



# HEADWATERS

Official Publication of Friends of the River



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Editor: Kathy Meyer

## *Carter Cuts Auburn Funds!*

★ SEE EXTRA



Kick off your shoes and pitter patter your feet to the Rain Dance.

*Photo by Ty Childress*

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## FROM THE EDITOR

Strangely enough California's drought is in large part the answer to an environmentalist's dream. Nature is accomplishing in a few short months what thousands of conservationists have been struggling toward for years: changes in consciousness and the breaking of life-long habits of waste.

The tone of California talk has changed — waste is a fact not a question anymore. The word of the day, every day, is WATER. Sing-a-long with the water song: turn it down, turn it off, use it twice, even thrice. Wash your face in it, then your clothes, the kitchen floor, and finally, dump the same bucketful on the garden.

Mother Nature works in wonderful and sensible ways. Even as we abuse her, ignoring the gentle reminders of her presence, she nudges us more firmly, as if to say, "since you are having trouble getting it together, I will help you." The drought has worked: a friendly spirit of community togetherness has emerged across the state.

One Tiburon woman has been rounding up neighborhood children for baths. The media has been full of articles and editorials admonishing waste and advocating saving. Dozens of pamphlets and books with "do it yourself" installation methods have been rolling off the presses. All levels of government are wrestling with legislation for new study teams, programs, and agencies with thousands of dollars for mass education and distribution. The drought cannot continue without its hardships, but the direction of human energy feels comforting.

One also hopes the drought has provided Jerry Brown with the impetus to blossom the suppressed desires contained within the roots of his administration. As friends of the river and all nature, we must applaud wise governmental use of our resources, letting them know we are willing to continue tightening our belts to insure that wasteful use of water and energy is stopped. We must not forget to keep turning the spigot off after the rains come. Waste is an offense to nature that is just as great as air or water pollution. What greater pollution can there be in a river canyon than a dam created by a demand caused by waste? We have mounted national efforts to clean up our air and water; it is time we mounted a national effort to clean up our consumption habits. Let Californians use this awakening to lead the country in preservation.

*River Kate*

## Wild River Confluence California Conference:

To dam or not to dam: that is the question. People from all over California are meeting at California State University Sacramento on March 18, 19, 20, to listen to experts, share ideas, participate in workshops, play new games, and listen to music. Join us for this event sponsored by FOR, Sierra Club, Planning and Conservation League, Cal Trout/Committee of Two Million, Environmental Studies Center and Office of Continuing Education (CSUS), Sacramento Audubon, and local community organizations. Featured will be such timely topics as the drought, riparian ecosystems, river law, historic archaeology, alternative energy resources, water conservation, and how to save our few outstanding rivers. A few of the speakers are: Senator Peter Behr; Assemblyman Dixon Arnett; Dr. Gerald Meral, Deputy Director of California's Department of Water Resources; Tom Graff from the Environmental Defense Fund; John Zierold, the Sierra Club lobbyist; Larry Moss from the Planning and Conservation League; Pam Lloyd from Marin Utilities District; and Billy Martin, Regional Director of the U.S. Bureau of Reclamation.

At this gathering we will consider what alternatives we, as citizens, can advocate in order to preserve rivers without disregarding our state's future water needs. We must look at water management; responsible planning can save rivers. Advanced registration for the three day conference costs a mere \$10 (\$20 for college credit) and includes Saturday night dinner. Add \$2 if registering at the door. To register, make dinner reservations, or arrange for housing with a Sacramento Friend of the River, write FOR, R.S.V.P. soon, soon, soon.



## You're Invited

FOR invites and encourages your participation at our meetings; we are very open to new perspectives, ideas, and energies. Steering Committee Meetings focus on the detailed operations of all FOR issues and activities. General Meetings have been developed to study specific rivers and projects and will have varied formats including speakers, workshops, slides, and movies. Minutes to any of the meetings can be obtained on request. March and April meetings will be in Berkeley. May in Sacramento. Call 916/451-9955 for exact locations. At the March General Meeting we will present Roland Hauck's slide show on Saving Neighborhood Creeks<sup>1</sup> at the First Congregational Church, 2345 Channing Way, Berkeley 1 (Mayflower Room, 2nd floor.) ❖❖❖ Steering Committee: March 10, 4:30 p.m.; April 14, 7:00 p.m.; May 12, 4:30 p.m. ❖❖❖ General Meetings: March 10, 7:00 p.m.; May 12, 7:00 p.m.

**FRIENDS OF THE RIVER** is a political, educational, and research organization dedicated to the protection and preservation of our remaining magnificent free flowing rivers and to the conservation of our water and energy resources.

Director: Mark Dubois

Secretary: Nancy Magnuson

Treasurer: Tom Lovering

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## HEADWATER THANK YOU'S

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## Legislation

### WATERWAYS PROTECTION

Assemblyman Dixon Arnett has introduced AB130 which, beside cutting taxes for boat owners, will redirect boat taxes and guarantee that some of the money is spent for the environmental protection of our waterways.

