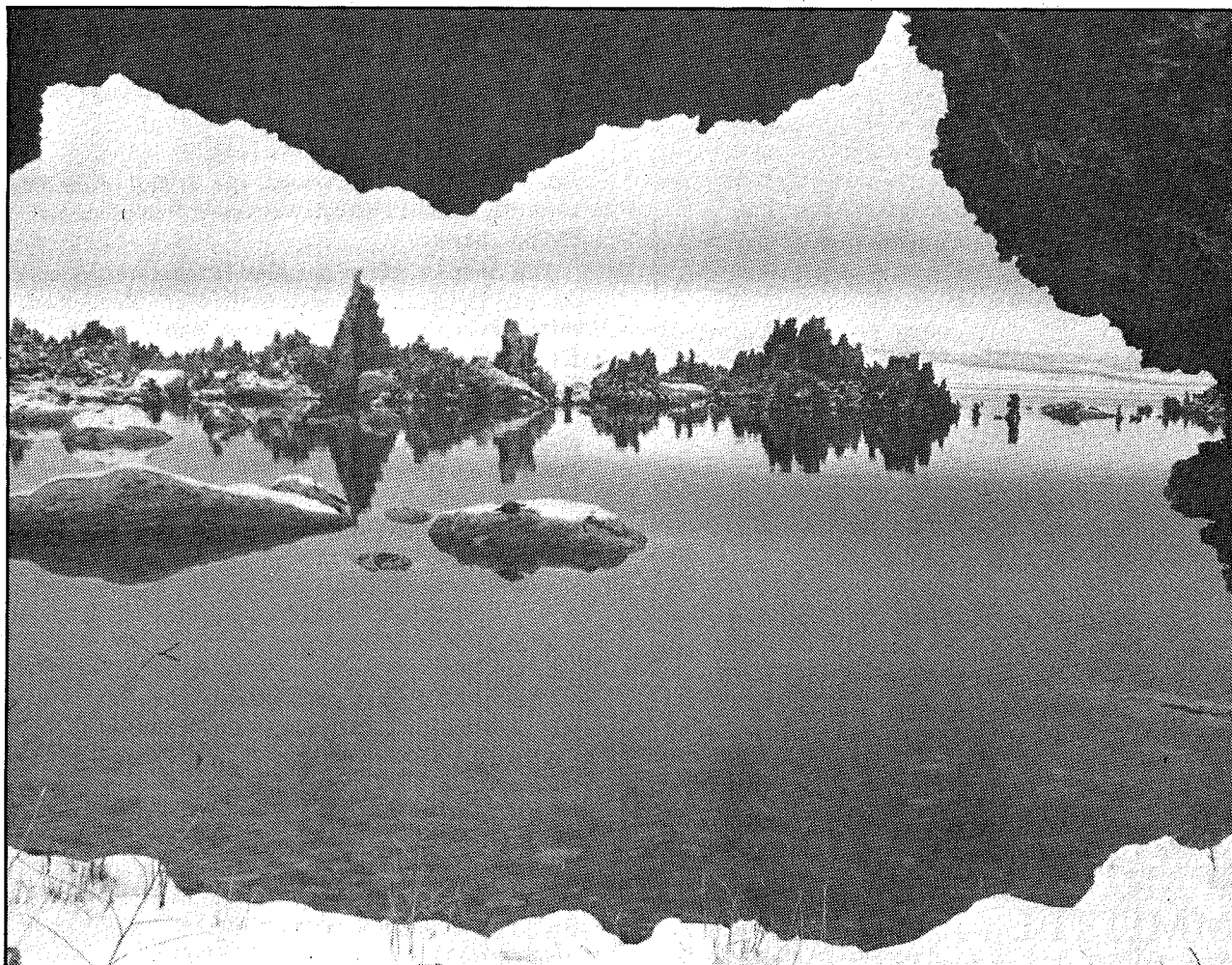


Winter 1987

Vol. 9, No. 3

MONO^{the} LAKE

N E W S L E T T E R



Larry Ford

Forest Service to Address Lake Levels

Scientific Research Updates

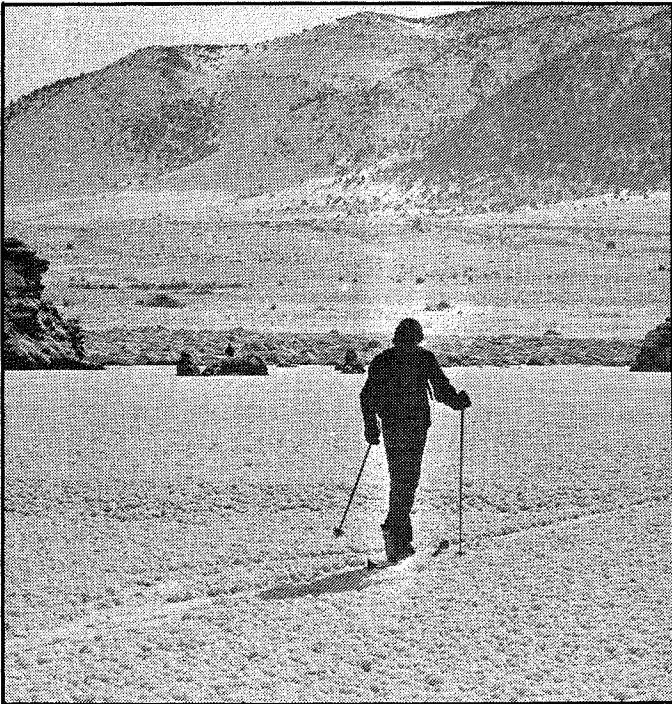
Battling for More Water

In Memory of Palm May Stout 1894-1986

We gratefully dedicate this issue of the Mono Lake Newsletter to the memory of one of the lake's most devoted and generous friends. I never met Palm Stout, but over the past seven years, her monthly letters of support and encouragement never failed to raise our spirits. Birds were truly her friends, and she knew them intimately by voice as well as

dress. I believe it was this deeply felt kinship with other living things that led her to support our efforts. We're going to miss Palm and her monthly epistles exhorting us to "NEVER GIVE UP!!!" But we know her spirit will live as long as phalaropes, grebes and other birds return to a living, healthy Mono Lake.

... David Gaines



Mono Ski Touring

Ski Tours in the Sierra Nevada, Vol. 4: East of the Sierra Crest. By Marcus Libkind. Bittersweet Publishing Co. 1986. 184 pp., paper.

This compact volume describes 78 tours from Sonora Pass south to Bishop, including 23 in the Mono Basin. Each description covers overall difficulty, length, elevation change, route-finding requirements, and directions to start and end points. The information is accurate and lucidly presented, and accompanied by clear topographic maps. The author has dedicated his book "to everyone who is helping to save Mono Lake." To order, please send \$11.95 plus \$2.50 postage and handling (California residents add \$.72 sales tax) to: MONO LAKE COMMITTEE, P.O. Box 29, Lee Vining, CA 93541.

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 compromise that will meet the real water needs of Los Angeles and leave our children a living, healthy and beautiful lake.

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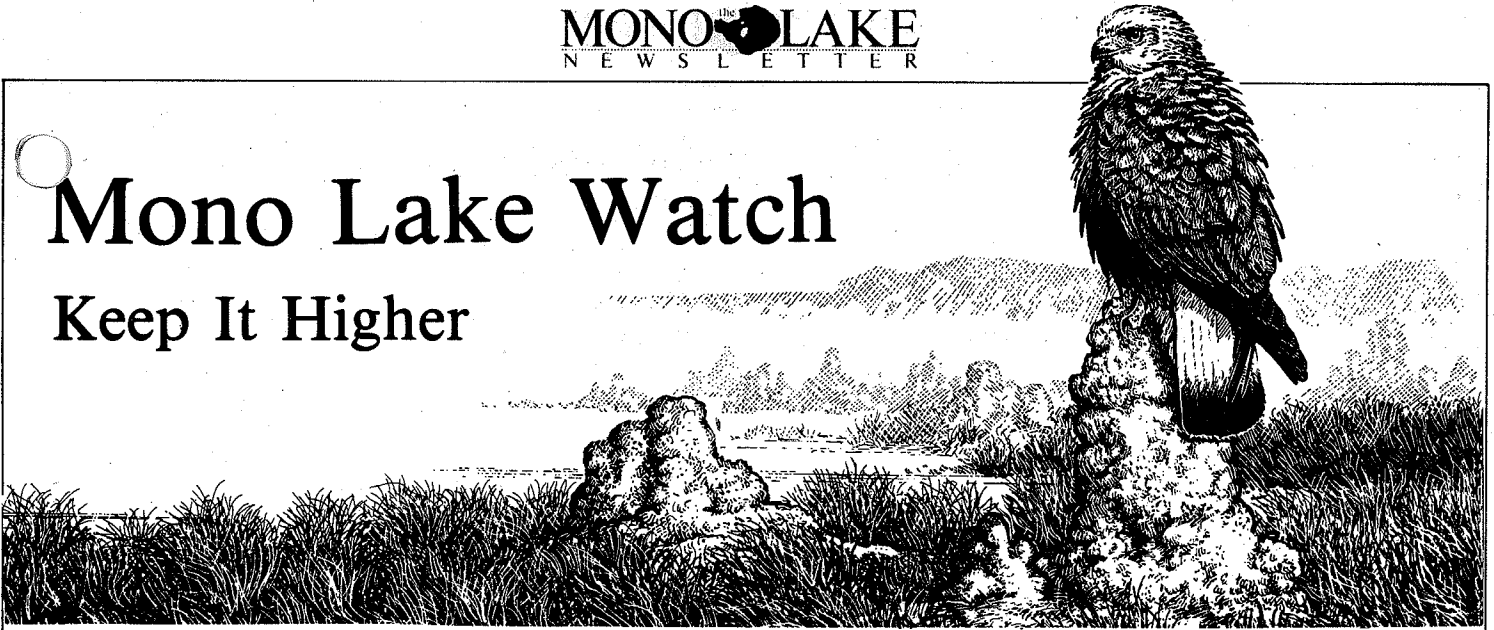
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Mono Lake Watch

Keep It Higher



Carl Dennis Buell

*I'd rather learn from one bird how to sing
than teach ten thousand stars how not to dance.
... e.e. cummings*

This past summer, I watched Mono Lake rise to 6,381.0 feet, its highest level since 1974.

