THEMONO LAKENEWSLETTER

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The quarterly Mono Lake Newsletter features updates on the latest developments affecting Mono Lake's future as well as articles on the natural, geological and human history of Mono and other Great Basin lakes, reviews of current research and recent publications, and announcements of field trips and talks. We invite your comments and contributions. The newletter is edited by the Mono Lake Committee in cooperation with the Mono Lake Coalition.



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Water Reform Initiative Needs 500,000 Signatures

Signature gathering efforts are in full swing throughout California to place a water reform initiative, the Water Resources Conservation and Efficiency Act, on the November 1982 California ballot. Half a million signatures are needed within the next few months.

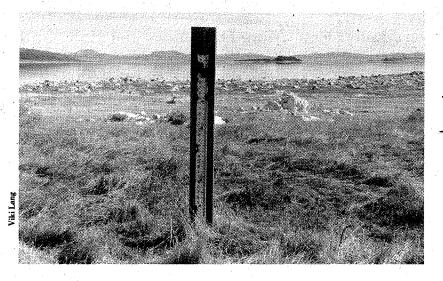
The Mono Lake Committee fully supports the initiation which would control the overdraft of groundwater basins, encourage water conservation, and mandate the protection of rivers, lakes, bays, estuaries and wetlands. For more information please turn to p.13.

ON THE COVER: A photograph of the colorful Mono Lake Quilt handmade by a group of East Bay women under the sponsorship of the Golden Gate Audubon Society. The top pictures the Sierra Nevada and the elements of the weather: rain, wind, snow and sun. On the left are Wilson's Phalaropes, Snowy Plovers, Black-tailed Jackrabbit, Sand-flat Lupine and Desert Poppy; on the right American Avocet, Eared Grebe, Checkerspot Butterfly and a California Gull. On the bottom are Apache Silverspot Butterfly, Rabbitbrush, Desert Peach, Blazing Star, Brine Fly, Tiger Beetle, Diatoms and Brine Shrimp.

The Mono Lake Quilt was designed by Richard Hugo, staff artist of the Sacramento Bee. The work was done by the following Golden Gate Auduboners: Barbara Beatty, Paty Boyd, Arvid Burman, Mary Carriger, Nancy Conzett, Diane Davenport, Jean Dehlinger, Helen Green, Diane Hersh, Emily Holden, Betty Kaspin, Barbara Kly, Jeanie Minor, Marty Morrow, Lucy Sandretto, Kasmith and Harriet Stull.

The quilt was the centerpiece of Golden Gate Audubon's 1981 Mono Lake fund-raising campaign, which netted over \$22,000 for the Audubon lawsuit and \$1,800 for the Mono Lake Committee. Thank you Golden Gate Auduboners!

Mono



Lake Watch

Trouble Ahead, Trouble Behind

Within the next few weeks California Gulls will return to a Mono Lake 18 inches lower and about two percent saltier than in 1981. Fourteen thousand gulls, 35% of the entire nesting population, will find their Twain Islet sanctuary connected to the mainland. They will find coyote tracks about last year's nests. They will find the mummified remains of their children . . . the 25,000 chicks that starved to death last year.

Angeles Department of Water and Power (DWP), we have nothing to worry about. Chief Aqueducts Engineer Duane Georgeson told a Los Angeles ABC television audience that "the ecosystem at Mono Lake is doing well... the brine shrimp are doing fine, the gulls are doing fine, the ... migratory birds which visit the lake are also doing fine ..." In fact, the DWP is "doing fine," but Mono Lake and its gulls are dying.

How can the DWP so blithely ignore the unprecedented decline in brine shrimp numbers over the past three years (see graph)? The connection of Negit Island and now Twain Islet to the mainland? The disappearance of most

kinds of ducks? The dearth of brine flies? The alkali dust storms?

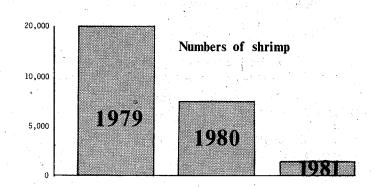
Why is DWP resorting to distortions and half-truths (see box)? Because they are ravishing Mono Lake, not for needed water, but for swollen profits. If Angelenos knew the truth, they would not let a greedy utility turn a natural treasure into a national disgrace in their names.

That's why we're redoubling our efforts in Los Angeles. We now have three dedicated staffers, Joe Marek and David and Barbara Takemoto-Weerts, working overtime out of our expanded L.A. office. Backed by the rest of us, they will be pushing for a moratorium on Mono Basin water diversions at least until brine shrimp recover and gulls are again able to successfully raise their young.

Our Lee Vining crew is girding for another gull disaster. We will be manning a predator-watch and, if brine shrimp fail, attempting to furnish the gulls with supplemental food. The gulls must not die in vain!

Mono Lake depends on us and we, in turn, depend on you for volunteer help and financial support. Please help us continue!

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Adult brine shrimp densities, Jane to early July, 1979-81. In 1980 numbers decreased by 50%; in 1981 they plummeted by 85-95%. By mid July of 1981, brine shrimp increased to supernormal numbers, but too late to save the starving gull chicks.

DWP on Mono Lake: More Distortions and Half Truths

DWP is continuing to feed the public misleading and fallacious information about Mono Lake. Are they hoping that the lake will die and the birds will disappear before anyone notices anything amiss?

In November, for instance, Chief Aqueducts Engineer Duane Georgeson told a Los Angeles KABC television audience that "there are ten times as many seagulls nesting at Mono Lake today as there were 40 years ago." He neglected to mention, however, that the gulls were devastated by egg-hunters during the mining booms; the eggs were sold in Bodie and other mining camps. Prior to egg-hunting, gulls nested on Paoha as well as Negit Island, and were probably more numerous than they are today.

Georgeson also remarked that the "gulls are doing fine," ignoring the statement of DWP's own biologist in the July 28, 1981 Los Angeles Times. In an article headlined "DWP Agrees on Gull Death Count," DWP admitted that "probably at least 90 percent" of the chicks had died. In fact, at least 25,000—95% of the hatch—perished.

"The fact of the matter is," continued Georgeson, "in communities like seagulls, on the average at least half the gulls die." But how does this explain the 95% mortality at Mono Lake last summer? Under normal conditions, about 50% of the chicks do die, but mostly within a week or two of hatching; at Mono Lake, most of the chicks died just before fledging, a most abnormal situation. The underlying cause was the paucity of brine shrimp, which came at a time when chicks were clamoring for food.

Contrary to Georgeson's incredible claim, brine shrimp were not "doing fine," especially if you happened to be a gull. Numbers of first generation shrimp declined by 85-95% in June of 1981.

Numbers increased in July as a result of a second hatch, but late to save the starving gull chicks.