### WATER CONSERVATION IN THE WORKS

Senator Ruben Ayala, new chairman of the Senate Agriculture and Water Committee, is preparing legislation to encourage the use of drip irrigation. Agriculture uses 85% of California's developed water. Drip irrigation is far more efficient than other irrigation techniques. Ayala's bill would appropriate \$3 million for a pilot program to help work out some of the kinks.

SB229 — Senator Smith was joined by Senator Behr and Assemblyman Gualco and Wornum in this bill to cut down waste in urban water use. Fifteen million dollars would be allocated to the Department of Water Resources to help retrofit residences and public places with water saving devices.

On the Assemblyside, Gualco has introduced a series of bills to help our water shortage:

- 1) AB380 would appropriate \$300,000 to DWR for studying the most effective way to distribute water saving devices to residences (if 30% successful, it will pay for itself in 6 months)
- 2) AB394 would appropriate \$13 million if AB380 is successful
- 3) AB395 would increase availability of loans for drought threatened communities to work on problems (Gualco has several other bills planned in this series)

# DAM DROUGHTS! \* \* \*

Bill Center

California is in the midst of the worst drought in its history and the direction taken by state officials and by the population in general in the next eighteen months is crucial to the future of rivers throughout the state. Among the various cries will be one for more dams. However, the economic justification for building a huge storage project to be used only in a drought year is non-existent.

When dams are built they are meant to be operated to guarantee carry-over water storage for drought years. Our current shortages exist because water storage has been used in normal years as if a drought would not come. The "drought storage" is incredibly low right now because it was used last year to irrigate fields and lawns and wash cars as if it had rained as usual. Building more dams will hardly solve our problem: but rather insure that the disaster can be magnitudes greater when the next drought occurs. If new dams were built, who can guarantee that any additional "drought storage," the shock absorber that dams are supposed to provide, would not encourage even more new growth and demand in good years?

The shock that is delivered by nature cannot be made impotent by man's technological prowess. If this year teaches us anything, it should teach us that. The population in general must be ready to tighten their belts in bad years, and to demand that others (neighbors, businesses, agriculture) tighten their belts also. It is time we take the responsibility for ensuring that water use is cut back right in our own homes

## Marin Rationing

Marin County residents are consuming less than half the water per day that they were using last year. With reservoirs only one quarter full, the Marin Municipal Water District set a 12 million gallon per day goal. Residents are diligently holding it down as far as an average of 9.5 million gallons. "This kind of public co-operation and responsibility is simply amazing," said J.D. Stoeck, General Manager of MMWD. Creative ideas for saving water are flooding Marin's Independent Journal which is sponsoring a daily front page contest — winners receive \$25. Friends of the River heralds this work by a conservation minded county that has turned down new dam plans for nine years.

(For the few irate citizens throwing darts at Senator Behr and Assemblyman Wornum: had Warm Springs Dam been built, its affect on the drought in Marin would have been zero. Conservation is the only way to go — see "Dam Droughts" this page for an explanation.)

and fields. Wasted water is our greatest water resource, and conservation is the only thing that will prevent dams in the long run.

Personal conservation must occur and must be accompanied by controls that ensure agricultural and business conservation. Agriculture uses nearly 85% of the water in the state. A 10% reduction in agricultural use, through conservation, would make enough additional water available for over 12 million people in California. A 10% reduction in urban water use would make additional water available for 2 million people. If this 10% agricultural and urban water conservation were treated as an increase in supply, as indeed it is, then it is the same as if we just found a supply of 380,000 acre feet of water. The total yield of New Melones Dam (now under construction on the Stanislaus River) in a good year would only be 300,000 acre feet and in a dry year, under 180,000 acre feet. A 10% statewide reduction in water use more than supplies the amount of water from New Melones and further more, it supplies it exactly where it is needed: where it is currently being used. No new delivery facilities, no new treatment plants, and indeed, even less wastewater treatment and subsequently cheaper sewage facilities! Ten percent conservation is easily within our grasp, and estimates range as high as 60% for the amount of conservation possible without a basic change in our life

style.

It is essential that we, as friends of the river, support all water conservation bills and practices. It is essential that we educate ourselves about what water conservation can do. One way to start is to write the Department of Water Resources and ask for Bulletin #198, "Water Conservation in California." It is available free. DWR, P.O. Box. 388 Sacto, CA 95802. If we do react well to this crisis, it could prove that we are capable enough of saving water to prevent the need of construction of additional water facilities for years and years to come, and maybe forever.

## WATER FACTS

**One Acre Foot** (af) of water is the amount of water it takes to cover an acre (a football field with the end zones) one foot deep. It is about 326,000 gallons. Average use by an individual in an urban area is 250 gallons per day, or 90,000 gallons per year, or ¼ acre foot per year. Because 44% of personal water use goes for landscape watering, some areas, like San Francisco, use only 180 gallons/person/day.

**One Cubic Foot Per Second** (cfs) of water, flowing for 24 hours, yields 2 acre foot. So, the Stanislaus River, flowing at 800 cfs, (average summer flow), in 12 hours would yield 800 acre feet, enough water for 3,200 people for a year. In a year's time, the average individual consumes the amount of water which will flow past you on a summer's day on the Stanislaus in 13.5 seconds.



