350mile Bike-A-Thon on its journey from Los Angeles to Mono Lake and explores issues in California's often controversial water history.

Brink and Jaffe travelled the Bike-A-Thon route for two years, capturing cyclists struggling, sweating, and celebrating on the way to Mono Lake.

KTEH in San Jose plans to show the video on August 8 as part of its "video i" series. It is also available through the Mono Lake Committee Store for \$29.95 — see the order form on page 9.

Matched Gifts

Richard and Barbara Vandervoort, residents of Hinsdale, Illinois, had their donation matched by Mr. Vandervoort's employer, CPC International, Corn Products Division.

Brian and Donna Anderson, of Trabuco Canyon, made a donation which will be matched by Mrs. Anderson's employer, McMaster-Carr Supply Company.

Marc I. Yalom, who lives in Livermore, will have his gift matched by Waste Management, Inc.

Steve Moran, a resident of San Francisco, helped to save Mono Lake with a donation which will be matched by his employer, **Residential Lending**, Inc.

Alfred Gigliotti, of Cockeysville, Maryland, made a donation to be matched by his employer, **IBM**.

Rancho Palos Verdes resident **Pamela Reis** made a donation in support of Mono Lake which will be matched by **First Interstate Bank**.

Dennis McGuirk, a resident of Oakland, made a donation to be matched by his employer, **Citibank**.

Hallam Murray, from Menlo Park, made a donation which will be matched by Digital Equipment Corporation.

Paul Rauton, of Los Angeles, made a donation matched by GC Companies, Inc.

Your employer may have a matching gift program; check with your company's human resources office. If so, every gift you make to the Mono Lake Foundation will go even further!

23



The 15th Annual Los Angeles to Mono Lake Bike-A-Thon JOIN US FOR AN INCREDIBLE ADVENTURE

August 29 – September 3

Participate in a challenging and inspirational 350-mile, six-day journey. Show a commitment to protect Mono Lake — one of California's most important natural resources. Bike-A-Thoners cycle through diverse landscapes and make lasting friendships with fellow riders.

To participate, register and submit \$300 in sponsorships by August 19, 1994. The more you raise for Mono Lake, the more prizes you are eligible to win!

Contact Tina M. Sanders at (818) 972-2025 for more information — ask about our day-ride option.



– 15 years of cycling for future generations -



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