Georgeson's glib comparisons of Mono Lake with Great Salt Lake were especially misleading. "The Great Salt Lake," he claimed, "where there are more gulls, more brine shrimp, more migratory birds . . . is twice as saline as Mono Lake. It will be 50 years before Mono Lake is even as salty as the Great Salt Lake, so the charge that Mono Lake is dying is greatly overstated." This conclusion is absolutely fallacious. To begin with, the lifeproductive south arm of Salt Lake is only slightly more saline than Mono Lake (12% compared to 9.5%). Salt Lake's north arm. isolated by a railroad causeway, has a salinity of 34% but supports little life. Moreover, Great Salt and Mono lakes are as different chemically as fresh water and sea water. Whereas Salt Lake's inhabitants have only to cope with sodium chloride (table salt). Mono's have to cope with sulfates, carbonates, borates and other solutes as well. Great Salt's brine shrimp, for instance, will not survive in Mono's alkaline water even at a fraction of its present salinity. Because of Mono's diverse chemistry, toxicity occurs at lower salinities than in Great Salt and other chloride lakes. In fact, to judge by starving gull chicks, dangerous levels may have already been reached.

Georgeson is intentionally twisting the facts to minimize the impact of DWP's water diversions. If he believes that Mono's water is more important to Los Angeles than it is to the people and birds who live at or visit Mono Lake, then he should be forthright and say so. But to muddy the water with half-truths and fallacious information is criminal, especially from a prestigious public utility that should properly be a neutral observer.

Mono Lake: A Land Worth Saving

by State Senator Dan O'Keefe

ed. note: This unsolicited article lifted our hopes and spirits. We greatly appreciate Senator O'Keefe's support for saving Mono Lake. He represents most of Santa Clara County.

One of the most striking features of California is Mono Lake, lying just ten miles east of Yosemite National Park. Overlooked for many years, Mono Lake has recently garnered widespread attention with the plight of its California Gulls and the environmentally fragile tufa towers which rise out of the lake.

The City of Los Angeles has, since 1941, diverted water from the major tributary streams feeding the lake into the Los Angeles Aqueduct for export to Southern California. Because Mono Lake now loses more water to evaporation than it receives in runoff, it is falling at a rate of one to two feet per year.

Over the years several measures to protect Mono Lake have been introduced in the legislature. Most have gone to defeat. However, one which I strongly supported, Senate Bill 83 authored by Senator Garamendi, has been enacted into law. This bill establishes the Mono Lake Tufa Reserve consisting of the state-owned parts of the Mono Lake bed lying at or below the elevation of 6,417 feet.

As we work toward protection of the area's geology we must be cognizant of its threatened wildlife. Last summer we with the tragic loss of over 25,000 California Gull chicks.

I feel certain that a balance between the water needs of Los Angeles and the preservation of Mono Lake is an attainable goal. I, for one, will continue to support any measures working toward this end.



Michael Dressler and his dog, Sierra, slog across the newly exposed landbridge from Twain Islet. Mainland predators threaten the 15,000 California Gulls that raise their young on the islet.

The (Revised) Mono Lake Committee Position

Our revised Position Paper, *Mono Lake: Endangered Oasis*, is now available. This 32-page pamphlet, ilustrated with photographs, drawings, figures, tables and graphs, discusses Mono Lake's geology, wildlife and history, the latest biological, political and legal developments, and the alternatives to the lake's destruction. Most importantly it documents the need for immediate action.

Copies of *Mono Lake: Endangered Oasis* are being sent to new and renewing members. If you would like to receive additional copies, please write us in Lee Vining. A small donation would be appreciated.

At the heart of *Mono Lake: Endangered Oasis* is the following revised statement of the Mono Lake Committee's Position:

The Mono Lake Committee seeks a compromise between the needs of Mono Lake and the needs of the City of Los Angeles. Since 1970, immoderate water diversions have reduced Mono Lake to the point where wildlife and air quality are seriously threatened. Unless immediate action is taken, there may soon be little left to save. For this reason, we advocate the following measures:

1. An interim moratorium on Mono Basin ter diversions until Mono Lake's California Gulls are again able to successfully raise their young.

Another year or two of famine will mean the extinction of Mono Lake's California Gull colony, 95% of the state's breeding population. This is too high a price. We appeal to Los Angeles to let Mono's streams replenish the lake at least until brine shrimp recover and gulls are again able to successfully rear their young.

2. Stabilization of Mono Lake ten feet above the minimum level required to support gulls and other wildlife in their recent abundance, and assure that alkali dust does not endanger vegetation or human health; until this level is determined, we advocate the interim stabilization of Mono Lake at 6,388 feet as recommended by the Interagency Mono Lake Task Force.

In 1979, after long and careful deliberation, the Interagency Task Force recommended that Mono Lake be stabilized at 6,388 feet. This is a prudent interim stabilization level. Negit would again be an island, alkali dust pollution would be substantially reduced, Mono's birds would

be threatened by famine, and the lake's pristine grandeur would be largely restored. Ultimately, Mono Lake must be stabilized at least 10 feet above the minimum level required to support its wildlife; this will assure a buffer against natural drops in lake level resulting from droughts.

3. A research program that monitors Mono Lake's health and projects the short- and long-term impacts of lowering the lake level.

Research should focus on determining the minimum lake level consistent with the preservation of Mono Lake's wildlife in its historical abundance. It should also address the long-term effects of alkali dust on human health and the environment. The research program should be administered by a neutral, politically insulated institution, such as the University of California, whose scientific objectivity is beyond reproach. While research is conducted, the lake must not be allowed to shrink in size or increase in salinity.

4. A "wet year/dry year" plan that limits diversions to dry years when Mono Basin water is really needed.

California's rainfall and water supply vary from year to year. In average and wet years, the state enjoys a surplus; in dry years a deficit. We advocate limiting diversions to dry years when precipitation in the Sierra Nevada is below average and alternative water supplies are not readily available.

5. A statewide program of urban and agricultural water conservation and wastewater reclamation that will obviate the future need for Mono Basin water.

Residents of Los Angeles consume no more than most Americans. Wherever we live we have been profligate in our use of water and other natural resources. Wherever we live, there are Mono Lakes at the other ends of our taps. Water conservation and reclamation are the life-giving alternatives to wasteful water projects that sicken our environment and mortgage our future.

6. Establishment of a Mono Lake National Park or National Monument.

Mono Lake's outstanding scenic, geological and wildlife values warrant national park recognition and management. The lake's national park stature has been recognized in study after study. The National Park Service is best equipped to protect Mono's tufa, islands, volcanoes and birds while facilitating appropriate visitor use and enjoyment.

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In The Legislature

Mono Lake Research Bill Proposed

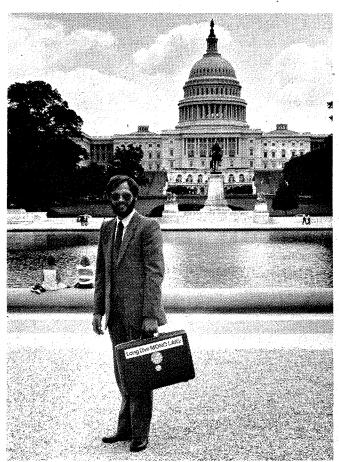
Assemblyman Norman Waters (D-Plymouth), whose district includes Mono Lake, is expected to introduce legislation that would fund a three-year Mono Lake research program.

