CLIFFSIDE SEAT

Margaret Dawns

REFLECTIONS

The Shining Hour

There are those who regard the sea primarily as a dimension, an immensity, a grand proportion with the horizon, stretching to eternity. These people think by expansion — the broad, deep picture they find rewarding. And among the largest of sea mammals on this planet, 20,000 Gray Whales, once nearly extinct by the hands of man, now migrate each year from Alaska south to Baja, returning with their newborn young, skirting the California coast, blowing their fountains as they pass — appropriate symbols of the larger view.

There are those who turn to the intimate savor of the sea, where an otter somersaults, then turns gracefully down between the kelp strands in a melodic manner. These people find their reward in the detailed focus on this smallest sea mammal, a life with undeniable strength but vulnerable to stress, pollution and man. Let us then reflect for a moment upon the dynamic ability of these creatures to bring into focus an ethical philosophy which truly can act as a powerful restraint upon man's violations of the marine ecology.

How often do we find selflessness and human generosity when it relates to sea mammals such as these? Can livelihood be tempered when it turns to these rare beings? Can a conscience in life be instilled quite suddenly, to rise to an emergency measure as it did when Roy Ahmaogak, an Eskimo whaler from Point Barrow, Alaska, found three Gray Whales trapped in a small pool that was rapidly freezing over in sub-zero weather? The desperate whales were raising their heads, breathing out a cry for help. One was to slip under the ice and die as rescue work commenced. The Eskimo whalers used chain saws to cut breathing holes, creating an irresistible momentum that quickly touched the conscience of the world. Then came helicopters with five-ton wrecking balls to crack the ice, followed by a Soviet ice-breaker which painfully cut a passage through ice-locked seas. For ten days in October, Eskimos, environmentalists, oil company workers, U.S. government officials, scientists and Soviet seamen carved the rescue by the sheer force of human determination.

As Roger Rosenblatt observed on PBS television network's MacNeil-Lehrer News Hour, "While two whales are deliberately saved, others are deliberately killed." But might not one hopefully ask, "As the conscience of conservation shifts from the dim memories of yesterday to the uncertainties of tomorrow, cannot we hold in our hearts the shining hour of today?"
Marking our Twentieth Anniversary...

"With Pride That It Is Our Privilege to Contribute"

"And so the effort must and shall go on; though the task will never be ended we must engage in it with a patience that refuses to be turned aside, with determination to overcome obstacles, and with pride that it is our privilege to contribute."

— Rachel Carson

As we reflect upon the events of the last two decades, we hope that you, our devoted members, take pride in the major accomplishments which your dedicated support has made possible: in the early years, defeating the attempts of the shellfish industry to limit the number and range of California's sea otter population as they sought to reclaim a tiny portion of their historic habitat; in 1977, obtaining the protections of the federal Endangered Species Act for the still struggling southern sea otter population; in the early 1980s, bringing to an end another tragic chapter in the otters' saga — the drownings of hundreds and hundreds of animals in nearshore gill and trawl nets; in 1987, restoring a small band of otters to their ancestral home, San Nicolas Island, after an absence of more than a century; and, in 1988, savoring the higher census counts which signal that at long last, renewed population growth is finally underway.

None of these accomplishments would have been possible, dear Friends, without your steady, sustaining support.

Nor would they have been possible without the concern and commitment demonstrated time and time again by the dedicated men and women in federal and state agencies — biologists, wardens, administrators, attorneys — primarily in the U.S. Fish & Wildlife Service and California Department of Fish & Game. Nor could they have been achieved without the leadership and responsiveness of federal, state and local elected and appointed officials and their hard-working staffs.

As our thoughts now turn to the future, let us not forget how far California's sea otters have come since that day, 50 years ago, below the Bixby Creek Bridge. Join us in wishing them Godspeed as they continue their journey towards recovery.

Congress Reaffirms Need to Protect California Sea Otters from Drowning in Fishing Nets

The 1988 reauthorization of the U.S. Marine Mammal Protection Act took special note of the need to continue to protect California's threatened sea otter population from drowning in fishing nets.

The Congress adopted compromise language which, on an interim basis, generally allows fishermen to continue to set nets in areas where they have been accidentally entangling and drowning marine mammals, in exchange for improved at-sea monitoring programs designed to better assess the nature and extent of the problem and help develop permanent measures that will reduce the number of marine mammal/fishery interactions.