That's wonderful, to be sure, but it doesn't mean the lake is saved. On the contrary, the Los Angeles Department of Water and Power continues to squeeze every drop it can from Mono's tributary streams, to demean or deny the lake's value, and to battle us at every turn.

We cannot take credit for Mono Lake's rise. Since the formation of the Mono Lake Committee eight years ago, California has been drenched by the wettest series of winters ever recorded. Runoff has repeatedly filled aqueducts and reservoirs to capacity, forcing a reluctant DWP to water the lake. Just think, were it not for diversions, Mono's waves might be lapping U.S. 395.

But we can take credit for a visionary campaign that has won even Los Angeles Mayor Tom Bradley's cautious support. We have prepared the soil for what could be fruitful negotiations later this year.

At this juncture, we must not be lulled into complacency. Mother Nature's reprieve will not last forever. We are due for a drought; indeed, as of December, virtually no snow had whitened Mono's Sierran watershed. Now, while the lake is high, it behooves us to marshal all the support we can, deluge political leaders with letters and telegrams, and catalyze a fair and lasting solution that meets the real water needs of both Angelenos and Mono Lake.

This means, I think, a lake higher than it is today. Mono still lies eight feet below the Interagency Task Force's recommended stabilization level of 6,388 feet, and over 45 feet below its natural (no diversions) level of approximately 6,426 feet. The 1979 Task Force, chaired by the California Department of Water Resources, recognized Los Angeles' legitimate need for Mono's water during prolonged dry spells. For this reason, the Task Force recommended stabilizing the lake at a level that would permit Los Angeles, during droughts, to tap its streams and lower its surface without losing Negit Island or

endangering the ecosystem. A level of 6,388 feet provides this important, protective buffer.

It's been seven years since DWP used its political muscle to stifle the Task Force Plan in the California Legislature. But thanks to you—our members, supporters and friends—this land may yet live, not maimed and crippled, but as an organic whole.

We should think of ourselves, not as fighters, but as healers. If you walk Lee Vining Creek from the DWP's diversion dam to Mono Lake, you will see and feel this firsthand. The meager flow we won in court last summer, while not enough to sustain a healthy stream, has begun to resurrect a withered ecosystem.

I've been walking Lee Vining Creek frequently, and sometimes think of myself as a stream, newly reborn, just beginning to grow. I can feel the icy water sing over me. I can feel the tender plants sprouting on my banks. I can feel deer, heron and bobcat leave their tracks on my shores.

We are these streams, this lake, this land, sharing, as Robinson Jeffers wrote, "the beauty of things, the terror, pain, joy, the song."

As Jeffers also said, "It is time to kiss the earth again, it is time to let the leaves rain from the skies, let the rich life run to the roots again."

May we all kiss the earth this winter solstice, and may our hearts blossom with joy. And may Mono Lake—and our spirits—always be high.

Peace with Earth!

... David Gaines

WHAT YOU CAN DO: Keep writing both Gov. George Deukmejian (State Capitol, Sacramento, CA 95814) and Mayor Tom Bradley (City Hall, Los Angeles, CA 90012), giving them pats on the back, but urging them to *act now* to save Mono Lake. Muchas gracias to all letter writers for all those past epistles; they do make a difference!

LEGAL UPDATES: Battling for Water

LEE VINING CREEK: Court Asked to Up Flow

The Mono Lake Committee has asked Mono County Superior Court for a preliminary injunction increasing the flow down Lee Vining Creek from 10 to 20 cubic feet per second. The Los Angeles Department of Water and Power is fighting to send every drop down the aqueduct.

The case began last summer, when DWP resumed diversions and left trout convulsing in drying pools. As in the Rush Creek litigation, the Mono Lake Committee filed suit based on Department of Fish and Game codes requiring dam owners to release enough water to keep "in good condition" downstream fisheries. We also contend the "public trust doctrine" mandates the protection of ecological and recreational values.

On Aug. 12, Mono County Superior Court Judge Edward Denton granted a temporary restraining order forcing DWP to release at least 10 cfs down Lee Vining Creek until a preliminary injunction could be considered.

In briefs that can best be described as fishy, DWP and the Mono Lake Committee dispute the quality of the trout habitat, the cost of protecting the fishery, and the meaning of the law. DWP portrays Lee Vining Creek between U.S. 395 and Mono Lake as a third-rate trout stream that supports only 80 fish which have "flourished" despite the diversions; "the only loss which may (or may not) occur—the mortality of 80 specific fish—is far outweighed by the irretrievably lost multimillion-

dollar annual cost to the city." It is feasible, DWP asserts, "capture essentially all of the resident fish and to transport it upstream."

In contrast, the Mono Lake Committee contends that "the law requires the maintenance of a healthy fishery, not a marginal collection of fish struggling to survive in drying water pools." DWP itself is responsible for the poor habitat and paucity of fish, "because DWP's diversions destroy the vegetative cover," "contribute to the degradation of the stream channel," and, of course, "kill the fish." Costs to Los Angeles are inflated: during wet years, for example, DWP cannot divert all the water anyway.

Moreover, we believe that the fish and game codes and public trust doctrine require the restoration and preservation, not just of fish, but of the entire Lee Vining Creek ecosystem. In fact, fish, vegetation and wildlife are intimately intertwined. Before DWP cut off the water, luxuriant groves of cottonwood, willow, aspen and pine margined the creek. These groves stabilized the stream banks, sheltered large numbers of birds, mammals and insects, and, through leaf-fall and other detritus, fertilized the aquatic ecosystem.

We expect a preliminary injunction hearing early this year. In September, Judge Denton disqualified himself, but kept the case in Mono County. The California Supreme Court has yet to appoint another judge.

RUSH CREEK: Trial Awaits Fish Study

The Rush Creek trial has been deferred for approximately two years while the California Department of Fish and Game studies the stream, and determines the flows needed to sustain a healthy fishery.

1986 in Review

JANUARY-FEBRUARY. At least two bald eagles winter along lower Rush Creek.

JAN. 6. The National Academy of Sciences Mono Basin Ecosystem Study Committee, which is assessing effects of water diversions on Mono Lake ecosystem, meets with researchers in Los Angeles. The NAS committee, and a similar state-funded panel, is slated to release reports later this year.

FEB. 22. Torrential rains force DWP to stop diverting water from Mono's tributary streams. The lake rises three feet, peaking at 6,381.0 feet in July, its highest level since 1974.

MARCH. DWP studies feasibility of raising Long Valley Dam and increasing storage in Crowley Lake reservoir, increasing aqueduct yield but enabling greater Mono Basin diversions in wet years. In August, Mono County Board of Supervisors and Mammoth Lakes Town Council condition support for Crowley expansion on stabilizing Mono Lake.

MARCH. California Director of Water Resources David Kennedy reports that state receives more mail on Mono Lake than on any other water issue.

MARCH-APRIL. At workshops on the Mono Basin National Forest Scenic Area management plan, the Mono Lake Committee and others urge Forest Service to consider lake levels and facilitate solutions. In December, Forest Service affirms "option, and probably responsibility" to identify a lake

level that would "best meet management objectives," and offers to play "positive role" in facilitating consensus on the lake level question.

MAY. Over 1,200 gulls return to nest on Negit Island, six times their 1985 numbers. Spring brine shrimp populations are high again this year.

JULY. Gulls fledge approximately 33,000 young, 2.5 times the 1983-85 average. Phalaropes, grebes and other migratory birds return in usual high numbers.

AUG. 6. DWP resumes diversions, leaving convulsing trout in the rapidly drying remnants of Lee Vining Creek. The 1985 preliminary injunction keeps water flowing down Rush Creek.

AUG. 12. Mono Lake Committee wins temporary restraining order forcing DWP to release enough water to keep Lee Vining Creek alive until the case comes to trial.

AUG. 26. Los Angeles Times advocates negotiated settlement that protects Mono Lake.

AUG. 27. Los Angeles Mayor Tom Bradley supports stabilizing Mono Lake in "healthy environmental state."

DEC. 31. Mono Lake lies at surface elevation of approximately 6,379.5 feet, 18 inches above its level one year ago, but approximately 46 feet below its projected level had there never been diversions.

After considerable wrangling, the Los Angeles Department of Water and Power, California Trout, Mono Lake Committee, National Audubon Society and DFG agreed this autumn on the details of a "cooperative investigation." Data collection, funded jointly by DFG and DWP, will be completed by the end of this year. Data compilation and analysis, funded solely by DFG, will be finished by June 1988. The work will be done, not by DFG staff, but by independent contractors acceptable to all parties.

Meanwhile, the preliminary injunction won by Cal Trout, the Mono Lake Committee and National Audubon in 1985 will continue to keep at least 19 cubic feet per second of water flowing down Rush Creek into Mono Lake instead of down the aqueduct to Los Angeles.

WATER LICENSE CHALLENGE: On Appeal

Our broader action challenging the legality of DWP's state-granted licenses to divert water from *any* of Mono Lake's tributary streams is before the 3rd District Court of Appeals. We are appealing an Aug. 4 Sacramento Superior Court ruling that fish and game codes do not apply to DWP's diversions. The court's brief, five-page decision ignored most of our arguments; even DWP deemed it "rather narrow." We hope to hear from the appeals court later this year.

PUBLIC TRUST: Still in Limbo

No word from the 9th Circuit Court of Appeals on whether the public trust suit—cornerstone of legal efforts to save Mono Lake—goes to state or federal court. The 9th Circuit Court has been sitting on the case for over 18 months. How long must we wait?

Forest Service to Address Lake Levels

In a letter sent Dec. 1 to California Gov. George Deukmejian, Los Angeles Mayor Tom Bradley, the Mono Lake Committee and others, Inyo Forest Supervisor Dennis Martin affirmed that the Forest Service has "the option, and probably responsibility, to identify a lake level that would best meet the overall management objectives of the [Mono Basin National Forest] Scenic Area."