The research, to be administered by the University of California, would evaluate the effects of declining lake levels, increasing salinity and related changes upon algae, brine shrimp, brine flies and birds. Research would also address the alkali dust menace and its implications for human health, wildlife and vegetation.

Unfortunately, the proposed research program would not curtail water diversions or stabilize Mono Lake. While MLC supports and encourages research, we do not want to study Mono's death agonies. For this reason, we support a reduction in diversions while research is conducted.

Save Mono Lake Legislation

We hope to see a strong "save Mono Lake" bill introduced in the California legislature this year. Such a bill would likely be based on the 1979 report of the *Interagency Task Force on Mono Lake*, which called for restoration of the lake to its 1970 elevation of 6,388 feet, and a modest program of water conservation and wastewater reclamation in Los Angeles. The Task Force recommendations were bitterly attacked by DWP. In 1980, a watereddown version of the Task Force plan received a majority of votes on the Assembly floor, but fell 15 short of the two-thirds needed for passage.



Last July, faced with a DWP lobbying blitz, we sent Tom Cassidy to Washington, D.C. to keep the Mono Lake National Monument alive. This February we will return to marshall support for its passage.

National Monument Hearings Possible

Hearings on Congressman Norman Shumway's bill to establish a Mono Lake National Monument (HR 4057) may be held in Washington, D.C., Lee Vining and Los Angeles this winter or spring. The bill, introduced in June of last year, has been stalled in committee.

Two other Mono Lake bills, HR 4056 and HR 4403, would also be heard. In addition to the monument legislation, Shumway introduced HR 4056 to repeal a 1936 law that authorizes the sale of federal land in Mono County to Los Angeles for \$1.25 an acre; this would block DWP's attempt to acquire every parcel of federal land contiguous to Mono Lake, including Negit and Paoha islands. In response, DWP has prevailed upon Orange County Congressman Jerry Patterson to introduce HR 4403, which would confirm DWP's rights to divert Mono Basin water regardless of impacts on federal land or Mono Lake.

While the Mono Lake National Monument would not curtail water diversions, it would protect tufa formations, volcanoes and shoreline features as well as authorize a study of alternative water management practices to reduce the need for Mono Basin water.

DWP has attacked the National Monument legislation, alleging it would jeopardize their water diversions.

WHAT YOU CAN DO: Please continue urging your Congressman to support and co-sponsor HR 4057 and HR 4056, and to oppose HR 4403 (address letters to: House Office Building, Washington, D.C. 20515). Letters are especially needed to the California members of the House Interior Subcommittee and Public Land and National Parks: Phillip Burton, Don H. Clausen, Robert J. Lagomarsino and Charles Pashayan, Jr.

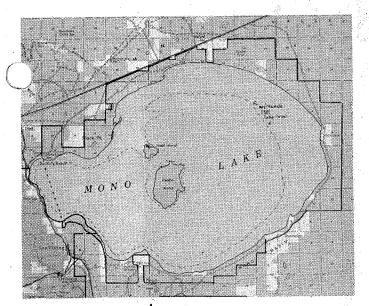
Legal Update: We Appeal to The State Supreme Court

The Audubon-Mono Lake Committee-Friends of the Earth lawsuit may soon come before the California Supreme Court, if a petition to bypass the Court of Appeals is successful. Audubon's lawyers submitted this extraordinary petition to avoid the lengthy delays which usually accompany the appeals process, and to resolve key points of water rights law. The tragic events of last summer underline the need to expedite the judiciary process. Mono Lake may not have much time left.

Audubon seeks a writ of mandamus reversing the decision handed down by the Alpine County Superior Court on November 9. In this judgment, a setback for Mono Lake, Judge Hilary Cook rules that (1) Audubon had not exhausted administrative remedies by appealing to the State Water Resources Control Board (WRCB), and (2) the Public Trust Doctrine is subsumed within the California water rights system as administered by WRCB. Audubon's lawyers are arguing that the courts, not the WRCB. should be the arbiters of the Public Trust, a doctrine that h traditionally been used to protect navigable waters for commerce and fishing.

Should the Supreme Court rule in Audubon's favor, the plaintiffs are optimistic about the long-term prospects for a favorable outcome when the case returns to federal court for trial.

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Boundaries of the proposed Mono Lake National Monument, as amended to exclude private property and active mining claims. The Mono Craters and Panum Crater, which were included in the original proposal, were deleted to avoid a showdown with the US Pumice Co. and local residents.

MLC Sacramento Office Needs Volunteers, Furniture

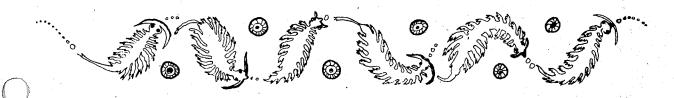
In November, we opened a modest Sacramento office two blocks from the capitol. Under the direction of our legislative representative Tom Cassidy, the office will assure Mono Lake an effective voice where it really counts—the California Legislature.

When you are in Sacramento, plan to stop by our office. We will brief you on the latest Mono Lake bills and the positions of your elected officials.

Want to get involved in environmental politics? We need monomaniacal volunteers to help with office work, research and lobbying.

Our office would also look less bare with file cabinets, office chairs, a desk, typewriter table, bookshelves and a house plant or two. Donations gratefully accepted!

Do stop by, if only to say hello and raise our spirits (but call ahead to be sure someone is in). The office is situated at 926 J. St., Room 914, Sacramento, CA 95814. The phone is (916) 448-1045.



Scientists Testify at Mono Lake Hearing

On Nov. 16 the Assembly Water, Parks and Wildlife Committee, under the chairmanship of Norman Waters, conducted a hearing on "the future of Mono Lake." Biologists from the DWP, University of California and other institutions were asked to address the causes of last year's gull famine and dearth of brine shrimp, and to project the future impact of continued water diversions.

But most of the DWP's biologists skirted these issues with discussions of methodology, and drew broad conclusions based on incomplete data. For example, they claimed that brine shrimp will thrive in a small, saltier Mono Lake, but only tested adult shrimp in lakewater concentrated to 150% present salinity. If water diversions are not curtailed, however, the lake will become much saltier than this. Moreover, changes in mixing patterns, oxygen and water temperature will also affect the shrimp, especially the eggs and immatures, as may well have happened last year, and were not simulated in DWP's experiments.

"DWP has released little scientific information concerning their research at Mono Lake," commented University of California biologist Gayle Dana. "That which has been released unfortunately contains none of the vital information necessary to evaluate it for its credibility, for example, sample size, variance and sampling inique. Statements were made without substantial data to sup-

Dana, a post-graduate researcher at Davis who has been studying Mono Lake's brine shrimp since 1976, suggested that changes in oxygen and temperature are plausible explanations for the low 1981 brine shrimp numbers. Her studies have also shown that

ort them.'

elevated salinity levels substantially decrease and delay the hatch of Mono Lake brine shrimp eggs.

David Herbst, an Oregon State University graduate student who has worked with Dana on salt tolerance of brine shrimp, warned of "irreversible damage... or complete extinction" of the lake if DWP does not exercise "extreme caution" in exporting water. His testimony was echoed by UC Berkeley graduate student and gull biologist David Winkler, who told the committee that continued uncurtailed diversions "could precipitate the collapse of the entire Mono Lake ecosystem and the enormous wildlife populations it supports."