However, because of the well-documented vulnerability of California's small sea otter population to drowning in nets set in shallow nearshore waters, Congress specified that "the incidental taking of California sea otters ... is strictly prohibited." We are very grateful to the Congress for its recognition of this special problem, and to our attorney, Don Baur, of Perkins Coie in Washington, D.C., for his excellent work to insure that there would be no unravelling of the hard-fought protections we have achieved for the otters.

Recognition for Jobs Well Done

At Friends of the Sea Otter's 1988 Annual Meeting, the Dr. Betty S. Davis Conservation Award was presented to the twelve men and women who were personally responsible for obtaining the first convictions in 18 years for killing California sea otters.

The first case, reported in detail in the last Raft, involved the May, 1987 clubbing of an otter on a beach near Moss Landing, then discarding its partially-skinned body in a gutter in Salinas. The main perpetrator was sentenced to 6 months in jail and fined $1,900. His accomplice was fined $1,000.

The second case involved drowning three sea otters in illegally set gill nets off the Big Sur coast in June, 1987. One fisherman received a $1,000 fine and was sentenced to 10 days in jail, while the second received a suspended sentence.

For bringing to justice those who would harm or kill members of this threatened species, our heartfelt gratitude to U.S. Fish & Wildlife Service Special Agent Bill Talkin; California Department of Fish & Game Wardens Drew Brandy, John Foster, Doug Huckins, Paul Maurer and Eric Wang; U.S. Coast Guard Lt.j.g. Charles C. Hoffman; Salinas Police Department Detectives Rocky Ugale (now with the District Attorney's office) and Larry Waller; Monterey County Deputy District Attorney Marie Aronson; San Luis Obispo County Deputy District Attorney Curtis Rankin; and Salinas Animal Control Officer Diane Frost.
Cause for Celebration!

CENSUS 1988

The May/June 1988 census, conducted throughout the otters' mainland range by the U.S. Fish & Wildlife Service and the California Department of Fish & Game, produced the highest ever count of California sea otters—1,724, including 219 pups. Not only is this the third consecutive annual spring count to show a significant increase, but it was also taken after 67 animals were removed from the central coast for their journey to San Nicolas Island. (At least 14 of those animals, however, returned to their original capture sites.)

As in the two preceding years, the increase appears to be in the number of sub-adults, rather than in reproductive-age animals or pups. In fact, the pup counts are almost identical over the last three years.

The increase is believed to be due primarily to two major factors: three mercifully mild winters following upon the ravages of the El Niño years and the State of California's prohibitions on gill and trammel nets throughout the shallow waters of the otter range. These two factors have apparently combined to allow greater survival of juveniles, who, in earlier years, suffered high mortality from winter storms and drowning in fishing nets.

A Cautionary Note

While we're certainly entitled to some long-awaited jubilation over the increased number of sea otters afloat off central California, we also must remember that the otters are just now beginning to get back to "square one" in their struggle for survival. In fact, in 1977, when they were first placed on the federal threatened list, the population was estimated to be between 1,800 - 2,000 animals! Today's disquieting reality remains that the southern sea otter has recovered to only about 10% of its historic pre-fur trade range and number.

The Fish & Wildlife Service's Dr. Robert L. Brownell, Jr., who oversees research on California sea otters and Florida manatees, confirms that the Service is "still concerned about the low growth rate of the California sea otter population compared to otter populations elsewhere."

"Between 1938 and 1976, California's population increased at about 5% per year. From 1976 until the early 1980s, the population did not grow at all, primarily due to the large number of sea otters accidentally drowned in gill nets. Since state legislation reduced the number of otters killed in this way, spring population surveys may now be increasing at about 8% per year."

"This is still much lower, however, than growth rates of 17 to 26% seen in sea otter populations at Attu in the Aleutian Islands, Southeastern Alaska, British Columbia and Washington. These growth rates obviously can result in dramatic differences in overall population size. For example, in Southeastern Alaska an original release of only 337 individuals 18 years ago has grown to over 3,600 otters today. Yet in California, a population estimated at about 300 otters in 1938 has had more than twice as long to grow (50 years), but is still only about half the size (latest count under 1,800). Therefore, we need to continue to examine the dynamics of the California sea otter population to better understand the factors that are depressing its anticipated growth rate."