Low water in the Nacasio Reservoir, Marin County

Photos by Kirk Naylor

## SHOWER WITH A FRIEND

Bill Sloan

Let's save some rivers and water: shower with a friend! Showers account for 30% of the water used in the home. They use more water than is necessary for cleansing action. Full, open showers use anywhere from 5 to 15 gallons per minute. Most of the devices to convert your shower over to consume less water are fairly inexpensive and can be put in by anyone in a matter of minutes. These

devices do not change the quality of the shower, just the quantity of water and energy being consumed.

A flow control showerhead which fits on the end of the shower will limit the flow of water but maintain the showerstream. Models are available from 2 to 4.5 gallons per minute. Another device, the internal flow

Continued on page 4

## \* SON OF SB107 \*

In 1972 Senator Peter Behr championed the first SB107 which established the California Wild and Scenic River System. Our wild river saint has now introduced SB107 the II. Conservationists and sportsmen from around the state are joining in support: Friends of the River, California Trout, Sierra Club, and the Planning and Conservation League are all anxious to see a few more rivers protected.

With one exception, all rivers in California have been claimed by dams, but many segments have retained their charm and grandeur. Behr's legislation will be an attempt to set aside and preserve a few stretches for future generations wanting to touch the magic of a river. The rivers to be included have not yet been announced, but there will be a half dozen or more. Be ready to help SB107 and rivers!

### Big Kisses —

And a belated valentine to those river friends who donated tape recorders! We are still in need of file cabinets, slide and 16mm film projectors, an electric typewriter, and yes, even more tape recorders. If you are a leprechaun please get in touch!

## Alaska May Lose \$25 Million

Steve Cochran

The Susitna River Project is Alaska's attempt to supply future energy demands without relying completely on limited and expensive fossil fuels, but in the process Alaska could lose \$25 million.

Usually the federal government is solely responsible for funding a multibillion dollar project such as this, but their process is slow and cumbersome to Alaska Senator Mike Gravel. As Chairman of the Water Resources Subcommittee of the Senate Public Works Committee, he found a way to speed up the process. Gravel pushed the Alaska Hydroelectric Act through in 1976, which authorizes the \$25 million for preliminary studies. An obscure law, the Intergovernmental Co-operation Act, allows the Army Corps to proceed with studies (using state funds) prior to actual approval for congressional appropriations. Should Congress reject the project, Alaska will forfeit the full amount.

Estimated costs have doubled in one year from \$1.5 billion to \$3.0 billion and may reach \$6.0 billion, thereby lowering the benefit/cost ratio to .7 or less. According to the National Economic Development criteria, this benefit/cost is totally unacceptable. Unless Senator Gravel can find a way out of his commitment, the state of Alaska has probably just gambled and lost \$25 million. \* \*

## Evolution in Fossil Politics

Noel Dubois

President Carter made the famous statement, "I will halt the construction of unnecessary dams by the Corps of Engineers ... the federal government's dam building era is coming to an end ... it is time the Corps enters a new phase for the overall benefit of the general public." Even before this, FOR had observed a change in the direction of the seemingly obdurate, mountain leveling, cement laying juggernaut, personified by the Corps of Engineers. Until recently this behemoth was fueled almost exclusively by pork and barrel: a high priced, combustible mixture derived from fossil politics.

FOR would like to publicly apply one small hamburger patty to one of the eyes of the Corps for this course alteration and for some of their recent good works. They have

## TUOLUMNE

The Tuolumne Wild and Scenic River Study which was to be completed in February, will not be released until the first part of June. Following its release there will be a 90 day review and a public hearing. If you have not already done so, write the Study Team, Box 90, Groveland, CA 95321, and request a copy of their finished report. Let them know that interest has not faded and that more than one public hearing is essential.

A different study on minimum flow requirements for the Tuolumne River has been conducted by the U.S. Fish and Wildlife Service under the Department of the Interior in conjunction with the National Forest Service, the National Park Service and the California Department of Fish and Game. They concluded that the present schedule of minimum releases, 35 to 75 cubic feet per second (cfs), from Hetch Hetchy "is inadequate for the protection of downstream fishery, recreational and esthetic values." A constant minimum release of 75 to 200 cfs was considered acceptable. The City and County of San Francisco is protesting this *Tuolumne River Flow Study* at federal hearings in S.F. on March 18. With the recommended higher fishery flows, S.F. would not be able to generate as much power revenues.

If you are familiar with the stretch of the Tuolumne River between Early Intake and the confluence with Cherry Creek prior to the 1967 Canyon Tunnel Diversion, please contact Friends of the River in order to help determine how reduced flows have damaged fishing values, recreation, and esthetics.

A local Tuolumne County group, Citizens to Preserve Tuolumne River (formerly organized as TUOL), is holding monthly meetings on Tuolumne River issues. Petitions representing local concerns are being circulated and are available from CPTR. For more info or to help, write: CPTR, P.O. Box 1434, Twain Harte, CA 95383.

lately developed "non-structural solutions," that is, no concrete, and leaving flood plains open for natural seasonal overflow, on the Smith and Tia Juana Rivers in California, and the Charles in Maine, among others.