Martin went on to ask if "there is some positive role" the Forest Service "could assume that would help facilitate . . . a consensus . . . on an acceptable lake level?"

The Forest Service has been struggling with the lake level issue since it began developing a "comprehensive management plan" for the Scenic Area last winter. The legislation establishing the Scenic Area requires the Forest Service "to protect geologic, ecologic and cultural resources," but "in a manner consistent with the protection of the water rights of the state of California or any political subdivision thereof (including the city of Los Angeles)." Because of this language, the Forest Service initially was hesitant to address lake levels in the management plan.

At a workshop last spring, the Mono Lake Committee argued that lake levels must be factored into the management

plan. The legislation does not preclude the Forest Service from acknowledging, based on studies like those being conducted by the National Academy of Sciences, that a minimum lake elevation may be the only means of protecting Mono Lake's ecological and aesthetic values. It does not preclude the Forest Service from encouraging voluntary solutions that would keep the area "scenic." The agency should play, as it has in the past, an advisory and facilitative role in resolving the Mono Lake controversy.

On the other side, the Los Angeles Department of Water and Power has vigorously opposed any discussion of lake levels in the management plan.

The Forest Service, however, has decided it cannot ignore the paramount threat to the Scenic Area's future. It has elected to defer the draft Scenic Area Management Plan, originally slated for release in fall of '86, so it can consider and incorporate the findings of the National Academy of Sciences' Mono Basin Ecosystem Study Committee. The 11-member committee, established by the Scenic Area legislation, is assessing the ecological impacts of water diversions and lake levels. Its final report is expected to be released in July so the draft management plan will probably be delayed until early fall.

... David Gaines and Lauren Davis

Bradley, Deukmejian Face Alkali Test

In 1986, for the first time, Mono Lake became an issue in California gubernatorial politics. Los Angeles Mayor Tom Bradley called Mono Lake "a rare environmental jewel," and said Los Angeles is "ready to do its part to preserve" it. Gov. George Deukmejian expressed concern for the future of the lake, and encouraged a balance between competing uses.

In late October, as the race was drawing to the wire, Bradley dispatched his chief of staff, Los Angeles Deputy Mayor Tom Houston, to discuss Mono Lake with Mono County officials. Houston claimed that Bradley, win or lose, would remain committed to saving the lake, but believes the state and federal governments should share the costs. Bradley had already taken the first step by asking the state Department of Water Resources and federal Bureau of Reclamation to begin discussions.

In response, Deukmejian's Water Resources Director David Kennedy criticized Bradley for raising the Mono Lake issue "in the final weeks of a gubernatorial campaign," but did not dispute the worthiness of his objective. Kennedy attacked the concept of a state-federal bailout, opining that the Los Angeles Department of Water and Power, having enjoyed "very large water and power revenues from operations of the Mono Basin diversion system," should bear all the costs of saving the lake. "Undoubtedly," Kennedy said, "benefits to the DWP have run into hundreds of millions of dollars, and the system has paid for itself many times over . . . To suggest that citizens of California and the nation should now pay the DWP to stop any further environmental degradation . . . appears to turn environmental law upside down."

Now that the dust has settled, will Bradley and Deukmejian seek a solution that saves Mono Lake? Or were they merely exchanging election-year rhetoric?

... David Gaines

WATER CONSERVATION: DWP Demurs, Council Acts



While the Los Angeles Department of Water and Power was endorsing a policy statement that belittles water conservation, the Los Angeles City Council independently passed an ordinance that will conserve thousands of acre-feet each year, and provide an opportunity to return more water to Mono Lake.

On Sept. 12, the city council passed Councilman Marvin Braude's "water closet and showerhead regulations" requiring owners to install low-flow showerheads and flush-reduction devices before selling their property. At a one-time cost to owners of as little as a few dollars, the measure will ultimately save approximately 18,000 acre-feet of water and over two trillion btu's per year in the residential section alone (when water is conserved, the energy to treat, distribute and heat that water is also conserved). In addition, less wastewater will need to be piped and treated, saving additional money, and relieving some of the stress on the city's beleaguered sewer system and Santa Monica Bay.

The Mono Lake Committee and the Planning and Conservation League recommended this common-sense conservation measure in our comments on DWP's draft Urban Water Management Plan, but were ignored. DWP's final plan belittled conservation, claiming Los Angeles can reduce per capita consumption by no better than 2 percent over the next 25 years. That amounts to just under 3.5 gallons per day—not even one flush of an average toilet. In contrast, between 1974 and 1984, Tucson, Ariz., reduced per capita consumption by 27 percent, and avoided spending \$45 million on a new well field and transmission pipes.

Despite this example, DWP continues to discount conservation as an alternative to cement-pouring methods of water development. On Oct. 9, the Board of Water and Power Commissioners endorsed a policy statement asserting that "conservation cannot entirely substitute for water supply development, as water demands cannot be sufficiently reduced by conservation on a long-term basis."

The Mono Lake Committee supported the ordinance, but urged Braude "to include a provision to reduce the importation of water from the Mono Basin as the ordinance decreases the need for that water." Such a policy, however, will require more widespread and vocal public support.

... Stephen Osgood

WHAT YOU CAN DO: Write to Mayor Tom Bradley and Councilman Marvin Braude (City Hall, Los Angeles, CA 90012), applauding their leadership in passing the water closet and showerhead regulations, but urging them to credit the savings to Mono Lake.

DWP Won't Share Crowley

The Los Angeles Department of Water and Power wants to enlarge its Crowley Lake reservoir, but won't consider sharing the yield with Mono Lake.

Last August, the Mono County Board of Supervisors and the Mammoth Lakes Town Council conditioned their support for the project on reaching agreement on "minimum desirable elevations of Mono Lake."

In response, Board of Water and Power Commissioner Jack Leeney said flatly that DWP will "not give concessions" on Mono Lake. "We cannot afford to give up anything," he added. "In fact, we don't have the right."

Mono Lake Committee Information Coordinator Ilene Mandelbaum was disappointed with DWP's response. "At least the county and the committee have expressed a willingness to cooperate and seek a solution," she said. "Why is DWP so unwilling to examine how an enlarged Crowley reservoir could be operated to benefit Mono Lake and fulfill the county's goals of protecting our water resources?"

Enlarging Crowley Lake could aggravate Mono Lake's plight, or it could be part of a solution. With a bigger reservoir to fill, DWP physically could divert more water from Mono's tributary streams. Or it could store more runoff from the Owens River, and reduce diversions from the lake.

San Francisco DWP's Hetch Hetchy

The city of San Francisco has convinced the Senate to kill a bill that would have prohibited the expansion of Hetch Hetchy Reservoir or the construction of new dams in national parks without congressional approval.

John Muir lost the battle for Hetch Hetchy, which lies entirely within Yosemite National Park, when San Francisco completed O'Shaugnessy Dam in 1913. "Dam Hetch Hetchy," raged Muir, "as well dam for water tanks the people's cathedrals and churches."

But in San Francisco's city hall, there are those who would build O'Shaugnessy Dam still higher and flood Hetch Hetchy still deeper to bring more water and power to the Bay Area. In a letter protesting Rep. Richard Lehman's bill, San Francisco Mayor Dianne Feinstein said, "The *only* economically feasible source for water for future needs is the Hetch Hetchy system."

The only feasible source? It might have been DWP talking about Mono Lake. Smelling blood, the Los Angeles Times seized the opportunity to jump all over San Francisco for its "rapacious water venture," and remind the world that Los Angeles' perfidious deeds are not unique. "Imagine even thinking of such a thing," it editorialized, "particularly in San Francisco, the home of the Sierra Club, the proud Athens of the conservation movement and the hotbed of opposition to any export of surplus water from Northern California to the south."

In fact, Hetch Hetchy reminds us that greed does not know geographic boundaries. Wherever we live, there are Mono Lakes and Hetch Hetchys at the other end of our taps.

... David Gaines

The Eyes Are Doors That Open to the Mind

A Conversation with Enid Larson

In 1976, when I was still an itinerant biologist, bird bum and despairing monophile, I attended a hearing on Mono Lake at Bishop High School. The Los Angeles Department of Water and Power spokesman droned glibly and unctuously on, belittling the threats to the lake, and prattling about his agency's sensitivity and concern for the Eastern Sierra environment. Then a petite, gray-haired woman took the podium, and made that DWP muckamuck regret he had gotten out of bed.

Enid Larson spoke with the authority of facts, the wisdom of age, and the eloquence and passion of one who knows and loves the land. It was as if a Mono Lake gull or an Owens River cottonwood was speaking for its home, its family. She swept despair from my soul, and kindled the strength, courage and spirit to defend Mono Lake.

This summer, Lauren Davis and I chatted with Enid at her home in Big Pine. Her yard is planted with fragrant sagebrush and other native plants. An accident had left her bedridden for weeks, and she was still unable to walk very far or visit her loved mountains. Yet her indomitable spirit shone through. Ignoring her temporary infirmities, she smiled impishly, and told us she would be hiking the hills again in no time.

... David Gaines

DAVE: A fellow came into our visitor center who had been one of your high school students. He said you changed his life. Could we talk about your teaching philosophy . . .

ENID: I shocked some colleagues. The head of the department said, "You can't teach that way. You've got to teach facts." But biology is a living subject. It is not something to memorize. It is not something that you read about. You must become one with nature and recognize that you are part of the universe. Until you develop that philosophy, there's no use going into a classroom.

DAVE: Most teachers make kids stop wanting to learn.

ENID: Of course! I knew something of the outdoors and I knew the blessings and the great inward satisfaction of working with living animals. And when we couldn't go outdoors, we had an aquarium on every table with living organisms for those students to study.

DAVE: How did you use the aquariums?