RECENT SEA OTTER CENSUSES

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>1,124</td>
<td>1,153</td>
<td>1,181</td>
<td>1,124</td>
<td>1,231</td>
<td>1,345</td>
<td>1,430</td>
<td>1,505</td>
</tr>
<tr>
<td>Counts</td>
<td>222</td>
<td>122</td>
<td>123</td>
<td>236</td>
<td>181</td>
<td>225</td>
<td>220</td>
<td>219</td>
</tr>
<tr>
<td>Total</td>
<td>1,346</td>
<td>1,275</td>
<td>1,304</td>
<td>1,360</td>
<td>1,412</td>
<td>1,570</td>
<td>1,650</td>
<td>1,724</td>
</tr>
</tbody>
</table>

THE OTTER RAFT — WINTER, 1988/1989

Mr. PANETTA. Mr. Speaker, I rise today to draw my colleagues' attention to an important upcoming event. In a few weeks, many in California and across the Nation will be celebrating a noteworthy double anniversary. This year is the 50th anniversary of the rediscovery of the southern sea otter, a small and rare marine mammal previously thought to be extinct. It is also the 20th anniversary of the founding of a major organization dedicated to the preservation of this rare species, Friends of the Sea Otter...

“We celebrate this double anniversary, first and foremost, for what it is — the recognition of the survival of an important species and of the hard work of a group of extraordinary people dedicated to the animal's well-being."

“But I believe that we should celebrate this double anniversary for the important message which it sends to all of us. The near extinction of the sea otter and its recent increases in population show us that man can make a difference — be it positive or negative — in the natural environment around him. Man was given a rare second chance to assist in the recovery of the sea otter, and the work of the Friends of the Sea Otter demonstrates that we should seize upon these opportunities."

“Thus, as we celebrate this anniversary, I hope that we will also consider the many threats to our coasts and waterways, even to life on the planet, and ask ourselves what kind of impact we are making, remembering always that the potential for positive change exists. In this respect, the survival of the sea otter and the good work of Friends of the Sea Otter stand as shining examples for all of us.”
Hubbs-Sea World Study Confirms Futility of Keeping Otters Out of Oil Spills

"Along an exposed area of California coast there is no practical way to exclude otters from a large moving spill."

With coastal tankships transporting over 100 million barrels of oil and petroleum products past the California sea otter's habitat each year and the U.S. Department of Interior apparently still intent on opening up the otter's range to drilling rigs, keeping California's sea otters out of harm's way during a major spill is an ever-pressing concern. Unfortunately, however, a recently-released study offers little hope for the success of such efforts.

Hubbs-Sea World Marine Research Institute's "Sea Otter Oil Spill Avoidance Study," funded by the U.S. Minerals Management Service, exhaustively investigated sounds, sights and smells that might deter otters from entering oil-contaminated areas.

Preliminary tests were conducted on 17 male otters temporarily held in a natural lagoon in Prince William Sound, Alaska in the summer of 1986. Of all the stimuli tested, the broadcast of otter pup calls to attract the otters, and killer whale vocalizations to repel them, elicited the strongest response. (Pup calls broadcast outside the lagoon also temporarily attracted free-ranging otters, especially mother/pup pairs.)

Attempts to lure the otters with food and repulse them with smells from natural oils, aromatic chemicals and "sour crude" (a high sulfur crude oil, repugnant to people but not, apparently, to otters) were far less effective.

Importantly, the animals repeatedly dove beneath an oil boom stretched across the lagoon, a warning that in an actual spill situation oil booms would be very ineffective barriers to otters.

The following summer the study moved to central California. While researchers observed with spotting scopes from shore, otter pup and killer whale calls and other recorded sounds were broadcast above and below water to a large group of free-ranging otters rafting in kelp beds near Cayucos Point north of Morro Bay.

Only 4 out of 58 otters in the study area were attracted to the pup calls from floating acoustic buoys and, after investigating their source, the four soon lost interest. Nor did pup calls broadcast from a small moving boat induce the otters to leave the kelp beds. Only those otters nearest the buoys dispersed during the playback of killer whale calls; the broadcast of a "warble tone" elicited a mixed response, some otters moving away from the source while others moved towards it. Interestingly, during a voice test of the acoustic buoys, researchers discovered the most alarming sound to be the human voice — one which had a temporary but pronounced effect in dispersing the rafting otters.

Although a combination of these sounds could repeatedly disperse the otters for about two hours, most habituated rapidly to the broadcasts. Very few actually left the study area and those that did probably returned soon after.

Overall, the otters were found to cling tenaciously to their kelp beds. This behavior, unfortunately, may greatly increase their chances of being contaminated by spilled oil which itself is known to accumulate and linger in kelp canopies.

(Previous experiments by the California Department of Fish & Game to determine the feasibility of "herding" otters away from spills with boats and noisemakers have also been unsuccessful — the otters deftly outmaneuver the humans.)