Asked by committee members to pin down the point at which the Mono Lake ecosystem would collapse, virtually every researcher pleaded the need for further study. DWP and independent scientists, however, differed on the need to give the lake a drink. "Based upon the scientific studies sponsored by the City of Los Angeles to date," argued L.A. Councilman John Ferraro, "there remains more than adequate time to complete careful research before considering additional mitigating measures." "I hope in our studies that we're not looking at a disaster," rejoined geologist Kenneth Lajoie. "We should do something in the short term so the situation doesn't worsen."

Researchers also testified on a variety of related topics ranging from hydrology to dust.

"Eventually the public outcry will force Los Angeles to limit diversions of water," said committee chairman Norman Waters. "Obviously that has to happen. But I do not believe it is possible at this time."

Air Pollution Due To the Dessication of Mono Lake

by Charles L. Fryxell, Great Basin Unified Air Pollution Control District

(condensed from testimony presented before the Assembly Water Parks and Wildlife Committee, November 16, 1981)



The Owens Valley on a calm, clear day, looking north toward the Owens Lakebed, the Sierra Nevada on the left.

The Great Basin Unified Air Pollution Control District has been monitoring air quality around Mono Lake for nearly three years. The results indicate that state and federal ambient air quality standards have been exceeded on numerous occasions. Of the 188 samples collected, 19 violated state or federal ambient air quality standards. One of these samples had a concentration of 1,825 micrograms per cubic meter, which is nearly double the EPA's "significant harm to health level."

The particulate matter from Mono Lake is very fine compared to that from a desert dust storm. It is nonabrasive and produces no sound of impaction, even on autos driven into the wind. The visual effect is almost like that of a fog with many very small droplets. The particulates are laced with sulfates. Speculation is that each time there is a dust episode, the state ambient standard for sulfates is exceeded, presenting potential serious health hazards.

The future of air quality in the Mono Basin appears grim. As the lake continues to recede, more and more shoreline will become exposed and the dust episodes will become more severe, perhaps



The Owens Valley on a windy day. Dense, caustic alkali dust fills the valley, endangering human health and vegetation. If water diversions are not curtailed, dust will foul Mono Lake's airshed as well.

engulfing the entire basin. This is evidenced by another lake desiccated by water diversions, Owens Lake.

The Owens Dry Lake lies in the southern portion of the Owens Valley some 135 miles south of Mono Lake. The dust episodes are more severe at Owens than at Mono, primarily due to more lakebed being exposed. Severe dust episodes have been evidenced miles away, and have reduced visibility at China Lake Navar Weapons Center to levels which have caused many interuptions in their flight operations.

There is an immediate need to collect meteorological data and continue air monitoring in the Mono Lake region. This would enable the assessment of the parameters involved in the dust episodes. From this, projections could be made as to the severity of dust episodes as the lake continues to decline.

There is also a need to develop control methodology to abate the dust problem. Of course, the control which is most feasible and probably most cost effective, is the raising of Mono Lake to a level to abate the problem.

Reapportionment Affects Mono Lake

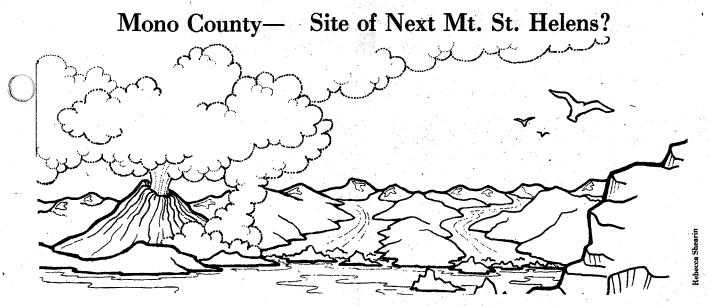
Following each census, the boundary lines of legislative districts are redrawn to reeflect shifts in population. The party in control, this time the Democrats, seeks to create safe seats for its own members and marginal districts for the opposition.

The Mono Lake area is currently represented by Congressman Norman Shumway, State Senator John Garamendi and Assemblyman Norman Waters. The redistricting will leave Mono with Waters, but Shumway and Garamendi will be moved north. They have assured us, however, they will continue to lead legislative efforts on the lake's behalf.

To our consternation, both Mono and Inyo counties have been

placed in a state senate district officially designated the "Eastern Sierra Los Angeles Watershed." It includes all of Mono and Inyo counties, most of the high desert of San Bernardino County and a section of eastern Los Angeles County. Most of the votes are in the south. We will probably be represented by Senator H.L. Richardson, who has not been friendly to environmental issues.

California's population growth will add two seats to its Congresional delegation. One of the new districts includes both Mono County and the northern San Joaquin Valley. Many observers believe this district was created so that Richard Lehman, one of Mono's better friends in the State Assembly, can run for Congress.



A recent increase in local earthquake frequency and the discovery of a 10-inch bulge near Mammoth Lakes have led scientists to speculate that an eruption in Mono County's Long Valley Caldera is likely in the near future. Long Valley, which contains DWP's Crowley Lake Reservoir, is situated 35 miles south of Mono Lake. A geologist who predicted the March 1980 eruption of Mt. St. Helens is now predicting a possible eruption in Long Valley within the next year.

Dr. Roy Bailey, leader of a USGS team studying the Mono Craters-Long Valley region, says that eruptions have taken place every 200 or 300 years over the past 1500 years in this area. The last major eruption occurred between 200 and 250 years ago in the

Craters, which the USGS classified as being a southern extension of the Mono Craters. The recent increase in earthquakes, including four 6.0 magnitude temblors in the Mammoth area within the past two years, has been linked by some scientists to the recently discovered ten-inch-high bulge along a 22-mile stretch of Highway 395. The bulge's peak, at Casa Diablo Hot Springs, coincides with a site of much geothermal activity. The bulge is thought to be the result of a dome-shaped swelling of a chamber of molten rock several miles underground. Researchers duplicated the bulge by injecting hot molten material into a model of the Long Valley Caldera, at a simulated depth of six kilometers. The simulation, producing results similar to what was being observed in nature, lends credence to the theory. The uplift may have triggered seismic action along existing faults. An opposite view is held by Dr. Alan Ryell, a seismologist at the University of Nevada. He feels the quakes originated along Hilton Creek Fault, a littlestudied rift near Mammoth Lakes, and that the temblors themselves caused the bulge by altering the shape of the underground magma chamber which allowed more molten rock to enter from deeper levels.

Whatever the cause, the events of the past two years have prompted the USGS to issue a hazards watch, the second of three levels of hazards information formally issued by the USGS which notifies state, local and federal officials that "a potentially catastrophic event of generally predictable magnitude may occur within an indefinite time" (possibly months or years).

Next summer, the USGS will conduct a full-scale hazard assessment study to better understand the past volcanic history of the Mono Craters-Long Valley Caldera and to more accurately assess the hazards associated with the region. The geologists will be updating studies done from 1975 to 1978 as well as conducting further leveling investigations which will map additional bulges or sags in the earth's crust, should any occur.