ENID: I ought to give you an example. There was one rule about the aquariums. If they poured anything into an aquarium, that aquarium stayed on their desks and they watched the changes that took place. So one day, a boy did pour something into an aquarium that killed about all the animals and turned the water milky purple-black. The students didn't like the odor, and they came to me and said, "We want the aquarium off the desk because we don't like the odor." I said, "You remember what I said, if anything went into that aquarium, that aquarium stayed on your table and you

recorded the changes that took place." Well, it wasn't very pleasant, but we managed. And we watched that aquarium clear itself with the development of algae, and we watched the renewal of life because all life had not been killed. And I tell you, that was one of the great learning experiences in a classroom.

DAVE: Most of your students enjoyed being in your classroom?

ENID: Of course.

DAVE: That seems so simple, yet so many students hate school.

ENID: But if at an early age . . . you see, I didn't think you could change kids' attitudes, but I did. Once you go outdoors, there is a feeling. There's a feeling that human beings belong to the earth. These kids that know only television are denied. They are denied a chance to renew themselves through knowing that they are part of the environment. We've got to get this over to kids, and the way is not through being preached at, told or reading textbooks. They have to experience the outdoors. They've got to experience being a part of the environment.

DAVE: Your experience as a teacher is relevant to the Mono Lake Committee. We, too, are trying to awaken people to their place in the environment. If you were leading a field trip at the lake, how would you approach it?

ENID: That's a challenge. The trouble with most field trips is that the leaders tell this, that and the other. This ruins the whole learning experience. It ruins the opportunity to draw



Enid Larson and friend at the summer 1986 peace march in Bishop.

something out of people. Most teachers think they're there to answer questions. They're not. They're there to open doors of discovery. And the kids open their eyes, they ask the questions, and then we ask, "How do you think we can find the answer to that?"

LAUREN: Seems like you'd have to make sure that everybody had the right tools, like binoculars or magnifying glasses.

ENID: They don't need binoculars on a simple field trip. They just need their eyes. And the eyes are doors that open to the mind, and it is the questions that are important and not the answers, to explore, to discover, to keep an open mind, to take in your environment with every step.

DAVE: Then you feel teaching can be a means of establishing a relationship between a person and the environment that extends to how we live, that defines a right relationship between humans, other living things and places like Mono Lake?

ENID: That's what I'm trying to say. Now if Mono Lake is going to be saved . . . I shouldn't say saved. I don't like that. If Mono Lake is to exist, it will depend upon what things? You name them, not me. You. And the essential thing is that we become aware of our environment. But how do you communicate that awareness to somebody else? Now, people sit and look at television, and know and care nothing about Mono Lake. There was a boy who lived across the street, and he said, "Why don't you have a television?"

DAVE: Yes, why don't you have a television?

ENID: I answered that question to my students at school very simply. I said, "Well, I have only so much time to live and I asked myself, do I want to see pictures the rest of my life, or do I want to see real things? And this person voted to see real things." And you know, it just stopped all argument about television.

I think you have to make a choice between the real world and the artificial world. Half of this drug problem and alcohol problem stems from the fact they have never had the experience of going outdoors and seeing anything, of becoming aware of themselves in their environment. Once they get the experience of looking at, becoming interested in a species, whether it's a plant or an animal, whether it's a beetle or a crow, they can never turn back to the artificial world. Never! Whether they're 3 years old or 30 years old or 90 years old, they understand that they are a part of this life process that is bigger than any of us.

DAVE: It sounds like you feel the salvation of the world is in people being on friendly terms with other living things.

ENID: Of course!

DAVE: Yet the Los Angeles Department of Water and Power embodies, at least at present, a materialistic, industrial juggernaut that is turning places like Mono Lake into wastelands. As a cure, you're preaching a gospel of natural history. You're preaching a gospel of going to the real world. It's radical! You are a threat to the televised status quo.

ENID: Los Angeles has damaged every watershed it's ever come in contact with.

DAVE: So has San Francisco, so has agribusiness.

ENID: They haven't learned yet. There's a limit to growth.

DAVE: That's anathema to those people. They don't believe it. They don't believe the planet has a carrying capacity. Yet unless we heed that capacity, we're going to face terrible times . . .

ENID: We are facing terrible times! Oh, there I raised my voice; I'm sorry. But people can't accept the notion that there are limits. It's like children who can't accept limits to their behavior.

DAVE: Human population, like so many problems, seems out of our control. It's easy to think there's nothing we can do, but when I started the Mono Lake Committee, it also seemed hopeless, and now it doesn't anymore.

ENID: You know people are powerful once they gather round. And that's what I think about the Mono Lake Committee: it started small, but look at its ramifications in only six or seven years.

DAVE: What do we do if, despite all our efforts, DWP succeeds in maintaining the right to destroy Mono Lake . . .

ENID: You keep on.

DAVE: I've been reflecting on how much our work is inspired by you and others like yourself. You're our spiritual founders. You've taught us that, however important Mono Lake is in and of itself, there's more than that.

ENID: There's more than that. I'd say there's more than that.

DAVE: We're talking about something that cannot be measured in dollars and cents. How do we convey what is not quantifiable, that is, in essence, a spiritual value?

ENID: Well, there was a woman here last week that characterized spiritual values better than anything I ever heard. And she says that spiritual values are not a cross or a dogma or a book or the Bible, or this, that and the other, but something that is inside of a person that can be drawn out and passed onto another person. The spirit of Mono Lake enters everybody who has spent time there. That spirit can be drawn out of you and shared with somebody else. In doing so, you become aware of yourself and your environment, and you grow.

INYO FOREST PLAN NEEDS INPUT

The Inyo National Forest has released its Proposed Land and Resource Management Plan and Draft Environmental Impact Statement. It is soliciting public comments until Jan. 29, 1987.

The Inyo National Forest includes most of the land in the Eastern Sierra and White/Inyo Mountains from south of Lone Pine (Mount Whitney) north to Conway Summit (Mono Basin). It contains the Mono Lake watershed and borders much of Yosemite, Kings Canyon and Sequoia national parks. The Forest Service's preferred alternative calls for increased grazing and timber harvesting (including several stands of old growth red fir and Jeffrey pine), and would permit massive new ski development between Mammoth and June Lake. Only public participation will insure that the plan addresses all the needs and concerns of those who love the untrampled beauty of the Eastern Sierra.

You may still be able to receive a copy or summary of the proposed plan by contacting the Forest Supervisor, Inyo National Forest, 873 N. Main St., Bishop, CA 93514, (619) 873-5841. Workshops are scheduled for Glendale Jan. 6, San Ana Jan. 7 and Ridgecrest Jan. 8. A hearing will be held in Bishop Jan. 26. Contact the forest supervisor for times and locations. The proposed plan and draft EIS are hefty documents, so please allow yourself plenty of digestion time.

Research Updates NAS, CORI Panels Assess Lake's Future

To what extent is Mono Lake's life-productive ecosystem threatened by declining lake levels? For over a decade, researchers have been striving to understand how changes in lake level, salinity, water chemistry, temperature, mixing patterns and other parameters will affect algae, brine shrimp, alkali flies, birds and other organisms.

Two scientific panels are grappling with the problem as well. In 1984, Congress directed the National Academy of Sciences to assess the ecological impacts of water diversions. In the same year, the California Legislature funded a similar study, which was contracted to the Community Organization and Research Institute, a non-profit organization associated with the University of California at Santa Barbara.

Last November, I joined Mono Lake researchers at a meeting of the NAS and CORI panels in Santa Barbara. The panel members, eminent scientists from across the country, are not conducting new research, but are critically assessing what has already been done. While I wouldn't try to augur their ultimate conclusions, I was impressed with their understanding and analysis of the large and ever-growing body of data.

When other biologists and I organized the Mono Lake Committee in 1978, there were few studies to strengthen our fears of concern. The lake seemed on its way to becoming, as we said in our first position paper, "a grim, deserted deathscape." We saw little chance of brine shrimp, alkali flies and birds continuing to thrive in an increasingly saline environment. In place of birds, we prophesied clouds of alkali dust. But we didn't always have the hard data we would have liked.

Listening to the discussions in Santa Barbara, I realized how much we have learned in the intervening years. But I also realized that the Mono Lake ecosystem has posed unexpected complexities that makes prognostication difficult.

Still the years of research have clearly justified our concerns. In a paper published in 1986, U.C. Santa Barbara biologists Gayle Dana and Petra Lenz conclude that extinction of Mono Lake's unique, endemic brine shrimp "is highly probably above 133 g/l, well below the salinities projected for Mono Lake when it reaches equilibrium." U.C. Irvine biologist David Herbst projects similarly drastic declines in alkali fly populations. The Los Angeles Department of Water and Power's recent bathymetric study confirms the eventual land-bridging of all major islands. U.C. Berkeley geographer Scott Stine predicts the formation of "badlands" topography on much of the shoreline, and the probable loss of wetlands like Simon's Spring. U.C. Davis physicist Thomas Cahill warns of up to 10-fold increases in the magnitude of dust storms.

This is not to say the Mono Lake Committee has always been right. In 1979, when most of the gulls were routed from Negit Island, we did not think significant numbers would move to the islets west of Paoha. At the lake's low ebb in 1981, when the death of virtually all the gull chicks followed a precipitous decline in spring brine shrimp, we were too quick to link the two events; while the scarcity of shrimp may have been a contributing factor, heat was apparently the proximate agent.

In cases like these, the Mono Lake Committee has been criticized for jumping to premature conclusions that support our crusade to save Mono Lake. To some extent this criticism is valid. But I also believe we have the responsibility to vigorously sound early warnings, even if all the evidence is not yet in.

In this light, I thought David Herbst's remarks in Santa Barbara were particularly important. Herbst emphasized that the sublethal effects of declining lake levels could interact synergistically, and cause Mono's ecosystem to unravel long before the lake reached the lethal salinities identified in laboratory studies. Faced with such uncertainty, I think we should err on the side of caution.

We will have to wait six months for the NAS report, and almost a year for the CORI study. We can only hope that both panels will identify lake levels high enough to assure a healthy, thriving Mono Lake ecosystem that can survive even during periods of prolonged drought.

The following research reports, while not always easy reading, convey the ongoing effort to understand scientifically a complex environment. For more information, you can contact the individual researchers.