The study concludes that, "Along an exposed area of California coast there is no practical way to exclude otters from a large moving spill. In the absence of effective methods to keep sea otters out of a spill, the emphasis must remain on spill prevention, containment and clean up."

But, unfortunately the sad reality remains that available technology is still not capable of controlling a major spill under the weather and sea conditions typical of the California sea otter's habitat — an area of dense fogs and rough seas. Thus we must make whatever preparations we can to care for oiled otters, seek out ways to move tankers further offshore so that in case of an accident there is adequate time to respond, and, last but not least, tenaciously hold-the-line against further oil leasing near the otter's range.

—RTS


Translocation Provides Critical Insights on Problems in Caring for Oiled Sea Otters

Valuable lessons learned from the arduous process of caring for large numbers of wild otters during their temporary captivity in the first year of the translocation project must now be incorporated into oil spill contingency planning, according to U.S. Fish & Wildlife Service biologist Dr. Glenn VanBlaricom.

Speaking at Friends of the Sea Otter's Annual Meeting, VanBlaricom reported that unquestionably the most sobering lesson has been that even healthy sea otters can die simply from the stress of being in captivity.

Along with veterinarian Tom Williams and a small cadre of dedicated otter tenders, VanBlaricom supervised the care of the San Nicolas-bound otters during their brief stay at the Monterey Bay Aquarium. He reported that while each otter's susceptibility to stress may vary, some of the most obvious signs are rigid posture, unresponsiveness to other otters, abnormal grooming behavior (grooming only a tiny area of fur on the chest, leaving the rest of the coat to become matted), shivering, headshaking, frequent vocalizing and lack of appetite.

Minimizing the length of time otters are held, eliminating sources of disturbance and reducing the frequency and duration of transport are all essential to the welfare of wild otters in temporary captivity. Minimizing handling stress will be even more critical for oiled otters already suffering from exposure, inhalation of noxious fumes or oil ingested while feeding and grooming.

Other knowledge gained during the translocation's first year is also very significant for oil spill contingency planning. Older otters generally appeared to suffer more stress in captivity than younger animals — an indication that animals in their reproductive prime
Offshore Oil Battle Resumes – Otters & Others Again at Risk

Barely one week after the national Presidential election, the U.S. Department of Interior was back to its old tricks — this time pushing full speed ahead with its plans to open up 150 miles of central California coastal waters to offshore oil drilling along Sonoma, Marin, San Francisco, San Mateo and Santa Cruz counties. As many as 20 platforms, each with from 50 to 70 wells, could be constructed.

Central Coast OCS Lease Sale #119 includes some of the most wildlife-rich waters on the Pacific Coast. Indeed, areas as biologically important and productive as those adjacent to the Gulf of the Farallones National Marine Sanctuary, which includes one of the most important seabird breeding colonies in the continental United States, could go on the auction block by March, 1991. Tracts could be leased as close as 3 miles of shore along the San Mateo and Santa Cruz County coasts near Año Nuevo State Reserve, the wild and windy haven of the massive northern elephant seal whose spectacular recovery has been one of nature’s most heralded survival stories.

Año Nuevo is also critically important for another survivor whose recovery, alas, is far more tenuous. For Año Nuevo marks the northernmost extension of the small portion of California coastline that has yet been reclaimed by the southern sea otter. Otters are now seen foraging in the surging channel between the island and the shore, and mothers with pups have found refuge there since 1983.

While the lease offering stops just short of Monterey Bay itself, there is no question that offshore oil drilling on its very rim places the Bay’s rich tapestry of marine life in great jeopardy. In truth, a glance at the map reveals Monterey Bay positioned as a great catcher’s mitt which would be at the receiving end of oil spills occurring off Santa Cruz, San Mateo or San Francisco counties.

Time is short but there are opportunities to derail this environmentally reckless leasing plan. The first is now at hand:

The Department of Interior’s Minerals Management Service has published a “Call for Information and Nominations” and initiated a “Sensitive Tract Evaluation Process” for OCS Lease Sale #119, asking the oil industry and the public to comment on specific areas of the lease sale which should be included or deleted. Simply state you are submitting “negative nominations” on ALL tracts proposed for leasing in Lease Sale #119 — an environmentally sensitive region where offshore oil drilling should be prohibited. Emphasize the dangers to the sea otters from any drilling south of San Francisco. Identical letters should be mailed to both addresses at right. (On the envelopes please write “Comments on Proposed Central California OCS Lease Sale #119.”)

may have the poorest chance of surviving the oiling, cleaning and rehabilitation process. Further concerns arise from the fact that the otters’ homing instinct — particularly in adults — is far stronger than previously thought; raising the question that even once rehabilitated, their time in captivity may need to be extended to minimize the chances of the otters returning to their home ranges where the areas are still contaminated with oil.