On Marco Island, off the Gulf Coast of Florida, one Colonel Wisdom had the temerity to decide against further mangrove swamp "land development" by the Deltona Corporation. This decision involved only 2,000 acres, but appears to be historic in that the Corps applied a power it has held since 1972 under Section 404 of the Water Pollution Control Act. Further, the determination was made against large financial interests and potent political forces. Through the courts the affected parties are attempting a reversal of the decision and in Congress, trying to have the Corps stripped of certain powers.

At this point, though with wary eyes on the Washington pork barrel refinery, FOR cautiously doffs its soft hat to the Army Corp of Engineers.



### \* SHOWER WITH A FRIEND

continued:

control restrictor, and insert that screws on the shower lead-in pipe, allows a sufficient working water pressure for the existing showerhead and delivers a fixed maximum flow of water. These models are also available from 2 to 4.5 gallons per minute. Both devices result in a 50%-70% water reduction and reduced water heating costs. The showerheads cost from \$10 to \$20, the restrictors from \$1 to \$2, and both can be easily installed in minutes.

Thermostatic-mixing valves are shower control handles which allow the mixing of hot and cold water. With this device you get the desired water temperature almost instantly without having to readjust several times before entering the shower; thus, savings occur in the amount of hot water being used. Shower cut off valves are on-off valve fittings installed ahead of the showerhead on the lead-in pipe. The advantage to these two instruments is that they allow the shower to be shut off and turned back on without disturbing the temperature setting. The on-off valves are very inexpensive, costing about \$3, and simple to install. The thermostatic-mixing valves cost from \$30 to \$40 and installation requires some knowledge of plumbing.

The most advanced and promising energy-water saving mechanisms are the minimum flow shower systems using .5 gallons per minute. By a combination of air and water, water velocity is increased for cleansing effect. This system uses and heats 90% less hot water which is greatly reflected in your utility bill. Installation of this unit is quite elaborate and might entail remodeling your bathroom somewhat to accommodate it. It sells for \$235 plus installation costs, but will pay for itself in 1 to 2 years. ~

## SOUTH FORK AMERICAN

Bill Center

El Dorado Irrigation District (EID) is rapidly proceeding with plans for four dams on the South Fork of the American River between Chili Bar and Folsom Lake. They have been given the project by the County Water Agency, and the EID Board seems very impressed by the recent Viller Report which indicates that these 4 dams would generate enough power revenue to not only pay for themselves, but to pay also for an upper-river water storage and delivery system. This system is intended to guarantee an enormous amount (up to 100,000 acre feet) of free water for distribution within the county. This amount of water would allow 500,000 additional people to settle in El Dorado County, a rural area that developers have already turned into the fastest growing county in the state.

The Viller Report, based on data about the lower river developed in 1968, has been updated only in figuring a 7% yearly increase in costs. This is sketchy economics at best, and there are no updates on geology, environmental requirements, recreational mitigation, and a multitude of other new factors. However, the EID Board feels that the success of their water supply project hinges on their ability to put in the lower dams. They plan to complete feasibility studies and have the final project selected within 6 months. They then will proceed with design, environmental reports, legal work, power sales contracts, and a host of other requirements to get ready for both a county-wide bond election, and the final application to the Federal Power Commission by the end of 1978. They want to start construction in 1979.

Right now it is important that EID realize the fight they are going to have on their hands if they include the South Fork between Chili Bar and Folsom Lake in any dam plans. The upper project may be justifiable from an environmental point of view; the lower one is clearly not. Let EID know that you are concerned by writing them and asking 1) when their promised appointment of an environmental advisor will be made, and what are the requirements, 2) that they enact the stringent water conservation measures they have talked about, and send a copy to you and 3) that they keep you

*etc*   
on the move...

Gracielle Rossi

Environmental Traveling Companions (*etc*), the group of volunteers who share the wilderness with delinquent, handicapped, and disadvantaged folks, unfortunately did not receive the Tyler Junior Award. The October-November HEADWATERS mentioned that the Governor's Office nominated them for this \$10,000 award for environmental achievement.

With few funds and scarce rainfall, *etc* still marches on ... in hiking boots! They just returned from a three day trip to Point Reyes with a blind group and an alternative school, both from Berkeley. With a moment's notice of snow they will clamp on their newly donated cross country skis, but in the meantime several more coastal trips are planned. In the spring *etc* will be developing a water awareness program for school children. Summer plans include starting a blind camp in conjunction with Washoe Pines Camp, Nevada. This would become the base camp for a series of wilderness trips with both blind and sighted children. For more information or to share ideas write: *etc*, Box 131, Vallecito, CA 95251. Sorely needed donations are tax exempt. ~

## CORPS WINS GOLDEN FLEECE AWARD

The dam is quicker than the eye!

Last December Senator William Proxmire of Wisconsin bestowed his "Golden Fleece of the Year" award upon the Army Corps of Engineers for underestimating the cost of 178 public works projects by about \$14 billion.

"Compared to the Army Corps of Engineers," Proxmire said, "the Defense Department, Health Education, and Welfare, and the General Services Administration are marvels of efficiency . . . Without exception, this is the worst record for mismanagement and cost growth in the entire government."

"It seems to be a good time for the Executive Department to rethink the mission of the Corps of Engineers. Perhaps the Corps should be reoriented to reclaiming polluted waterways, building municipal waste treatment facilities, and other desperately needed capital programs where Corps resources could be efficiently used."