... David Gaines

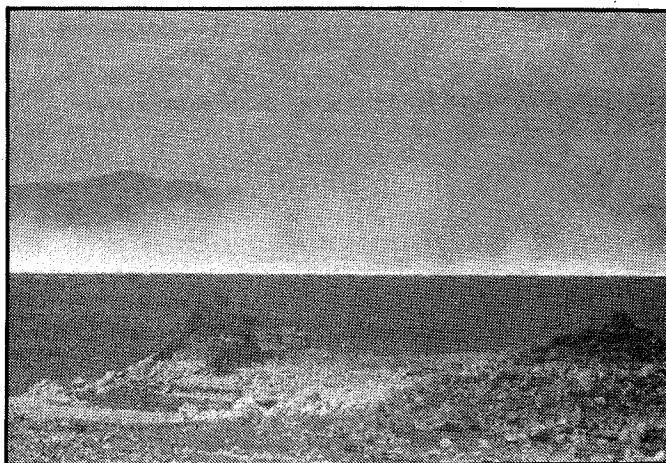
Atmospheric Particulates and Dust Storms

Thomas A. Cahill, Bruce H. Kusko and Thomas E. Gill
Air Quality Group, Crocker Nuclear Laboratory, University of California, Davis, CA 95616

We have been investigating atmospheric particulates and dust events around Mono Lake since 1979. Results indicate that particulate air quality is among the best in California about 90 percent of the time, yet during infrequent severe dust storms the region has some of the highest total suspended particulate levels ever recorded in the state. Even when faint dust is observed in the Mono Lake area, total suspended particulate levels usually exceed the state air quality standard. Physical and chemical studies of the dust storm aerosols showed that the dust is generated by the exposed playa areas along the lake's shore.

The particles suspended during dust storms consist primarily of crystalline sulfate and chloride salts of sodium, silicon and calcium. Trace quantities of several potentially toxic metals, including selenium, arsenic, mercury and lead, are present in the suspended dust and in the playa materials.

It appears that the elevated dust levels are generated by winds of



Larry Ford

If Mono Lake declines to 6,330 feet, dust levels could increase up to 10 times.

above 25 mph which loft large, sand-sized particles that saltate (bounce along the ground) and knock or grind finer particles off the efflorescent playa surface up into the airstream. This mechanism is enhanced by high wind shear and large fetch length across the playa surface, and by the fact that the playas are flat and unvegetated. This has exacerbated the blowing dust problem, because sufficient vegetation could provide "surface roughness" which would deflect the wind up above the playa surface and discourage the entrainment of fine particles into the atmosphere.

A computer model, the Mono-Owens Davis Dust Model, or MODDM, was used to predict dust levels downwind of the playa. Using a projected stabilization lake level of 6,330 feet, the predicted particulate mass rises by 180 percent (north playa), 480 percent (Paoha Island transect) and 1,080 percent (south playa). If the major dust fetch were decreased by raising lake levels or emplacement of water barriers, artificial structures or vegetation, it is likely that dust levels would be significantly decreased.

We are attempting to determine the possible biological effects of alkali dust storms at Mono Lake. Analysis of the size and composition of dust storm particles showed that they are between 2.5 and 15 microns in diameter, and thus inhalable into the human respiratory tract. It is possible that these particles could adversely affect the health of humans and other organisms, although the aerosols' toxicity has not been specifically determined.

At present, our group is preparing a comprehensive report. By

applying the MODDM to the topography and bathymetry of Mono Lake and its playa, we are developing projections of the magnitude and extent of future dust events as the lake level drops and the playa expands.

Our recent research was funded under a contract from the California Air Resources Board with assistance from the Great Basin Air Pollution Control District and other individuals and agencies. Our current study has been funded by a grant from the Community and Organization Research Institute, U.C. Santa Barbara.

Biogeochemistry of Mono Lake

Laurence G. Miller, Charles W. Culbertson and Ronald S. Oremland

United States Geological Survey, 345 Middlefield Rd., Menlo Park, CA 94025

We initiated studies three years ago to examine Mono Lake's biogeochemical response to a condition which developed in 1983. High spring runoff resulted in a layer of lighter, fresher water overlaying the heavier, more saline water deeper in the lake. This chemical stratification, or *meromixis*, has persisted ever since [for more details, see Mono Lake Newsletter 8 (3); 9]. The boundary between the layers, called the pycnocline, lies 50 to 60 feet below the surface. Biogeochemistry is the study of how biological, geological and chemical processes interact.

DWP Research Activities

Christopher Foley and Brian White

Los Angeles Department of Water and Power, Box 111, Los Angeles, CA 90051

As part of an integrated program to study the Mono Basin environment, the Los Angeles Department of Water and Power continued to fund and perform new and ongoing research during 1986. The following is a brief summary of our activities. Information generated will be provided to the National Academy of Sciences and Community and Organization Research Institute for their upcoming reports. For more information, please contact the authors.

LAKE BATHYMETRY AND GEOLOGY

To develop a better understanding of lake volume relationships and the distribution of important biological habitats, a "state-of-the-art" bathymetric and geologic mapping survey of Mono Lake's bottom features was recently completed by Pelagos Corp. This work was the result of a \$210,000 DWP grant. In addition to producing a detailed map of underwater topography, the survey gathered valuable information about lake-bottom substrates (rocks, sand, mud, tufa formations), biological habitats, geologic features (faults, volcanic intrusions, slumps) and subsurface gas and ground-water seeps. New and unexpected information about the life history of brine flies was also uncovered, and will be published in refereed scientific journals. Flies were discovered in deeper water than had ever been reported, and appear to utilize a wider variety of habitats than was suspected previously.

BASIN-WIDE GEOHYDROLOGY

Basin-wide geohydrologic monitoring programs designed to determine the magnitude of ground-water and freshwater spring flow contributions to the lake are continuing. Data-gathering activities have been expanded to include water quality analysis at all freshwater spring sites, and water level measurement at new shallow-profile wells in six locations on the lake's perimeter. The DWP Mono Lake hydrologic model was updated to include historic data through 1985 and the new area-capacity information developed from the bathymetric survey. The model was modified also to evaluate wet-year/dry-year occurrences using historic data. Overall assessment will be presented in an updated

report, "Mono Basin Geology and Hydrology," in early 1987. This report will include updated tables, a detailed discussion of springs, modified hydrologic model documentation and the new lake area-capacity curve.

AIR QUALITY MONITORING

The DWP continues to fund a program by the Great Basin Unified Air Pollution Control District involving the collection and analysis of meteorological and air-quality data at two locations around Mono Lake.

LAKE SHORE REVEGETATION

The DWP contracted with Environmental Monitoring and Services Inc. to study the possibility of establishing native vegetation, including various shrubs and grasses, on barren dust-source areas located on the northern and eastern shores of Mono Lake. The studies are being carried out in close cooperation with the Great Basin Unified Air Pollution Control District and its consultant, Dr. David Groeneveld.

BRINE SHRIMP ECOLOGY AND PHYTOPLANKTON DYNAMICS

The DWP also continues to fund brine shrimp and algal productivity monitoring and research conducted by U.C. Santa Barbara researchers Gayle Dana, Robert Jellison, Lee A. Dyer and Rebecca E. Todd under a research grant administered by Dr. John Melack. Please refer to the separate reports on "Brine Shrimp Dynamics" and "Algal Productivity" for details.

AVIAN BIOLOGY

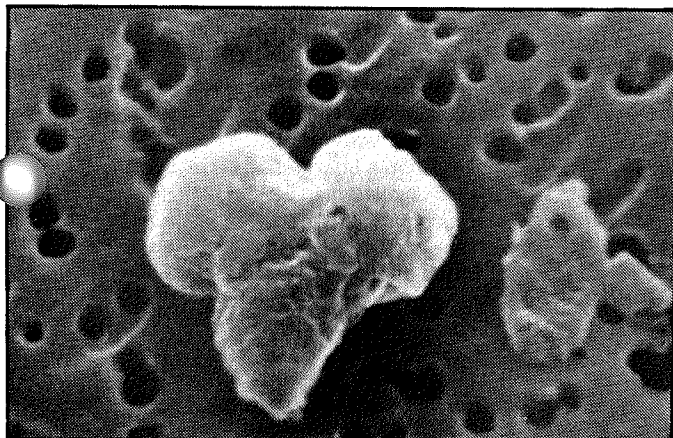
Dr. Joseph Jehl, assistant director of Sea World Research Institute in San Diego, is conducting continued ecological research on the gull, grebe and phalarope populations under a grant from DWP. Jehl's findings will provide new information on the distribution and abundance of birds throughout the lake, and identify the factors controlling population size of dominant species. Additional surveys were made at lakes and reservoirs throughout the Western United States and Canada to count other staging and molting grounds used by Wilson's phalaropes and eared grebes.

Several conditions common to meromictic, alkaline lakes now exist in Mono Lake. Oxygen, supplied near the surface by exchange with the atmosphere and by the photosynthetic activity of algae, disappears at 50 feet. Below this depth dissolved ammonia, sulfide and methane have increased to levels considerably greater than those measured prior to the onset of meromixis. We are currently involved in a multidisciplinary study of the relationships among microbial processes (methane production, sulfate reduction and methane oxidation) and the resulting geochemical profiles found in the sediments and the water column. This work involves the cooperation of other USGS scientists as well as visiting researchers from Denmark and Germany.

A dense microbial layer is present above the pycnocline and within the transition zone from an oxygenated to an oxygenless (anoxic) environment (40 to 50 feet). This zone is dominated by a small, photosynthesizing bacteria, previously undescribed, whose shape suggests Mickey Mouse's head. A total of 300,000 stretched ear to ear would be about an inch in length. We have counted an average of 100,000 "Mickey's" in a milliliter of water. They flourish on a diet of light, ammonia, hydrogen sulfide and carbon dioxide, and may serve as food for brine shrimp during part of their life cycle.

We are also investigating other microbiological processes, and the sources and flux of methane (see p. 7).

"Mickey," an undescribed, photosynthesizing bacterium recently discovered in Mono Lake, enlarged approximately 20,000 times.