Caring for a large number of otters will require an extraordinary amount of space, time and effort — and place great demands on facilities and personnel. During the translocation as many as 12 otters were held in 20-foot-diameter pools. However, to prevent crowding stress, VanBlaricom now recommends that no more than 6 - 8 animals be held in a 20-foot pool. 5 - 6 otters in an 18-foot pool and 3 - 4 animals in a 10-foot pool.

Poolside and dry tanks located in quiet areas, isolated sites for very sick animals, copious amounts of clean water, a reliable filter system to insure water quality and the capability to provide warm water baths will all be key requirements.

One of the most stressful times for the translocated otters was when they were scooped out of their tanks at the Aquarium and placed back in carrying cages for the flight to the island — a clear sign that oiled otters may fare far better if they can recuperate at the same facility where they are taken for their initial cleaning rather than be moved to another site.

If California’s sea otters are to have any chance of surviving not just the immediate crisis of oiling but also the subsequent stress of handling and extended periods of time in captivity, these issues must be addressed. Cleaning and rehabilitation facilities within the otter range must be identified and readied now. Training protocols and hands-on demonstrations of oiled otter cleaning techniques (See Raft #36, Winter 1986/87) are still in the planning stages. Spurred on by Coastal Commission requirements for adequate sea otter oil spill response plans for already-approved offshore oil activities just to the south of the otter range, the oil industry, state and federal agencies, aquaria, wildlife rescue groups and FSO are now working together — if not in total agreement — to finalize and implement a comprehensive plan. It’s clearly a race against time.

— RTS
California Sea Otter
Translocation
Enters Second Year

September 27, 1988, marked the beginning of the second year of federal and state efforts to restore a breeding colony of California sea otters to their former island home, little San Nicolas, outermost of Southern California's Channel Islands. The program provides for moving up to 70 otters a year (but no more than a total of 250 animals) over a five-year period.

With capture boats operating simultaneously off the southern Big Sur coast and in the Monterey Bay area, by the Thanksgiving holiday 29 more otters had been carefully transported to the island, where at least 14 otters moved during the recovery project's first year awaited them.

The presence of that little band of otters that has set up housekeeping at San Nicolas is an encouraging sign that there will again be a viable reproductive colony at the island. Several modifications to the first year's protocol which have been designed to reduce the amount of stress and dispersal in this year's group of otter pioneers should also increase the chances for the colony's success.

To minimize handling, holding time and the animals' exposure to people, Service biologists are moving smaller groups out more frequently, rather than holding them in captivity until a large group is assembled for transport. Captured otters are immediately taken to the Monterey Bay Aquarium, examined, held overnight, and then driven by van to the Monterey airport for the flight to San Nicolas. Up to four otters are transported per chartered flight, with up to two flights possible a day. The otters are also released immediately into the island's nearshore waters to join their comrades rafting in the offshore kelp beds, rather than initially being held in floating pens. (The pens were thought to be necessary when the first otters were returned to San Nicolas last year in order to help them acclimate to a strange new environment where no other otters were present.)

To help in locating the otters after release, each animal carries with it a miniature radio transmitter attached to one of two flipper tags used for visual identification.

There is no question that the greatest disappointment during the first year of the program was that many of the otters left the island — at least 14 are known to be safely back home near their original capture sites. All evidence from the first year indicates that otters leaving San Nick were primarily larger, older animals who were "homing" back to their mainland range rather than attempting to set up other colonies in Southern California. (Perhaps in the long run, the apparent strength of the otters' homing instinct may be a promising sign for the future of the new colony — an encouraging indicator that otters born at San Nick will stay there.) To reduce the tendency of translocated otters to return home, during the second year the Service is only taking animals weighing between 25 and 35 pounds. Restricting otters selected for San Nicolas to the 25-35 pound weight class has also reduced the incidence and severity of stress suffered by the animals during their temporary captivity. These subadults generally appear to be more at ease during their transition than reproductive age adults and very young juveniles were last year.

As the Service's Acting Regional Director, Gary Edwards, has summed up: "Previous experience underscores the fact that establishing a new otter colony is not accomplished overnight. There are always some uncertainties when you embark on a project such as this. It is a learning process, and all of the knowledge gained in this first year will be used to improve our operations in the future." The Service's position is supported by California Department of Fish & Game Director Pete Bontadelli: "Based on a careful review of project modifications proposed in the research protocol for year two of the program, the Department believes it is important and justified to proceed with this project for another year. A tremendous amount of time and intensive effort has been dedicated to insure every possible success for this precedent setting program and we believe that it should be given every opportunity to succeed."