Bailey theorizes that an eruption in the Mono Craters chain of 26 craters would be a more intense but less explosive blast than that which took place at Mt. St. Helens. The event could result in the vertical removal of a large part of the present craters' structure. Much ash and pumice would be spread across the landscape, posing the threat of fire in forest, range and towns.

Will nature undo what man hath wrought to Mono Lake? A volcanic disturbance to the Mono Craters could seriously disrupt or stop the diversion of Mono's lifeblood, its tributary streams. The diverted water travels through an eleven-mile tunnel under the potentially active volcanic chain, tempting nature and fate to reverse the decades of degradation and allow the life-giving streams to resume their natural course into Mono Lake.

Mono Lake Slide Shows

Our new 80-slide program vividly conveys the beauty and importance of Mono Lake and the water conservation alternative to its destruction. A cassette tape commentary and script accompany the slides. We loan the program to groups and schools for up to two weeks without charge, but ask that a \$35 refundable deposit

ent with each request. The show can also be purchased for ox, discounted to \$80 for non-profit groups and schools (California residents please add 6% sales tax).

We can arrange for a speaker to present the program to groups of 30 or more, provided you contact us six or more weeks in advance.

Parlez-vous Français? Deutsch? Espagnol?

In the summer Lee Vining can be very cosmopolitan. Thousands of foreign visitors stop to enjoy and marvel at Mono Lake's unique scenery. We would like to spread the word about Mono Lake's geology, natural history and endangered future by offering descriptive brochures in a variety of foreign languages, especially French, German, Spanish and Japanese. If you or anyone you know would be able to help us on translations, please write to us in Lee Vining.

Book Reviews

The Brine Shrimp Artemia

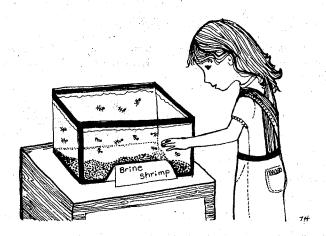
Edited by G. Persoone, P. Sorgeloos, O. Roels and E. Jaspers Universa Press, Wetteren, Belgium

Everything you always wanted to know about brine shrimp... in three hefty volumes! This is the reference book on these amazing creatures, which thrive in Mono Lake and other bodies of water too saline for most aquatic organisms.

The diminutive brine shrimp is, in fact, one of earth's most valuable animals, used worldwide in fundamental biological research and aquaculture. An international symposium on the brine shrimp convened in Texas in 1979 attracted 2,000 specialists from 26 countries. The Brine Shrimp Artemia includes 97 original papers presented at that conference, covering morphology, genetics, radiobiology, toxicology, physiology, biochemistry, molecular biology, ecology, culturing and use in aquaculture. In addition the volumes contain nine reviews, the syntheses of four workshops, a detailed subject index and an introductory paper on brine shrimp life history illustrated with color photographs.

Of particular interest to Monophiles are three papers dealing with Mono Lake's genetically unique shrimp, Artemia monica. S.T. Bowen, M.L. Davis, S.R. Fenster and G.A. Lindwall discuss morphologically similar but physiologically and ecologically distinct "sibling" species of brine shrimp, including Mono's own endemic population. Petra Lenz focuses on the life history and population dynamics of Mono's shrimp. David Herbst and Gayle Dana document the dire effects of elevated salinity on Mono's shrimp. In addition, the review by Persoone and Sorgeloos, "General Aspects of the Ecology and Biogeography of Artemia," is a most informative summary.

Look for these volumes in your neighborhood university library (they cost about \$50/volume).



New Bodie Books

Afficionados of Mono's boom town heritage will want to read Bodie and Eastern Sierra Historic Sites and Rosa May: The Search for a Mining Camp Legend, by George Williams III. Both books are informative and attractively illustrated with historical photographs. Bodie includes, not only its title town, but Aurora, Lucky Boy, Masonic, Monoville, Lundy, Mono Mill and nine other historic camps, and an appeal for saving Mono Lake. Rosa May tells the story of a mining camp prostitute.

Both books are available from the Mono Lake Committee:

Bodie \$8 postpai (Ca. residents add 41c sales tax)

Rosa May \$11.44 p stpaid (Ca. residents add 60c sales tax)

Water and Power—The Peripheral Canal and its Alternatives

by Harry Dennis, Friends of the Earth Books, 168 pp. \$4.95 (paperback)

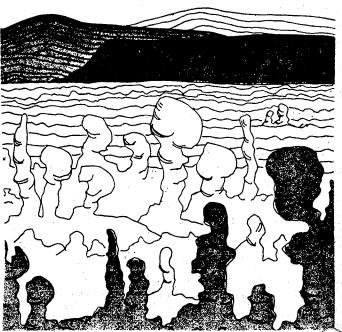
What if California does not build the Peripheral Canal? This question is posed by Friends of the Earth staff writer Harry Dennis. The proposed 43-mile long canal would divert water from the Sacramento River into the California Aqueduct for delivery to the San Joaquin Valley and Southern California. Its estimated cost of \$23 billion is almost three times as much as the Alaskan pipeline—about \$1,000 for every man, woman and child in California. The California legislature approved the canal in June 1980, but three-quarters of a million Californians signed a petition to reconsider that vote. The canal's fate will be decided on the June 1982 ballot.

California water officials are divided over whether the canal should be built. Principal water districts claim that the canal is needed to meet water contracts in the last part of this century. Other planners, including John Burnham, former economist with the Metropolitan Water District, contend that California has ample water supplies already.

Dennis' research and conclusions are based on thorough review of studies by Rand Corporation, the Governor's Commission to Review Water Rights and other state, federal and utility authorities. He argues that water law reform, coupled with simple conservation and wastewater reclamation, could yield a surplus of water—even in dry years—by the year 2000 without the Peripheral Canal.

Water and Power is lucidly written and carefully researched. It is an excellent primer on the peripheral canal in particular and California water system in general.

Drawings and Etchings on Mono Lake



by Karen Lee Fisher

On display at the Michael Mathern Gallery, 628 Clement St., San Francisco, Febrary 4 - March 10. The gallery is open Monday-Saturday 10-6 and Sunday 12-5. MLC members are invited to attend the opening on Feb. 4, 5-10 p.m. Five percent of the proceeds will go to save Mono Lake.

The Mono Naturalist

uring October, autumn winds stripped the foliage from aspens and cottonwoods, covering the ground in multi-colored leaves. An early snow storm blanketed the Sierra Nevada, closed Tioga Pass and even dumped half a foot along Mono's shores. By the end of the month Rough-legged Hawks and Northern Shrikes arrived from the arctic, boding, we thought, an early, snowy winter.

But the white stuff didn't materialize until the end of the year. November and December were blustery but mild, most of the storms remaining to the north. Autumn precipitation totalled about 3 inches—normal, but nothing to crow about.