USGS

Algal Productivity

Robert Jellison

Department of Biological Sciences, University of California, Santa Barbara, CA 93106

During the past five years, Mono Lake's phytoplankton (floating algae) have shown significant differences in their seasonal dynamics. These differences arise primarily from changes in the vertical chemical structure of the lake and the timing and magnitude of the spring hatch of brine shrimp. We are especially interested in how vertical salinity gradients affect algal productivity and thus brine shrimp survival and fecundity, since a proposed wet-year/dry-year policy of diversions may affect the occurrence and persistence of these gradients.

In 1983, spring runoff from heavy snowfall and reduced diversions resulted in the onset of meromixis, which has persisted until the present (see "biogeochemistry" above). If meromixis is pronounced, it prevents winter mixing, and nutrients accumulate in the bottom waters

where they are unavailable to photosynthesizing algae (most deep, temperate lakes mix from top to bottom each fall as surface waters cool and sink, replenishing the upper waters with nutrients derived from decaying organic matter). If nutrients build up to very high levels in the bottom waters, however, even the limited mixing in meromictic lakes may support high levels of algal growth.

Since the algae-feeding brine shrimp are mostly absent in early spring, differences in spring abundance of algae primarily reflect differences in growth rates. In the spring of 1984, we saw a dramatic decline in algae following the onset of meromixis. These low spring algal levels occurred again in 1985. However, each year the lake has mixed a few meters deeper, and nutrient levels have increased in the bottom waters. This year we saw a return to much higher levels of algae during the spring.

To explain this, we have formulated a tentative hypothesis. Although the lake has not mixed completely, the buildup of ammonia in the bottom waters to extremely high levels may have led to an increase in the supply of nutrients to the upper waters and increased growth by the algae.

During the last three years, the rates of summer algal growth have been similar and very high (among the highest reported for any lake). Our calculations show that the excretion of ammonia by the brine shrimp is sufficient to support these high growth rates. This tight cycling of nutrients is the key to Mono's high summer productivity.

Next year may bring yet a different pattern, as inflowing fresh water has formed new chemical gradients. We will be watching to see which effect will dominate the vertical supply of nutrients: the decrease in mixing due to additional salinity gradients above the old ones, or the increase due to limited mixing of increasingly nutrient-rich bottom waters.

Brine Shrimp Population Dynamics

Gayle L. Dana, Rebecca E. Todd and Lee A. Dyer

Marine Sciences Institute, University of California, Santa Barbara, CA 93106

Mono Lake's shrimp hatch from overwintering cysts from January to May, and mature into the first generation. They have two modes of reproduction: ovoviviparous (live young), in which shrimp hatch from thin-shelled eggs in the uterus of the female, and oviparous (cysts), in which the cysts sink to the lake bottom where they undergo an obligate dormancy during the winter. Adults from the first generation produce live young in May and June, which mature into the second generation. Both first- and second-generation adults produce overwintering cysts through the summer until the population dies off in the fall.

We have been studying the shrimp's population dynamics since 1978. In 1986, relatively large numbers of nauplii (newly hatched shrimp) were observed in January and February, and development to the adult stage occurred two weeks earlier than in previous years. The abundance of first-generation animals was similar to 1984 and 1985 (ca. 40,000 to 45,000 animals per meter squared of lake surface). Earlier hatching may be related to the deepening of the oxygenated mixed layer. Cysts can successfully complete dormancy in anoxic water, but hatching requires oxygen. Therefore, cysts which had completed dormancy but could not hatch in 1985 because they were in anoxic water, could have hatched in 1986 once the oxygenated water layer deepened.

One important factor is the number of eggs which are deposited in the sediment. We are measuring cyst deposition rates with traps suspended in the water column, which collects the cysts as they sink. We also measured cyst densities in the sediments by taking cores over a 45-station grid. Results are not yet available.

The number of second-generation nauplii counted in 1986 (51,000 animals per meter squared) was higher than 1985 (35,000) and 1984 (5,000), probably due to higher female abundance and brood size. Recruitment into the adult summer population, however, was low, indicating poor survival. Low food levels and competition with first-generation adults probably contributed to their low survival.

In 1987, in addition to studies of population dynamics and cyst deposition rates, we plan to determine reproductive rates, growth rates and biomass from laboratory experiments. We can then apply this data to shrimp abundance data from previous years to estimate yearly production, and calculate birth and death rates for the two generations.

Alkali Flies

David B. Herbst

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Mammoth Lakes, CA 93546

1986 marked the 10th year since I began research at Mono Lake, and the completion of my Ph.D. thesis on the biology of the alkali fly, *Ephydra hians*. These flies belong to a family of recently evolved insects that have adapted to live in such varied habitats as hot springs, ephemeral ponds, tidal splash pools, saline and alkaline lakes and even crude petroleum.

My current studies began last spring with surveys of saline desert waters in the vicinity of Death Valley. The surveys provide information on how the distribution and abundance of these unusual insects is related to the chemical composition and concentration of desert waters.

At Mono Lake, I have now established a sampling methodology for censusing the population density of larvae and pupae in shallow lake-bottom habitats around the entire lake. The objective is to measure the annual and seasonal population growth patterns over different substrates, (tufa, sand, mud) and water depths. Initial results indicate that larvae and pupae have clumped distributions, with densities highest on tufa substrates and sediments rich in algal content.

The Mono Lake fly has been called the alkali rather than the brine fly because of its preference for alkaline waters. My studies have confirmed further this insect's special adaptations to this water chemistry.

The desert lakes and ponds these flies reside in are usually located in remote areas. Windswept and cold in winter, or shimmering in the still of summer heat, their lonely shores are not often visited. So it is with a sense of discovery that I have been exploring these inhospitable worlds in search of clues to the mystery of what makes them habitable.

Population Size and Reproductive Success of Gulls in 1986

W. David Shuford

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



In 1986, Point Reyes Bird Observatory completed its fourth year of study of the California's gull's reproductive success. From cooperative nest counts with Joseph R. Jehl Jr. we estimated 49,000, which was the first increase over the 44,000 to 45,000 adults that had been nesting since our work began. Most of this increase occurred on the Negit Islets, particularly on Twain Islet, which now supports roughly half of the entire Mono Lake population. As some of you gull watchers will remember, the gulls failed to breed successfully on Twain in 1982 when the lake level was at its historical low point and coyotes crossed over from the mainland. The nesting population on Negit Island increased to 636 pairs from the 92 pairs that recolonized it in 1985 while Paoha Island hosted 102 pairs compared to two in 1985.

Mortality at all stages of the nesting cycle was the lowest of any year of our work, and about 33,000 chicks fledged from the nesting islands. The explanation for this exceptionally high productivity is unclear. Weather was mild and tick infestations of the chicks were low, both of which probably had a positive effect on nesting success. As is typical of most years at Mono Lake, the gulls fed their chicks primarily brine shrimp and brine flies. Whether the available food supply was larger than other years—and whether this had a marked effect on breeding success—is unknown. This deserves serious study considering the gulls' dependence on the lake's two abundant invertebrates which may be affected by future increases in the lake's salinity. Although high nesting densities are suspected of having adverse effects on nesting success, all of our study plots had much higher productivity in 1986 compared to 1985, regardless of increasing or decreasing nest densities.

If we've learned anything in our four years of work at the lake, it's that every year is a "weird" year with its own special set of circumstances affecting the success of the gulls' breeding efforts.

The Eared Grebes of Mono Lake: Where Do They all Come From?

Joseph R. Jehl Jr.

Research Director, Sea World Research Institute, Hubbs
Marine Research Center.

Mono Lake is one of the major staging points for eared grebes in North America. Each autumn an estimated 750,000 birds congregate and remain there until early winter. During their three- to six-month residence, the birds molt and put on weight before continuing southward. After food supplies fail, they migrate, evidently to major wintering grounds at Salton Sea and Gulf of California. But where do birds that stage at Mono Lake come from? Preliminary studies suggest that breeding areas in the far western U.S. and Canada are the likely sources, but the data are scanty.

Since 1980, Hubbs Marine Research Center scientists have studied waterbirds at Mono Lake (with support from the Los Angeles Department of Water and Power). One aspect of the research has been understanding the post-breeding biology of the eared grebe, a species that occupies highly saline habitats for much of the year. In addition to studying abundance, timing of migration, molt, food habits and ecological requirements, Pamela Yochem and I have begun a banding program to examine the species' movements in detail. Just where do the birds come from, and where do they go when they leave the lake?

In 1985 and 1986, with the help of Suzanne Bond and Brent Stewart, Hugh Ellis (University of San Diego) and A.S. Grant (Ohio State University), we banded and released 434 eared grebes. Previously, through 1984, only 4,076 eared grebes had been banded in all of North America, mostly as a byproduct of waterfowl banding programs. We hope that this more concentrated study will greatly increase our knowledge of grebe migration.

Although we have not yet been informed of any banding recovery the program is already paying dividends. Data on weight, age, sex and molt condition, which are obtained routinely on each captured bird, enable us to determine the composition of the flock through the fall, study the migration periods of adults vs. juveniles, and monitor the condition of the birds. The relative abundance of young each year also provides a rough index to the breeding success of grebes in those still-unknown regions where the Mono Lake migrants originate.