We agree. As with previous translocations of Alaska sea otters from the Aleutian Islands and Prince William Sound to Southeast Alaska, British Columbia and Washington state — all of which started out slowly, suffered initial declines, and then produced well-established and growing populations — it takes time. Similar difficulties have been overcome in translocations of other large mammal species as well; for example, pronghorn antelope, black bear, white-tailed deer, big horn sheep, and mule deer.

— RTS & CF

For an overview of the first year of the translocation effort, reprints of articles in Rafts 38 & 39 and copies of the U.S. Fish & Wildlife Service's 13-page first annual report on the project are available for $1 postage from Friends of the Sea Otter.

The Otters' Private Pilot

These days, sea otters fly the friendly skies to San Nicolas Island with pilot extraordinaire Bob VanWagenen. Bob flies as many as 4 otters at a time, each in its own individual "sk" kennel secured behind the pilot's seat. Screens over the back windows keep the sun from beating in, and while traveling at an altitude of 7500-9500 feet — where the outside air temperature is a chilly 40 degrees — Bob opens up the vents and dabs a coat so the otters can stay cool.

A pilot for 20 years, Bob also conducts otter radio tracking and aerial surveys at the island and along the mainland. He has a Bachelor's degree in Human Biology and Physiology from Sacramento State and did graduate work at Moss Landing Marine Laboratories. Bob's company "EcoScan Resource Surveys" has, among other projects, conducted annual kelp surveys using infrared photography and helped translocate bald eagles. We are deeply grateful to him for his work on behalf of the otters and for ensuring them a safe journey back to San Nicolas.

— RTS
The International Asian Otter Symposium

Dr. James Estes
U.S. Fish & Wildlife Service
Institute of Marine Sciences, University of California, Santa Cruz

The International Otter Symposium has provided scientists, conservationists, and resource managers an invaluable forum in which to share ideas and information about otters and their habitats. In August of 1985 the Symposium met in Santa Cruz, California where discussions appropriately focused on sea otters and North American river otters. Three years later, and a half a world away, the Symposium met in Bangalore, India to discuss the biology and conservation of otters in southeast Asia and the Indian subcontinent. As might be expected, the news was good and bad. The good news is that there is sufficient concern for otters and their habitat in Asia to attract representatives from numerous countries, many from the Third World, including Nepal, Pakistan, China, Japan, Malaysia, Indonesia, Sri Lanka, Bangladesh, Laos, Thailand, and Viet Nam. India was especially well represented, and the impending meeting stimulated the Indian Government, for the first time, to conduct distribution surveys of otters throughout most of the country.

The alarming news was that very little is known about otters over most of Asia, although there was a broadly held view that all is not well. In general, wildlife in Asia has been devastated over the past half century by excessive shooting, poisoning, and probably most importantly, habitat destruction in the form of deforestation, over-grazing, agricultural development and pollution. The plight of many large conspicuous mammals is well known — the cheetah in Asia is now extinct; rhinoceroses have dwindled to a few isolated populations; once vast herds of deer and antelope are now largely restricted to parks and sanctuaries; and the mightiest of the great cats and the symbol of Asian wildlife, the tiger, has declined 90% in numbers. Ultimately these problems stem from an insidious and seemingly unstoppable force — overpopulation. (India alone supports a human population roughly four times larger than ours in the United States, and it is still increasing rapidly.) Amidst these changes, the destruction of wetlands and the decline of a significant group of wetlands carnivores — the otters — remain largely unappreciated and poorly documented. To further complicate this situation, there are at least three species of Asian otters (the Eurasian otter, Lutra lutra; the smooth otter, Lutra (Lutrogale) perspicillata; and the small-clawed otter, Aonyx cinerea). These species are very similar in appearance and have rarely been segregated in the few available surveys.

Much of the same can be said of Africa and South America. Wetland habitat destruction is commonplace; trapping and shooting continue largely unregulated in many areas; and there is virtually no reliable information on the distribution, status, and trends of otter populations. Otters are frequently maligned by fishermen; there are few protective laws or regulations; and those that exist are difficult to enforce.