Photo by Tyler Childress

*Future Corps of Engineers' applicant practices the art of choosing a dam site.*

advised of the project and all public meetings. In addition, write your legislators and ask that they attempt to protect the South Fork as an irreplaceable resource belonging to the people of the State in general, and not just to El Dorado County. Send EID a copy of the letter to your legislator, and the legislator a copy of your letter to EID. EID's address is Mosquito Road, Placerville, CA 95667. We are early enough to stop this project with some well directed work. Let's make sure we do it. \* \*

## Garrison Diversion Unit

U.S. Polluting Canada

In the plains of North Dakota, the U.S. Army Corps of Engineers and the Bureau of Reclamation are presently digging a \$500,000,000, 300 mile-long-system of canals which intends to supply 1200 farm families with water — farms which already produce good crops. This project, officially called the Garrison Diversion Unit, has instead dried up wells, obliterated or severed farm lands, posed irreparable harm to 80% of the state's National Wildlife Refuge, and initiated cries of protest from nine national conservation organizations, the states of Minnesota and South Dakota, and the Canadian government. (Heavy pollution from salt deposits will flow north across the border into Lake Winnipeg, breaking a U.S. treaty that promises not to pollute Canadian waters.)

The Ford Foundation and a group of economists, engineers, ecologists, and lawyers funded a year long study of the Bureau's documents finding them "replete with unsupported and undocumented statements and conclusions... The benefit/cost ratio is not the claimed 1.67 to 1, but is substantially less than 1 to 1. (The project) is not needed, has no economic

justification and can be carried out only at a net loss of economic welfare to the nation." Typical attitudes inherent in Bureau projects are again revealed in this study as the Bureau "indicates a singleminded intent to proceed with the project without economic rationality." and "displays a constant, obvious bias in favor of recreation benefits."

In 1944 when the Garrison was first announced as part of the multibillion dollar task of damming the Missouri River and its tributaries, it was strongly supported by conservationists and anticipated as nothing short of a blessing by local farmers. In 1972 a group of farmers attempted to halt construction with a suit against the Bureau; again in 1975 North Dakota's largest farm organization requested a moratorium. Today construction rolls on with the familiar "bureaucratic momentum" of Bureau projects despite two additional moratoriums called for by the President's Council on Environmental Quality and the Environmental Protection Agency. When will this agency listen?



# Auburn Dam: If It's Designed To Fail, Let's Stop It

Edited by Bill Patterson from the PARC newsletter

Of the questionable projects that have been or are to be built in California, the Auburn Dam on the North Fork of the American River, presently under construction, holds a dubious distinction. If this dam should fail, a 100 foot wall of water would head downstream, topping and most likely taking with it Folsom Dam, ultimately devastating the City of Sacramento. According to many experts, both within and outside government agencies, the possibility of failure is unacceptably high.

The Auburn Dam was authorized more than ten years ago. Excavation and site preparation began two years ago. As originally conceived, the dam was to be a massive earth and rock fill structure similar to that proposed for New Melones Dam. However, subsequent to initial planning, the seven square mile area to be stripped to provide fill material for the dam was taken by developers, whereas needed material for a high-arch dam could come from the reservoir area. In addition, construction of the appurtenant structures for hydroelectric generation is less complex and less expensive with a concrete arch dam. The U.S. Bureau of Reclamation opted for a world's record double-curvature, high, thin-arch dam at 685 feet tall, 4,150 feet across its crest and varying in thickness from 40 feet at the top to 196 feet at the base. This type of structure is usually considered more suitable for narrow U or V shaped valleys. In fact, a 1967 report by the American Society of Civil Engineers and the U.S. Committee on Large Dams recommended that arch dams were unsuitable "unless the valley is narrow with well defined and sound abutments." Thus the use of this type of dam at Auburn may have been questionable due to the terrain alone.

In designing the dam, the USBR decided that the Maximum Credible Earthquake (MCE) would produce a horizontal ground acceleration or force equal to 12% of the Earth's gravitational pull. This MCE was arrived at by a team of engineers and geologists in 1971. One of their conclusions was that the Sierra foothill band had been free of faulting for the past 2 to 3 million years and therefore the Bureau based their design on an earthquake of 5.5 magnitude occurring 15 miles away. However, the Oroville earthquake on August 1, 1975, with a magnitude of 6.1, inspired new investigations into the seismic stability of the Sierra foothills. Ronald Robie, Director of the California Department of Water Resources, told USBR Commissioner Gilbert Stamm in a September 1, 1976 letter, that state experts think the MCE used in the design is "inadequate" and should be increased to a peak ground acceleration of 40 to 50% gravity.