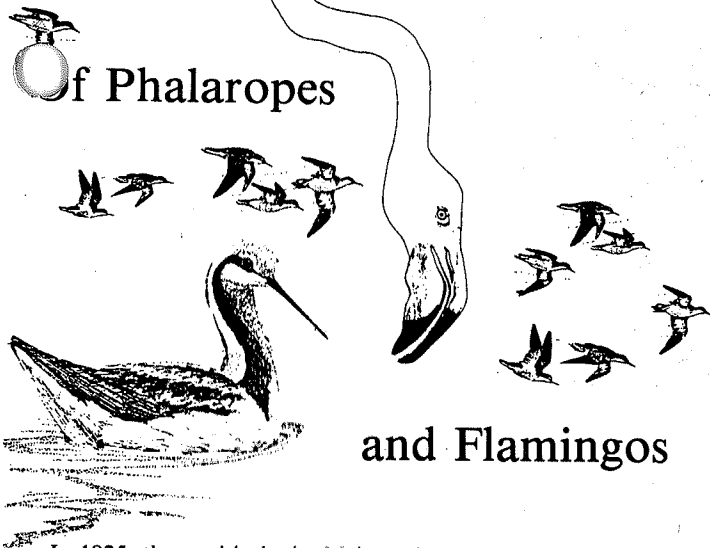
Incidental to this work, we also captured several species of ducks (ruddy, mallard, gadwall, shoveler), a coot and three other species of grebes (western, horned, pied-billed). The grebes were all emaciated and in poor condition, because they are unable to feed successfully on the tiny invertebrate prey that form the basis of the eared grebes' diet. We released them at nearby Grant Lake to improve their chances of survival.

MONO'S METHANE: Another Threat Bubbles Up

Bacteria feeding on dead plankton more than 50,000 years ago may not seem like news today. But these bacteria produced methane deposits that U.S. Geological Survey geologists believe "may be of economic consequence."

Laurence G. Miller and Ronald S. Oremland, who are experts on methane geochemistry, have discovered methane bubbling out of at least 600 seeps around and beneath Mono Lake. They calculate that the natural gas leaving the lake could satisfy the energy demands of 10,000 people. "Based on the fact you see methane coming out of the lake in such quantities," says Oremland, "it's reasonable to assume there's a larger reservoir down there."

Oremland warns of "profound environmental consequences" with the lake "peppered with drilling rigs, pipelines and transport hookups." The Mono Basin National Forest Scenic Area legislation, however, appears to preclude such development, and the Mono Lake Committee would fiercely oppose it.



GRAZING AWAY THE SCENIC AREA: *Report Looks at Pastoral Problems*

In the waning warmth of Indian summer, we followed one of Mono's creeks into a meadow of short-cropped grass. The stems of willows and cottonwoods were tangled with tufts of fleece which hung on the twigs like cotton.

To the uninitiated, these bits of wool are the only reminder that thousands of sheep grazed the Mono Basin over the summer. But the sheep, with their systematic munching, have marked the plants, soil and water in many other ways. Besides turning meadows into close-mown stubble or barren wastes, they have defoliated aspens, willows and cottonwoods as high as they can reach, and trampled vegetation and streambanks.

Last June, the Mono Lake Foundation asked Ann Dennis, a range management consultant, to evaluate the impact of livestock grazing in the Mono Basin National Forest Scenic Area, i.e., the region around Mono Lake and the Mono Craters. Her report finds that brush invasion of meadows, and destruction and gullying are clearly due to a long history of grazing overuse. Livestock are also reducing or eliminating herbaceous plants such as bunchgrasses, paintbrushes and buckwheats which grow between sagebrush and other shrubs. Cattle are causing considerable damage to indigenous Indian ricegrass stands near the northeast shore of Mono Lake. Sheep may be interfering with nesting waterfowl in wetland habitats.

Now we need to address two other questions of critical importance: (1) What range conditions existed prior to the introduction of domestic animals in the 1860s, when more than 200,000 sheep were herded through the basin, and (2) what is the current impact of livestock on pronghorn antelope, deer, sage grouse, vesper sparrows and other native wildlife? Domestic stock competes with native species that browse or graze on the same plants, or depend on cover for shelter or nest sites. →



Lauren Davis and Vireo Gaines stand in an ungrazed meadow below the Mono Lake County Park. Across the fence to their right, cattle and horses have grazed the meadow into close-cropped stubble, destroying the nesting habitat of common snipe, Wilson's phalaropes, red-winged blackbirds, savannah sparrows and other birds and animals.

In 1925, the ornithologist Meinertzhagen wrote of "the mystery which surrounds the water quarters of the phalarope." Five decades later, biologists discovered that Mono Lake's most numerous shore bird, the Wilson's phalarope, is probably the most numerous bird in the Andean altiplano during the austral summer (our winter). And guess what? They congregate by the tens and sometimes hundreds of thousands on high-elevation, saline lakes. For example, in February 1979, there were "many hundreds of thousands" on Bolivia's Laguna Laromayu, which lies at an elevation of 15,100 feet, has a salinity similar to Mono's, and supports large numbers of brine shrimp.

Three ornithologists, Stuart H. Hurlbert, Matilde Lopez and James O. Keith, discuss their discovery in an article in the *Revista Chilena de Historia Natural* (1984; 57:47-57). Outside the altiplano, Wilson's phalaropes have been found only in South America at scattered localities in small numbers. They probably fly nonstop several thousand miles from Mono Lake, Great Salt Lake and other Great Basin staging areas to the central Andes.

The article describes a scene on Bolivia's Laguna Kalina (14,700 feet) that recurs at Mono Lake every year: "At one point along the western shoreline we observed one mud flat that was dark gray, unlike the whitish calcium carbonate mud flats seen elsewhere in the lake. A moment later this darker 'mud flat' self-levitated and dispersed over the lake; it was a single flock of roughly 30,000 Wilson's phalaropes."

Hurlbert and his colleagues were not lured to the altiplano lakes by phalaropes, but by flamingos. The phalaropes sometimes flock among one of these species, the Chilean flamingo, in order to harvest invertebrates the larger birds stir up from the lake bottom. The flamingos, Hurlbert reports, are "very tolerant of the phalaropes, despite the insolence with which the latter dodge about the flamingos' legs."

Since flamingos thrive at these saline altiplano lakes, one wonders why they don't occur at Mono, Great Salt and other similar Great Basin lakes as well. In fact, the fossil record proves they used to be here. Perhaps prolonged droughts, which at times dessicated most of our lakes, caused their extinction.

In any case, as blizzards blast the tufa towers and Mono Lake huddles beneath an icy blanket of fog, let us think of Wilson's phalaropes cavorting with flamingos in the austral summer of the high Andes.

... David Gaines

As early as 1881, the geologist Israel Russell observed that, due to overgrazing, "the natural pastures [around Mono Lake] are now nearly ruined." But this remark, while suggestive of grassier conditions, does not tell us much about species composition or vegetative structure. Dennis suggests another, recently developed technique that might help: through analysis of silica particles left in the soil by decaying vegetation, it may be possible to determine the kinds of plants that formerly grew there.

The Scenic Area legislation, by requiring the protection of "ecologic resources," gives native vegetation and wildlife precedence over livestock and other conflicting uses. This means, we believe, the restoration of pristine, pre-livestock conditions and the reintroduction of extirpated species. While Dennis' report is an excellent beginning, we still need to determine if any grazing is compatible with protection of the Scenic Area's ecologic resources.

... Lauren Davis and David Gaines

MLC NEWS AND ACTIVITIES

BIRD-A-THON: Beyond the Numbers

Three cars bounced over the rutted road. The low afternoon sun broke through the clouds, illuminating the tracing of new snow on the Mono Craters. Dave Gaines pulled the dusty station wagon to a stop in front of a herd of slow-eyed steers. He jumped out to open the cattle gate. "Hey, here's a cowbird!" he called back. Sliding back into the driver's seat, he explained, "Today a cowbird is worth as much as a golden eagle."

In nature's scheme of things, a cowbird is probably always worth as much as a golden eagle, but sometimes it takes added incentive to make us realize it. Dave had good reason to rejoice. He had pledges amounting to \$50 per species. During the bird-a-thon, he managed to count 123 species, breaking his own record. The fund-raiser as a whole has grossed approximately \$75,000 for the Mono Lake Committee and the Point Reyes Bird Observatory, and pledges are still coming in.

By sunset, our little band of birders was down among the tufa at South Grove looking for owls in the fading light. After a familiar "hoot" reached our ears, we called it a day. As we packed the equipment, a piercing cry fell down upon us. Overhead a large bird rode the air current up the face of Panum Crater. All we could see was the dark shape of wings silhouetted against the constellations. "What a perfect way to end," exclaimed Dave, "with a mystery bird." With a final call, the black form headed south, leaving us to winter.

... Lauren Davis

Mono Lake Internships

We have openings for winter (January-May), spring (April-May) and summer (June-August) interns in our Lee Vining office. Interns work full time staffing our information center, answering mail, leading field trips and on other projects. To apply or for further information, please contact Debby Parker at our Lee Vining office. Application deadlines are immediately for the winter position, Feb. 28 (spring) and May 31 (summer).

Gee, Thanks!

The response to the year-end appeal to our members has been fantastic. Your additional contribution has provided badly needed funds to continue our campaign to preserve Mono Lake and its streams. Since we can't thank everyone personally, we would like to extend our heartfelt thanks to all of you by way of the newsletter.

ALASKA IN '87: An Experience for You, a Benefit for Mono Lake

Interest in our two-week sojourn to Alaska is running high. We've already received over 160 inquiries. If you've been wanting a wildlands experience in the "Great North," this is your chance to benefit yourself and Mono Lake as well.

The final itinerary for the June 21 to July 4 adventure includes five full days in Denali National Park, maritime excursions through glacial fjords and wildlife refuges, visits to rustic Alaskan towns, a face-to-face meeting with the impressive Columbia Glacier, a journey through the mountainous Chugach Range, as well as time to explore the sights from the Alaskan "bush" to downtown Anchorage.

The trip can be extended to include a side trip to Glacier Bay National Park. One day and night will be spent on a small cruise ship touring the bay and its shore with a naturalist. The second night will be in the Glacier Bay Lodge with the following day open for further exploration of the park. The return trip will be through Juneau where additional excursions and activities will be available.

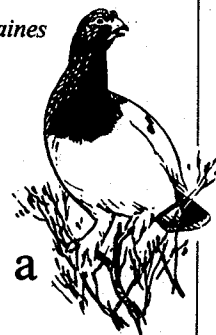
The cost is \$2,352 per person for 14 days, less \$100 if the reservation deposit is made before Feb. 1, 1987. Trip fee includes a \$300 tax-deductible contribution toward saving Mono Lake. Air fare to Anchorage is additional.