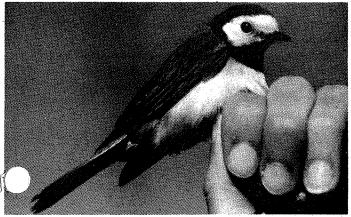
It may, however, still be a wet winter. On December 31, 18 Christmas Bird Counters battled high winds and driving snow to tally 67 species and almost 1,200 individual birds. More storms were forecast for January and February.

The commonest species on the Christmas count were Mountain Chickadees and Dark-eyed Juncos, which numbered in the hundreds. The little chickadees seem perfectly at home in December blizzards at 10,000 feet. Juncos, on the other hand, stick to lower elevations and get nervous at the first sign of snow. Seen for the first time were Lapland Longspur, Gray-crowned Rosy Finch, Virginia Rail, American Wigeon, Shoveler and Whistling Swan.

We've been blessed by swans several times this fall, both winging overhead and sitting on the Mono Lake. One quiet, overcast night in early December, we heard them calling to one another in the dark sky.

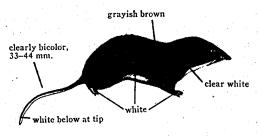
Hundreds of thousands of Eared Grebes remained on Mono Lake through Thanksgiving, then vanished in early December. A thousand, possibly immatures, lingered on the lake to winter ie. What they find to eat is very mysterious, for adult brine shrimp are few and far between. The shrimp overwinter as eggs, which, we hope, will hatch by the billions in March and fodder the 1982 crop of nesting gulls.

Monomaniacal birdwatchers were excited by a Red Phalarope, Vermillion Flycatcher, Hooded Warbler and Chestnut-collared Longspur in October, and by several small flocks of Bohemian Waxwings in November. These sightings will be included in an annotated checklist of Mono Basin birds, which will cover abundance, seasonal occurence and habitat. Authors Terry Hart and David Gaines plan to finish the checklist by spring. If you have Mono Basin bird notes, please share them with Terry and Dave c/o the Mono Lake Committee.



A young male Hooded Warbler was mist-netted, banded and released near Mono Lake on October 31, the second record for the basin. This species normally inhabits deciduous woods east of the Mississippi River.

Mono Basin Mammal Checklist Leads to Shrew Discovery



MERRIAM SHREW

Merriams' Shrew, a rare mammal resident of the Mono Basin (from Ingles, Mammals of the Pacific States).

University of California mammology student John Harris is authoring an annotated checklist of Mono Basin mammals. The checklist will include records of occurence, distribution maps, comments on habitat and seasonality, and discussions of natural history. Line drawings will accompany the list. About 90 species will be covered. The checklist should be available by spring.

In researching the checklist it was discovered that the Merriam's Shrew occurs on the arid east side of Mono Lake. This rare shrew is known in only four other localities in California. Merriam's Shrew is the only member of its genus which inhabits arid habitats, such as sagebrush scrub. Here it searches for scorpions, beetles, camel crickets, spiders and other desert arthropods. It obtains all of the water it needs from this diet. The five other species of shrew in Mono Basin (Dusky, Vagrant, Inyo, Mt. Lyell and Water shrews) occur in moist habitats.

Spring Mono Lake Bird Count

A spring bird count has been tentatively scheduled for Friday, May 28 (Memorial Day weekend). Experts and novices alike are invited to participate.

Mono Lake Symposium Scheduled for April

A scientific symposium and workshop on Mono Lake is tentatively scheduled for April 29 and 30 at the University of California, Santa Barbara. The symposium, entitled "Mono Lake: An Ecosystem in Transition?," will discuss the ecological consequences of Mono Lake's declining water level. Formal scientific presentations will occupy the first day. On the second a series of workshops will focus on current research with special emphasis on brine shrimp, gulls and migratory birds.

The symposium is co-sponsored by the Marine Science Institute of UC Santa Barbara, the Santa Barbara Museum of Natural History, Los Angeles Department of Water and Power and the US Fish and Wildlife Service. A \$10 registration fee is asked of everyone attending. For further information, contact: Dr. John M. Melack, Dept of Biological Sciences, University of California, Santa Barbara, CA 93106; (805) 961-3879.

11

MLC News and Activities

Staff Happenings

Jeannine Koshear has joined our Lee Vining crew fresh from a stint as a backcountry ranger in Guadalupe National Park. In addition to handling the flow of daily mail and keeping the membership list in order, she will be redoing the interpretive displays in the Information Center and coordinating interns in anticipation of a busy summer in 1982.

We hope our fans in the Los Angeles area didn't miss MLC's Southern California Coordinator David "Willy" Takemoto-Weerts on KHJ-TV the morning of November 16. Willy debated DWP's Chief Aqueducts Engineer Duane Georgeson, and came through like a star. Offers have been pouring in from major movie studios, but Willy has refused them all, claiming, "I have to watch my karma."

During Governor Brown's recent visit to Mammoth, we had the opportunity to thank him for his support of the Mono Lake Tufa State Reserve. Unfortunately, due to inclement weather, we were unable to drag the Guv to the lake for a tour and briny baptism.

Our media director Michael Dressler, with help from Terry Hart, sparked widespread newspaper coverage of the November 16 legislative hearing and the connection of Twain Islet to the mainland, as well as a forthcoming feature story in Us Magazine. A December 20 Los Angeles Time story, "Signs of Death Mar View of Mono Lake," included a photograph of Dressler examining dead gull chicks. The word is getting out.

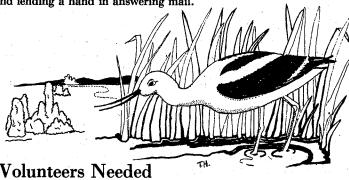
Joe Marek, our irrepressible administrative director, has spent most of the past few months in Los Angeles, laying the groundwork for a successful grass-roots campaign.

Thank you, Volunteers!

Sue Thomas, from St. Paul, Minnesota and on break from a class in Yosemite, came over to lend us a hand with fall wood gathering and general office work in October. We appreciated her cheerful spirits and lumberjack skills!

In mid-November, just when we were sinking in a sea of paperwork, Paul Johnson dropped in and helped rescue us. Although he intended to stay only a few days, he remained several weeks. His patient, thorough work helped us keep on top of mail and mail orders, and his fantastic dinners were enjoyed by all.

A long-time friend of the committee and photographer extraordinaire, Viki Lang, has been dropping by for several hours a week and lending a hand in answering mail.



During April, May and June, we will need two to three dedicated, hard-working volunteer "predator watchers" to help us protect Mono Lake's gulls. Please write us in Lee Vinnig for further information.

Bay Area Activities—Help Wanted

by Chris Swarth, Bay Area Coordinator

The San Francisco Bay Area has long been a region of strong and sustained support for Mono Lake. Yet even here there are many who are unaware of just what's going on. But we're doing our best to change that!

Through slide shows and discussions before groups ranging from school children to university students, church organizations to multi-national corporations, we are spreading the word with vigor. Hopefully, we can create an awareness that will turn to action on Mono's behalf.

A network of energized "monophiles" is developing around the Bay. We are in the process of building a strong coordinated volunteer force. We need all your help to do this! Do you have time to write a letter, make a few phone calls, visit a local elected official or join in organizing a benefit? And what ideas do **you** have? Give me a call and let's work together! I can be reached at (415) 849-2053.