More is known of otters in North America and Europe, and in some cases the news is even encouraging. Sea otters are the best known and have the brightest future of all the species. Except for the population in California, which at best has experienced a precarious recovery, sea otter populations have occupied or are reoccupying most of their historical range in the North Pacific Ocean. This undoubtedly is because of the comparatively remote and undisturbed marine environment in which they live. The North American or Canadian river otter (Lutra canadensis), with protection and recent restocking programs, also seems to be on the increase in many parts of the United States and Canada. The status of the European otter (Lutra lutra), which historically ranged from Ireland to Japan, and from northern Africa to Siberia, is something of a mixed bag, although in general the species appears to be on the decline. It is extinct or nearing extinction throughout most of heavily-industrialized western Europe. Industrial pollution, in particular pesticides and acid rain, is probably its most severe threat. Populations seem to be doing well in areas supporting undisturbed and relatively unpolluted wetlands, however, such as Ireland and northern Scotland. The status of this species remains largely unknown throughout most of Asia and the Eastern Bloc countries.

The International Union for the Conservation of Nature’s Otter Specialist Group, which also convened during the conference, is now drafting an Action Plan for otters worldwide. Funds are also being sought to publish the proceedings of the Symposium so that the important reports and ideas generated at this unique gathering can be translated into effective efforts to preserve otters and otter habitat as quickly as possible. The Indian Government has made a firm commitment to help publish the proceedings of the Symposium and Friends of the Sea Otter has pledged $500 towards this worthy endeavor.

Among the number of urgently-needed actions identified at the conference were:

1) Range and status surveys. This seemingly simple task is in fact a daunting challenge.
2) International trade of all otter skins should be banned. All nations should be strongly urged to sign CITES (Convention on the International Trade of Endangered Species). Otter skins bring high prices on the world market. Unfortunately, most species are not identifiable on the basis of their pelt alone. An effective prohibition against the international trade of all otter skins would go a long way toward discouraging the exploitation and export of otters from Third World countries.
3) Basic research on home range and habitat use. The sad fact is that in most countries the only real hope for saving otters is by establishing parks and sanctuaries.
4) Studies of systematics and population genetics. The distinctiveness of species and genetically unique populations is poorly known. Species and subspecies that we don’t even know exist may be in jeopardy.
5) Routine monitoring of pesticides and other environmental toxicants in otter tissues and in the habitats of otters. Drs. Chris Mason and Sheila Macdonald of the University of Essex in Great Britain have determined critical levels of various environmental toxicants for otters in western Europe. These important studies can be used as a basis for determining potential difficulties with pollution, an often unseen killer, in other areas. As an obvious corollary, First World Nations must be discouraged from selling dangerous or prohibited pesticides to the Third World.
6) Public education programs to teach people about the importance of otters and wetland habitats. We need clean water to survive; otters are probably the most sensitive indicators of the health of wetland habitats; and thus a world unifit for otters likely will also be unifit for humans.
"Our Man in D.C." reports from Alaska:

Otters & Nets Alaska Style – An Opportunity for Constructive Compromise?

Donald C. Baur

During a visit to Alaska in September, 1988, I obtained information about various management issues that are likely to arise in respect to sea otters over the next several years. Prince William Sound is one of the primary locations in Alaska where fishery interaction conflicts with sea otters are severe. Sea otter populations in the Sound have increased significantly in recent years. Though fur traders had virtually extirpated otters from the Sound at one time, they are now making a strong comeback. Rough estimations place the Prince William Sound population at around 5,000 - 10,000 animals.

The primary source of fishery interaction is the entanglement of otters in nets used in active fishing operations, primarily for salmon. Entangled otters may drown, be injured or be killed by the fishermen. Mortality also results from the separation of pups from their mothers. When care is taken, however, otters generally can be released safely. There is no reliable estimate on the extent of the problem. However, in one recent overflight of an area where fishing activity was occurring, 18 boats were observed with their nets out and 20 otters were seen entangled in the gear. Although this may have been an unusually severe case of observed interactions, if it is any indication of the nature of the problem it suggests that much needs to be done.

Fortunately, however, it is likely that the rate of interactions in Prince William Sound and elsewhere in Alaska can be controlled. Because many of the interactions occur in gear that is being closely attended and entanglement generally occurs at the surface (as opposed to the problem in California, where nets are submerged and often left unattended for long periods of time), fishermen should be able to observe and release captured otters. Additionally, it should be reasonably easy for fishermen to avoid areas of known otter concentrations. Unlike set nets which are left unattended and may be encountered by otters and other marine life over an extended period, the gear used in many (but not all) of these fisheries can be deployed in a way that will not create much of a likelihood of such an incident occurring. Thus, through permit conditions and, where necessary, area closures, the encounter rates should be susceptible to significant reductions.