This journey will not be a "touch-base" kind of trip, but will offer time for savoring the environment. Interested? For full information, please send a self-addressed, legal-size envelope to: ALASKA '87, c/o M. Bennett, 2719 Marin Ave., Berkeley, CA 94708.

Trips to See Elephant Seals Jan. 27 and Feb. 12

The Mono Lake Committee again is sponsoring bus tours to see the elephant seals at Ano Nuevo State Park. This is a three-mile, naturalist-guided tour to a unique natural site. The bus leaves the north Berkeley BART station at 9 a.m. and returns at 5 p.m. Cost is \$19 per person prior to Jan. 15, \$21 after that date. Last year the trips filled quickly. The tour will happen rain or shine because the seals are always there.

To attend, send a check (payable to the Mono Lake Committee) to M. Bennett, 2719 Marin Ave., Berkeley, CA 94708, (415) 526-1260.



Bike-a-thoners Reverse the Flow

This year, 60 dedicated cyclists scooped water from the Los Angeles Department of Water and Power's moat-like reflecting pool in downtown Los Angeles, and disappeared into the traffic and smog. For the better part of a week, riders battled gravity and politics to carry the water 350 miles, across mountains and deserts, to its natural destination: Mono Lake.

The cyclists arrived to cheers from over 100 bucket walkers and friends. The exuberant gathering meandered downslope to the lake shore to pour their buckets and vials of aqueduct water back into Mono. One of the bike-a-thoners remarked, "Father Christopher Kelley's speech at the rehydration ceremony brought tears to my eyes." Tears were an appropriate response to Kelley's sermon, which focused on the profound significance of salty brine as the source of life on earth, the main component of our own bodies and the fertile fluid that fills Mono Lake.

The bike-a-thon already has raised \$23,500 for the Mono Lake Committee, and pledges are still coming in.

Congratulations, Bike-a-thoners and Supporters!

A cheery thank-you to all our intrepid bike-a-thoners and the people and organizations that supported their efforts.

Riders: Ann Bogazianos, Brenda Bauman, Ken Brummel-Smith, Ara Caravello, Jeanne Cosby, Brian Day, Everett Delano, Michael Dressler, Diane Filip, Joseph Filip, Drew Fitzmorris, Martin Fouts, Carolyn Froberg, Bert Glenn, John Graham, Helen Green, John Gegan, Navid Haghdan, Craig Hansen, Mike Hart, Dave Jensen, Fr. Christopher Kelley, Julie Klingmann, Barbara Kniffen, Alice Krueper, Mark Lawton, Brian Lewis, Michael Longacre, Ryan Longacre, Geoff Laurey, Vicki Marugg, Jill McIntire, Bill Mendoza, Kim Mundsack, Karen O'Donoghue, Miriam Palatnik, Karen Plemmans, Bill Rau, Donna Raupp, Ian Riedel, Barbara Rivenes, Joe Saunders, John Schaefer, John Scherer, Duane Simshauser, Marlee Sondgeroth, Scott Stephens, Stuart Surkes, David Thorley, Ana Toro, George Tredick, Susan Urquhart, Phil Van Horn, Norma Vedder, Terry Vickers, Matt Vining, Laura Walker, Joby White, David Wimpfheimer and Herb Wright.

Support Drivers: Doug Burrows, Martha Davis, Kimberley Fisher, Mary Alice Kelley, Ingerborg Prochazka, Don Rivenes and Gloria Shanks.

General support: Dan Burdick, Linda Carl, Fred Dun, Daemon Filson, Joanne Fleischer, Tim Gray, Dell Harper, Louis Henderson, Ann Kelly, Les Kelley, Bob and Angela Lage, Erin Landy, Nell Patterson and Kathleen Reddick Yager.

Generous and helpful organizations: K.H.S. Inc.; Wilderness Group Inc.; St. Augustine By-the-Sea Episcopal Church, Santa Monica; St. Timothy's Episcopal Church, Bishop; Gray's Graphics; and The Bike Shop List.

Memorial Contributions

We wish to thank all of you who have sent in memorial contributions: in memory of Palm Stout, by Lilyon Tonkoff; Zezette Coscia of San Rafael and Mary Summers of Kentfield; in memory of Peter Blos, by May Blos; in memory of Lucile K. Smith, by Myra Keplinger; in memory of William W. Stinson, by Mary L. Stinson; and in memory of Evelyn Zerby, by Mr. and Mrs. Richard Felkel.

Hellos and Goodbyes

This fall Sally Miller and Lauren Davis joined our staff in the Lee Vining office. Sally, who has been a volunteer and intern for many years, is now our mail clerk. Lauren is the new assistant editor, and works with Dave Gaines to bring you the newsletter.

We already miss Marna Ikenberry and Nina Redway, who bid us adieu this autumn. For over three years, Marna has been much more than our "business manager." As a devoted, articulate monophile, she has stepped in to handle media, lobbying, VIPs and fund-raising whenever needed, and done so extremely well. She has accepted an important position on the staff of California Assemblyman Sam Farr, but will continue to volunteer for Mono Lake as well.

Nina, who as associate director helped forge a crucial alliance between MLC and Los Angeles water quality activists, will lead the campaign to close the Rancho Seco nuclear power plant.

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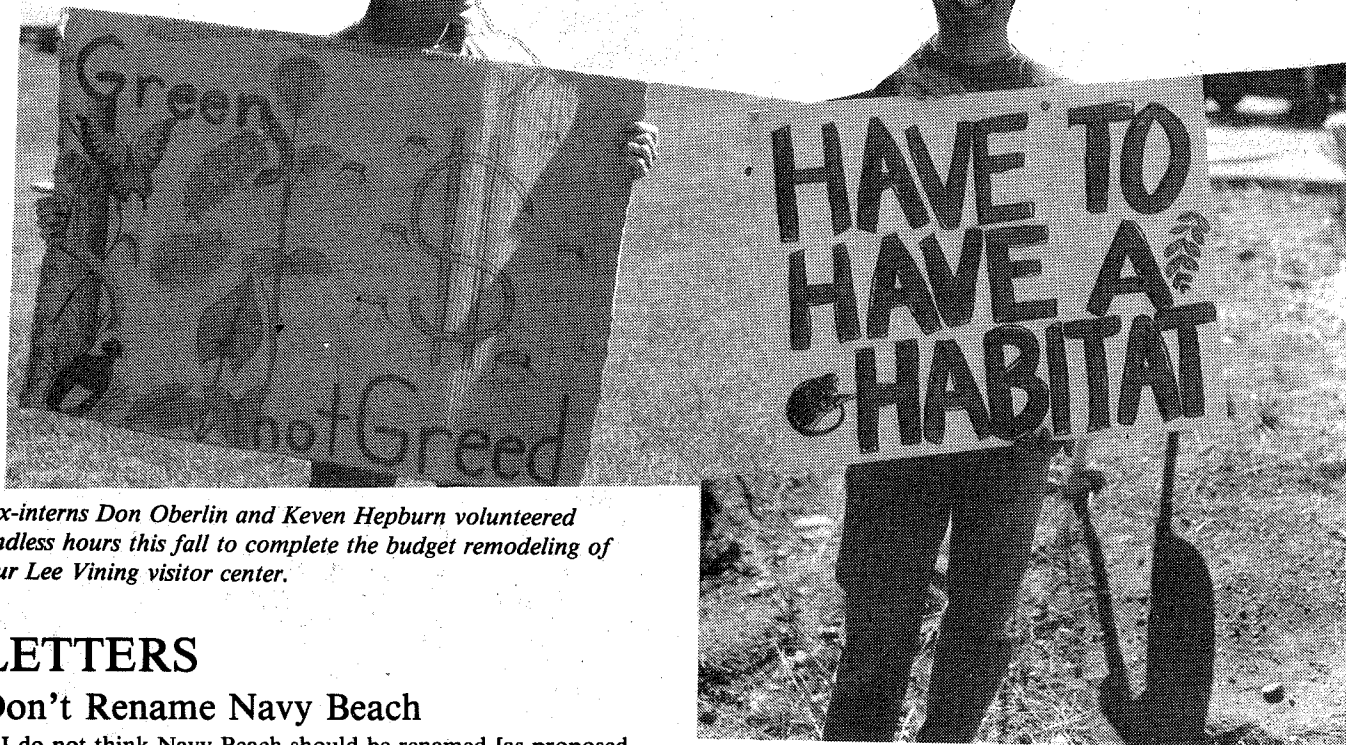
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Ex-interns Don Oberlin and Keven Hepburn volunteered endless hours this fall to complete the budget remodeling of our Lee Vining visitor center.

LETTERS

Don't Rename Navy Beach

I do not think Navy Beach should be renamed [as proposed in the autumn newsletter]. As Kutsavi said, "It memorializes a brief military exercise that should never have happened, and hopefully will never happen again." This is the very reason why the name should be retained! Years ago I asked about the unusual name, and was told the story. If it had been Kuzapa Beach, whose curiosity would have been piqued? The name "Navy Beach," on the other hand, promotes awareness and sensitivity to the military atrocity that was carried on there.

... *Barbara Bania*

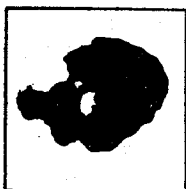
ACCOLADES

We are grateful to the many monophiles who volunteer to help us preserve Mono Lake. To all of you, especially those we forget to mention by name, we'd like to express our thanks.

Our Lee Vining office sends hugs of appreciation to volunteers Al Reynolds, Matt Vining, Betty Brown, Chris Christensen, Kevin Hepburn, Sam Cuenca, Jody Brown, Don Oberlin and Don Ranbeau.

JOIN US!

Still not a Mono Lake Committee member? Join us, and increase our strength and effectiveness. We will keep you informed, through our quarterly newsletter and action alerts, of what's happening and how you can help. Regular membership is \$20/year (\$30 Sponsor, \$50 Supporting Member, \$100 Monophile, \$500 Monomaniac, \$8 "I Can't Afford More"). Checks should be payable to the Mono Lake Committee, and are not tax deductible.



**The
Mono Lake
Committee**

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