Accolades

When Mono Lake is finally saved, a large share of the credit will be due to California's Audubon Society chapters. The Mt. Diablo chapter, for example, has raised over \$2,500 for the lawsuit through a massive telephone and letter campaign. We have a received generous contributions from the Madrone and Red Audubon Societies. Golden Gate Audubon and Brooks Camera donated a new and much-needed slide projector (thank you, Afton Crooks and Joyce Davis!).

The Fresno Audubon Society—which is the closest of any California chapter to Mono Lake—held their own birdathon last spring and donated \$3,607.49 to the cause. Last summer, the Tehipite Chapter of the Sierra Club, operating Yosemite Valley's LeConte Memorial, presented Mono Lake slide shows, sold posters, and gave away stacks of leaflets and bumperstickers.

The California Alpine Club, after viewing a slide program by monophile and bird photographer extraordinaire Ian Tait, generously donated \$550 to the lawsuit fund. Bill Overton contributed a projector screen which we can use in our Lee Vining Center. We can thank Katey Barrett for donating many spectacular slides, and Beutler's Sequoia Printing of Visalia for donating stationery. Mrs. Covey of Kellogg's Cafe in Lee Vining gave us a handsome Mono Lake poster clock.

Our Visalia monophiles would like to thank Mr. Kenneth Dow, district manager of the California Water Service, for donating water conservation kits for use at slide shows. Under the leadership of Cyndee Wachner and Jim Mardis, the Visalia volunteers have been winning new friends for Mono (and the earth!). That kind of support really lifts our spirits.

Generous contributions from the Harder Foundation, Anne C. Getty and Palm M. Stout helped us survive the lean winter months. Dorothy and Phil Corsentino again used our deluxe postcards as a basis for inspirational Christmas cards.

Lastly, we acknowledge a donation in memory of Trudie L dauer who spent many happy vacations in the eastern Sierra, and Harold Havre's donation in memory of G.W. Douglas Carver.

The Water Reform Initiative

The Mono Lake Committee has joined with the National dubon Society, Sierra Club, the California Native Plant Society and many other groups in supporting a statewide initiative to place needed water reforms on the California ballot. This initiative, the Water Resources Conservation and Efficiency Act, will go before voters in November, 1982 if 500,000 signatures are collected within the next few months.

The initiative first took form six months ago as a method of protecting the Stanislaus River. It soon became evident, however, that the time was right for a major water reform measure. Those trying to save the Stanislaus were representative of countless groups trying to save rivers, lakes, wetlands, and diminishing groundwater supplies throughout California.

Specifically, the Water Resources Conservation and Efficiency Act would do the following:

GROUNDWATER — The measure mandates locally developed and implemented groundwater management programs in 11 basins currently identified by the Department of Water Resources as critically overdrafted. It declares that groundwater is a shared resource. It gives critically overdrafted basins one year in which to designate a local groundwater management authority, and two years in which to submit a plan to the State Water Resources Control Board for a solution to the problem. Local basins that do not comply will not be permitted to sink new wells ut new land into production until management plans are apveed. Exemptions are provided for small wells.

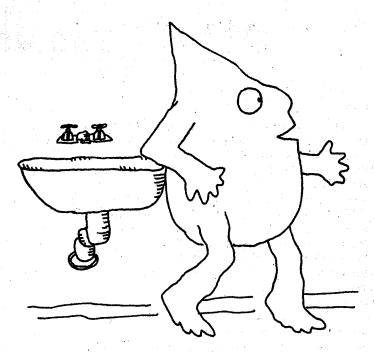
EFFICIENCY AND CONSERVATION — The measure requires that economically competitive water conservation programs be developed before a water district can import new water supplies. It discourages the use of subsidies for large water consumption. It authorizes water districts to use all financing methods now available to finance new conservation programs.

INSTREAM — The measure gives the Water Resources Control Board the authority to require that enough water be left in rivers, lakes, streams, bays, estuaries, and wetlands to provide for fishing, wildlife support, water quality control and other related purposes. The measure also offers a compromise on the filling of the New Melones Reservoir in an effort to provide for irrigation, flood control, and power generation, while preserving the historical, natural and recreational qualities of the canyon. It would restrict filling of the reservoir to a moderate level until such time as contracts are signed for delivery of 75 percent of the firm yield of the project at the actual cost of delivering the water.

It will take volunteers and dollars to gather the signatures and pass the initiative. Vast sums will undoubtedly be spent against the measure by those who currently benefit from water subsidies. Here's how you can help:

* Collect signatures. Anyone who collects 500 or more a signatures will win a free two-day raft trip on the Stanislaus River.

* Make a donation to the Water Protection Council For more information and petitions, contact the council at: 401 San Miguel Way, Sacramento, CA 95819; (916) 453-0443.



Installation of Water Conservation Devices Could Save Mono Lake Many Times Over

It's true! According to studies conducted by the California Department of Water Resources, the installation of water-saving toilet dams, low-flow showerheads and flow restrictors in every home in California would save about 800,000 acre-feet of water annually . . . enough to save Mono Lake 9 times over! Saving in the City of Los Angeles alone would exceed 100,000 acre-feet per year . . . more than the average amount diverted from Mono's tributary streams!

The water-saving devices would also save energy consumed in water heating equivalent to about 5.5 million barrels of oil worth more than \$221 million at conservative current costs.

Installing the water-saving devices in every California home would cost about \$8 for each Californian (\$160 million), but would pay for itself in less than nine months. This cost includes purchasing and installing the devices, related publicity and program management.

For about \$25 million, the water-saving devices could be installed in every Los Angeles household, reducing demand by more than enough to save Mono Lake.

What are these water-saving devices? Toilet dams are pieces of flexible plastic that can be wedged into the toilet tank on either side of the flush valve, holding back "reservoirs" of water. Most of our water-wasteful toilets will flush efficiently on a gallon or two less water.

Low-flow shower heads create an aerated spray and reduce flow rates to as low as one-half gallon per minute, 1/10th that of some standard models. We use them here in Lee Vining . . . and enjoy luxurious showers. Low-flow shower heads pay for themselves in water-heating energy savings.

Flow restrictors are inexpensive valves that are easily installed in flow lines behind faucets and shower heads. They reduce water use by up to 50%.

These water-saving devices are available at most plumbing supply stores . . . or from the Mono Lake Committee.

The Mono Lake Coalition Report

Matt O'Connor has been busy distributing the attractive Coalition brochure to stores in the Bay Area. Stop in to these stores and praise their efforts to help the lake.

In San Jose: Freeman's For Sports (2 stores), Skyline Sports, Western Mountaineering, Red Front Surplus, Cambrian Surplus.

In Campbell: The North Face, The Mountain View

In Cupertino: Antelope Camping Equipment

In Mountain View: Co-op Wilderness Supply, Mountain View Surplus

In Palo Alto: Dealin' Down, The North Face, Sierra Designs, The Ski Hut, Sport Exchange Store, Stanford Sport Shop

In Menlo Park: Menlo Sport, Shreve's Sport Shop, North Face Seconds Outlet

In Redwood City: Redwood Surplus, Target Surplus In San Mateo: Angler's Emporium, RED Stores Ltd.