Dr. George C. Rouse, a structural engineer, was formerly in charge of a USBR program for monitoring the safety of Bureau structures. Rouse has made extensive studies of the Auburn design, both while a Bureau employee and after his retirement. Rouse notes, in addition to being a world's record in terms of size, the dam will be required to sustain stresses 25% greater than existing smaller, but similar structures. Rouse saw serious questions concerning the structure's capacity to withstand earthquakes. The Bureau's own analysis indicated the structure would crack during an earthquake with a horizontal ground acceleration of 12% gravity, probably within three seconds. However, the Bureau found that although the dam would crack, it would not fail. Rouse states'

## ABOLISH THE BUREAU, TOO?

A report drafted by 12 environmental organizations, ranging from the Sierra Club to the National Wildlife Federation, and put together by the Rockefeller Brothers Fund, recommends the Bureau of Reclamation be abolished and that projects authorized by the Army Corps of Engineers be thoroughly re-examined. The report covers 184 pages of environmental problems facing the nation and what should be done about them. Although it is likely to fall on deaf ears in Congress where public works construction has been viewed as essential to the West's economy, many of its recommendations are along the lines of promises made during Carter's election campaign.

"If the Bureau decides not to redesign the dam to eliminate cracking for the combined loadings (seismic, static), then it will be necessary for the Bureau to prove without any doubt that the cracked dam will be stable for imposed loads." Critics believe the Bureau has failed to effectively deal with questions as to the static stability of a cracked dam or the effect of a second or continuing earthquake upon a cracked dam.

Jasper Holland, President of the Association of Engineering Geologists, stated last April that Auburn Dam "would be unsafe in even a moderate earthquake, such as that in Oroville on August 1, 1975." Gordon B. Oakeshott, past Chief of the State Division of Mines and Geology, stated that "prudence would suggest that the dam should be designed to withstand a Maximum Credible Earthquake without cracking."

Representative Leo J. Ryan suggests that the Bureau have a second look and if the choice is between cost and safety, safety must predominate. He states: "If that dam fails, it's a cannon pointed at the entire Sacramento Valley. This isn't out in the Western plains or



mountains where population is sparse." Ryan promises to continue to investigate questions of the safety of Auburn Dam.

Desiree Stuart-Alexander and Robert Mark, geologist with the U.S. Geological Survey, have just released their study which demonstrates a relationship between high dams and earthquakes. The report is a study of dams around the world. It shows a correlation between the depth of water behind high dams and the frequency of earthquakes in the immediate area. The higher the dam, the greater the rate of earthquake occurrence. Dams over 150 meters in height have had a 26% incidence of earthquakes. Oroville Dam falls into this category as does the Auburn Dam. "There is no question about it: reservoirs trigger earthquakes," said Mark. In addition, privately, a number of USGS scientists expressed amazement at the apparent lack of interest in the quake-dam connection in California. One researcher noted that Sacramento is directly in the path of the lake Auburn's failure would create.

How does the Bureau of Reclamation plan to respond to all this? They plan to await the \$4 million Woodward-Clyde earthquake study due in April and it appears they expect to satisfy it and all other criticism by adding 30% more concrete to the dam's base, add some cables for strength, and/or a few other cosmetic changes.

While the Bureau promises to redesign Auburn Dam if necessary, the question is what degree of reliability will the Bureau impose upon the design and what risk will the people of Sacramento assume. The irony of the dilemma is that Auburn Dam was heralded for years as necessary to ensure Sacramento against flooding, something which thus far Folsom Dam has provided without this additional risk.

In light of the rapidly accumulating evidence of the potential failure of the Auburn Dam, Protect the American Canyons (PARC) has reorganized to oppose the dam. At the last meeting, January 23, 1977, over 30 enthusiastic people gathered to offer their talents and support. PARC will once again be evaluating the project, publicizing their findings and working to develop and direct the increasing public awareness of the many problems with Auburn Dam. Anyone interested in joining PARC please contact Sharon Carr, 1756 East End Rd., Meadow Vista or Friends of the River.

## STANISLAUS

The Corps' credibility on the New Melones Project has been challenged enough recently that they have decided not to clear vegetation in the canyon until getting a Memorandum of Understanding on mitigation for historic and archaeological sites. Their bulldozers had been ready in January.

The Corps whipped out an EIS on the Camp Nine Road Relocation in 6 days, hoping to start construction again as soon as possible. At the request of the Attorney General's office the period for comments on the EIS was extended another 15 days to February 15th. The State of California has expressed serious concern that the Corps is destroying this area long before necessary.

The State continues to push for recognition of its position that New Melones should not be filled until there is a need for the water it will hold: The Ninth Circuit Court of Appeals expects a decision on D1422 this spring. Whatever the decision, in all probability it will go on to the Supreme Court.

## WARM SPRINGS

In Sonoma County the fight against the Warm Springs Dam continues. In January Judge Spencer Williams ruled that the earthquake studies for the \$204 million project are adequate and that the environmental impact statement meets the tests of the law. The Warm Springs Task Force is still not convinced the 318 foot earthen structure in the Upper Dry Creek Valley can withstand an earthquake the magnitude of 8 or greater on the richter scale which the nearby Maacama Fault could produce. Judge Williams and Col. H.A. Flertzheim, chief district engineer for the Corps, feel the design of the dam could be modified later if the fault represents a larger threat than the Corps' geologists now believe.

The next step is to appeal Williams' latest decision. This route looks hopeful since Warm Springs is one of many projects which the Carter Administration intends to study because of local opposition and spiralling costs. Congress and the President must appropriate another \$164 million dollars if the project is to be completed.