In Burlingame: Edan's

In San Bruno: San Bruno Camping Supplies

In Alameda: Alameda Sporting Goods In Oakland: Kelly's Sporting Goods

In Berkeley: The Ski Hut, Sierra Designs, REI, The North Face, The North Face Seconds Outlet, The Nature Company, Moun-

Receiving Duplicate Newsletters?

Did you receive more than one copy of our last newsletter (Vol. 4, No. 2)? One member complained of getting five! The reason is outreach campaign. We traded mailing lists with other vironmental groups, and sent copies of our last newsletter, with a cover letter and remittance envelope, to their members. As a result, we garnered over 500 new MLC members and raised several thousand dollars. Since many of you belong to these groups as well as the MLC, you received multiple newsletters. Please pass them on to friends! And do let us know if you do not wish your name traded to other organizations; we understand, and will be glad to comply.

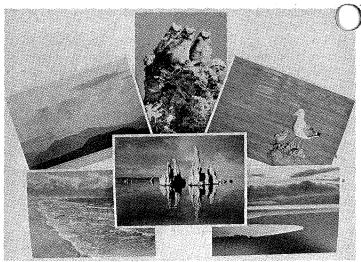
You should only receive one copy of this newletter. If you get more than one, please send us a note and your mailing labels. With your help we can pare waste and duplication down to a minimum.

tain Traders, Marmot Mountain Works, High Meadow, Harbert Brothers Sporting Goods

If your place of work can display a poster and brochures, give Matt a call at the Friends of the Earth office (415) 495-4770.



WATER-SAVER SHOWER HEAD. Finest quality chrome-plated brass shower fixture mixes air and water for truly luxuriant showers. Cuts water consumption by up to 75% and pays for itself in lower water-heating bills. Easy to install.



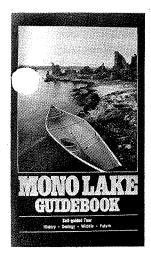
DELUXE POSTCARDS. Seven spectacular photographs beautifully reproduced on 5" by 7" postcards. A brief text explains Mono's plights. Scenes are: Gull Chick, Beach, Tufa and Gulls, Tufa Reflections, Negit Island Sunrise, Shoreline Sunrise and Owls on Tufa. Ideal Christmas cards.

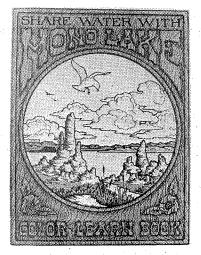
Set of 7 - \$3, or 50c each.

INEXPENSIVE POSTCARDS. Good quality 4" by 6" postcards with a brief text on Mono's plight.

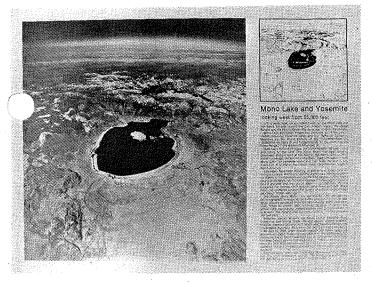
Set of 7 scenes - \$1.25

WATER GUARD WATER CONSERVATION KIT. Simple cures for inefficient, water-wasteful toilets and showers. Kit includes toilet dams, shower flow restrictor, leak detector dye and complete instructions. \$3.95





MONO LAKE GUIDEBOOK. From tufa to volcanoes, brine shrimp to gulls, aqueducts to water conservation, this lively, authoritative guidebook delves into Mono's geology, wildlife and history, and the alternatives to its destruction. Sixty-eight photographs and numerous drawings, figures and tables complement 113 pages of text. By David Gaines and the Mono Lake Committee.



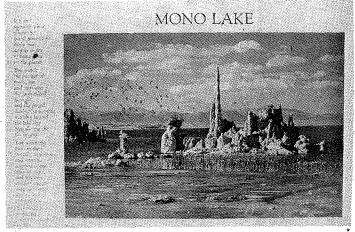
BLACK AND WHITE POSTER. Looking west from 55,000 feet toward Yosemite National Park, the Coast Ranges and the Pacific Ocean. Mono's ice-age shorelines. the Grand Canyon of the Tuolumne, Half Dome, Monterey Bay and most everything inbetween are clearly visible. Commentary discusses volcanoes, peaks and other geological features. \$1.95

MONO LAKE COLOR-AND-LEARN BOOK. An ecological story and coloring book for children of all ages. A waylaid droplet tells the story of Mono Lake's plight. Beautiful drawings and spirited text. "An outstanding accomplishment"... Huey P. Johnson, California Secretary for Resources. By Becky Shearin, Michael Ross, David Gaines and the Mono Lake Committee



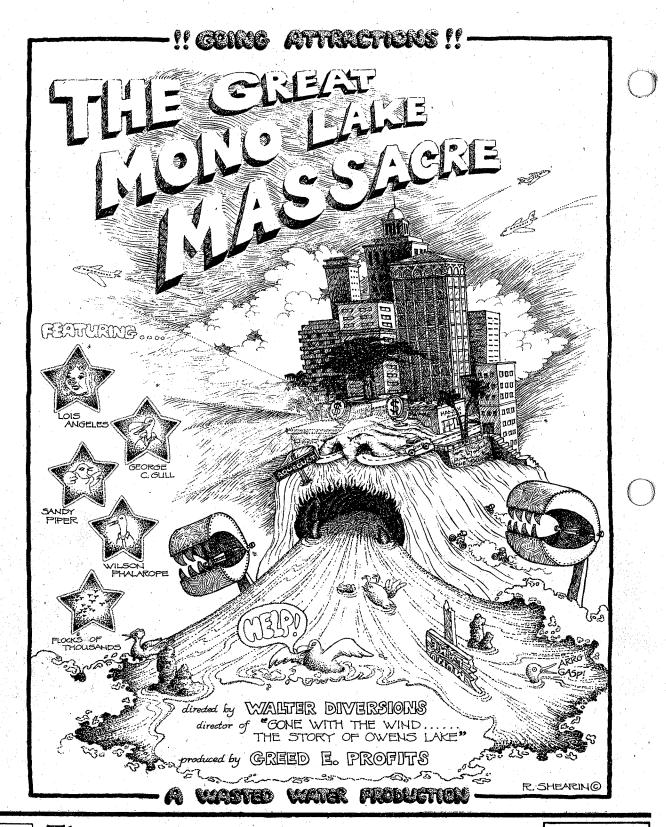
MONO LAKE T-SHIRTS. High quality shirts silkscreened with an evocative and colorful design. Sizes s, m, l, xl.

Short sleeved kid's in blue or beige	\$5.75
Short sleeved men's in blue or beige	\$ 6.75
Women's French cut in blue or beige	\$ 7.75
Baseball jersey style with red, yellow,	
powder blue or navy sleeves	\$ 7.75



MONO LAKE COLOR POSTER. A striking 15" by 22" color reproduction of shorebirds swooping among tufa spires. \$3.77

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The Mono Lake Committee

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