## SNAIL DARTER TO LIVE!

Our Jan/Feb issue mentioned the snail darter's struggle for survival in the path of the Tennessee Valley Authority's Tellico Dam as lower courts had allowed continued construction. In early February this endangered little fish from the Perch family won a big victory when the Court of Appeals halted construction. Our society is starting to appreciate that other critters have a right to be on this planet too.

River

## EEL

Progress strikes the small town of Legget in the beautiful redwood country of Mendocino County as a multinational firm, Hanna Mining of Cleveland, plans to bench mine for nickel in nearby Big and Little Red Mountains. The mining will damage spawning streams that spill into the Eel River. The thirty year operation will bring jobs and money, but in the meantime, it will strip the mountains of timberland and take 50 million tons of ore-laden red topsoil, leaving the mountains with hard, barren soil. An anti-mining group, the Red Mountain Association, is concerned about the salmon in the streams, the deer in the forest, and what they and their kids have to look forward to thirty years hence when the mining runs out. During February public hearings, the Bureau of Land Management did not commit themselves to eliminating the mining or giving out permits.

## NORTH FORK STANISLAUS

The Sacramento Municipal District (SMUD) gave the N.F. Stanislaus a stay of execution upon receiving considerable public pressure. Great! SMUD does listen to the public. But, SMUD announced they will have a new contract ready by the time this issue of HEADWATERS comes out . . . we're waiting and watching. FOR and Cal-CAG (Citizens Action Group) have been meeting with SMUD officials to discuss more fully developing conservation techniques. They sound sincere.

Calaveras County Water District's intent has been to provide water for their people, but costs for developing new water are prohibitive. Thus, selling hydro-electric power would give them "free water" at the cost of the river. FOR appreciates their concern for domestic water needs; we would like to work with the county to find viable alternatives.

## SAN LUIS REY

The Army Corps has plans to build a 5.7 mile channelization project on the San Luis Rey River near Oceanside in San Diego County. Anyone wanting more information may contact Don Szalay at 701 Gage Dr., San Diego, CA. 92106, (714) 222-5138 or 223-8562.

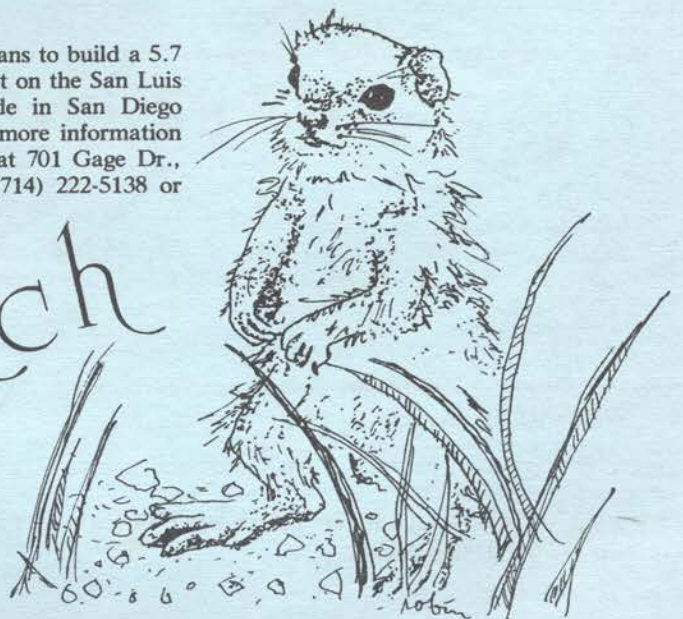
## KLAMATH RIVER BUTTE VALLEY

Still in the planning stages are the Bureau's "broad alternatives" for the Butte Valley - Upper Klamath River Basin. A series of 8 plans have been developed to supply water to Butte Valley and possibly other areas in the Upper Klamath Basin in Oregon. The alternatives range from development of Butte Valley ground water by means of a deep equifer, to diversion of the Klamath River above Keno, Oregon with offstream storage, to complete drainage of the Upper Klamath Lake with construction of a river channel and upstream storage. In addition to the benefits of irrigation, the usual accruments of hydro-power, improvement of water quality, recreation and fishery enhancement are listed. The current study was authorized in 1971 and scheduled for completion in late 1978 or early 1979. Local public meetings on the alternatives are scheduled to begin this March-April. For meeting information and dates write the Federal Bureau of Reclamation and request to be put on the mailing list: 2800 Cottage Way, Sacramento, CA 95825.

## BALDWIN SHIP CHANNEL

The Corps' plan to deepen the channels of the Delta to handle big tankers has been postponed. The State Department of Water Resources questioned the plans, projecting that the enlargement could seriously harm delta water quality by allowing much more salt water intrusion. The Corps has returned to their planning board, playing with the idea of an underwater dam to stop the flows. (It is hard to change dam mentality.)

Watch



# On Capitol Hill

Friends of the River staff, Brad Welton and Alexander Gaguine, spent several weeks in the Nation's Capitol, enjoying the hospitality of Alexander's parents and talking each day to Representatives in Congress, members of the Carter administration, bureaucrats, and environmentalists. Still in the frozen East, they send this report:

Our first attempts at lobbying began on Capitol Hill the Monday before the inauguration. It would be fair to say that California rivers were not the first priority on the minds of the State's Congressional delegation. We soon realized that three weeks, even of intense efforts, could not produce long lasting results. Many members of Congress and their staffs were receptive to our efforts; however, there is little understanding of the destructive nature of dams. Congress has difficulty focusing because its individual members represent such diverse segments of American life and to the Representative, local interests are more important politically than the national interest. Our objective became one of education by providing an information booklet and our "presentation," containing four parts:

- 1) A request for Congressional support for federal dam building reform and re-evaluation of all projects with questionable environmental or economic impacts.
- 2) Material on New Melones Dam Project, with special emphasis on the unanswered earthquake safety problems.
- 3) Information on the price jump and design problems of Auburn Dam.
- 4) The Wild River Study of the Tuolumne and a request to

preserve this river in the National Wild and Scenic Rivers System.

Brent Blackwelder of the American Rivers Conservation Council and Environmental Policy Center is probably Washington's most noted and effective critic on the water project pork barrel. He devised our next mission — to find a Congressional sponsor and signers for a letter to Carter asking that he redeem his pledge to stop destructive dam projects. We found Senator William Proxmire happy to become the sponsor and in only two days over 40 signatures have come in from 150 requests sent to sympathetic legislators.

Our meetings off Capitol Hill generally had a different tone. People in the Executive Branch are clearly waiting to see what Jimmy Carter is going to do. Changes are anticipated in regard to dam and river policies, but no one would guess what or when. Everyone made it clear that a much larger fight will be necessary to stop projects already under construction than to keep new ones from being authorized. But now is the time for river preservationists to rally: we have a Friend of the River in the White House.

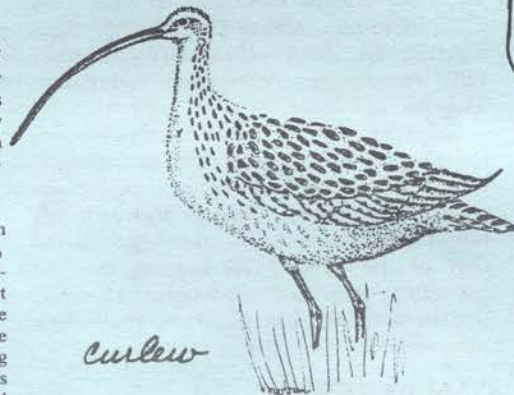
We experience Washington, and especially the Capitol, as a hive of people, all passing words back and forth — on paper, from podiums, across desks and telephone wires. Since we lacked the experience to "buy" a Senator or Cabinet member (we were broke anyway), we too passed words. We definitely made some excellent contacts and probably some "inroads" as well.

It will be important to continue updating the receptive lawmakers on California developments and provide thoughtful alternatives for change. The Sacramento office will need the help of anyone wishing to set up a chain of correspondence with her/his Congressional representative or Senator. Please contact us. We will provide guidance, if necessary, to get started.

## BOOK CORNER

*The Birds of California*, Arnold Small. Collier Books, New York, 1974. This exceptional book, chockful of pictures, and costing \$4.95 in paperback is a must for every birdwatcher. Covers all aspects of California's birds from nesting, migration, and feeding habits to personality traits. Discusses the state's land regions and climates with fascinating and elaborate descriptions of habitats. Includes a complete checklist.

*The Grass Roots Primer*, edited by James Robertson and John Lewallen. Sierra Club Books, San Francisco 1975. A compilation of first hand experience with environmental battles and strategies — what to do and what not to do in the political process of saving your favorite piece of the planet. "This is a practical book for people whose world is threatened, and who want to do something effective to prevent the piecemeal destruction of Earth's natural environment." Informative, entertaining, and inspiring.



*In memory of John D. Asher, M.D.,*

*Friends of the River has received a generous donation from his many friends.*

## Wilderness Sport Photo Contest

Mariah Magazine announces a nationwide photographic competition with prizes of \$4,500 in Nikon photo equipment plus a wilderness expedition. The contest will honor the most outstanding color photographs taken during the year of wilderness sports such as climbing, sailing, back country skiing, scuba diving, hang gliding, and whitewater sports. Mariah plans to publish the prize-winning photos in its Winter 1977 issue. The contest is open now until September 1, 1977. Entry forms and rules are available by writing: Mariah Photo Contest, 3401 West Division St., Chicago, IL 60651. A self-addressed envelope must be enclosed.



# JOIN FRIENDS OF THE RIVER

- My \$10, \$25, \$50, \$\_\_\_\_\_ membership will help support FOR as an on-going political and educational program to protect rivers. I will also receive HEADWATERS for one year (6 issues.)
- My \$5 membership will cover the cost of receiving HEADWATERS for one year.
- I am a Friend of the River! Please keep me on your mailing list for special Action Alerts.

I would like to be a volunteer. My interests are:

- |              |           |             |
|--------------|-----------|-------------|
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| legal work   | research  | entomology  |
| media        | printing  | biology     |
| fund raising | flying    | other       |
| archaeology  | geology   |             |

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Send to FOR, 401 San Miguel Way, Sacramento Ca. 95819. —