The rate of interactions could also be reduced through certain restrictions as to the time that fishing activity occurs, especially in particular areas. Bad weather, night time and other conditions that make observation of entangled animals difficult can be made off limits to fishing in areas of high otter concentrations.

The situation elsewhere in Alaska is not as well understood. Fishery interactions also pose potential problems along the Kodiak Archipelago, the Alaska Peninsula and Cook Inlet, and are likely to develop in Southeast Alaska in the near future.

Although Alaska sea otters were not a major species of concern during the recent reauthorization of the U.S. Marine Mammal Protection Act, these concerns were acknowledged during the discussions and negotiations over the legislation. Indeed, the legislative history of the amendments calls attention to the need for careful review of fishery/marine mammal interactions off the coast of Alaska and directs the National Marine Fisheries Service to cooperate with the U.S. Fish & Wildlife Service in addressing problems involving Alaska sea otters. It is expected that the Act's newly-enacted provisions for monitoring marine mammal/fishery interactions will quickly provide the necessary information to determine the nature and extent of the problems. And it is also hoped that the Fish & Wildlife Service will exercise leadership in addressing this long-ignored management concern. There is growing awareness of the problem among fishermen, and the basis for a cooperative management program involving the fishing industry already exists. Hopefully the groundwork can be translated into constructive action in the months ahead.

Note: Don Baur, former Counsel to the U.S. Marine Mammal Commission, now practices with Perkins Coie, Washington, D.C., and is the attorney who ably represented Friends of the Sea Otter during this year's reauthorization of the Marine Mammal Protection Act.

Sanctuary for Monterey Bay

Thanks largely to the tireless efforts of Congressman Leon Panetta, legislation signed into law on November 7, 1988, requires that the Secretary of Commerce designate Monterey Bay as a National Marine Sanctuary by December 31, 1989.

During the upcoming year, NOAA must prepare a draft management plan and environmental impact statement for the proposed Monterey Bay sanctuary. A series of public hearings will be held and an Advisory Committee of local governments, educational institutions, and environmental, agricultural and fishing interests will make recommendations on sanctuary policies and regulations. After the final designation document is reviewed by Congress and the Governor of California, Monterey Bay should receive the Sanctuary protections it so richly deserves.

Bravo Congressman Panetta! Many thanks are also due to Senators Alan Cranston and Pete Wilson, Washington Congressman Mike Lowry, Mike Weber of the Center for Environmental Education and Mark Palmer of The Whale Center.

Bontadelli New CDFG Director

Since the last Raft, Peter F. Bontadelli has been confirmed as the new Director of the California Department of Fish & Game. In recent years, as one of the Department's top-level administrators, he played a pivotal role in obtaining the legislative bans on gill nets within the shallow waters of the otter range. He has also provided critical support in the effort to reestablish a breeding colony of otters at San Nicolas Island. During his watch, the Department obtained the first convictions in 18 years for killing sea otters. The Patrol Boat Blue Fin has been permanently stationed in Monterey Bay, and, with funds provided by the recent passage of Proposition 70, the Department is now in the process of obtaining additional patrol boats and equipment to improve law enforcement capabilities along the Central Coast.

We are grateful for Pete Bontadelli's past contributions to the otters' welfare, and look forward to further progress toward the otters' recovery under his stewardship.
Federal Government Moves to Stop Abuses of Marine Mammal Protection Act – Clarifies Prohibition on Killing Alaska Sea Otters for Native Handicraft Trade

In a strong and forthright manner sure to stir up further opposition and legal challenges from Alaska Natives, the U.S. Fish & Wildlife Service has published regulations which clarify the prohibition on killing Alaska sea otters in order to produce such items as teddy bears, pillows, hats, parkas or other articles of clothing for commercial sale. The number of otters being killed for such purposes has been a matter of growing concern — over 500 were reported killed in 1986 alone.

The November 14, 1988 Federal Register notice reads, in part: “Since 1941, the date of the earliest exploitation of sea otter populations for the fur trade, there has been virtually no use of sea otters by Alaska Natives. Native takings were prohibited by the Russians and later by Alaska statutes during the 18th and 19th century fur trade... Alaska Natives have apparently not commonly produced and sold handicrafts or clothing from sea otters within living memory.

“The paramount objective of Congress in passing the Act was the protection of marine mammals. Congress allowed the taking of marine mammals by Alaska Natives to continue as those practices existed at the time of the passage of the Act, but did not provide for the development of new uses or the expansion of taking by natives. Congress intended to preserve existing native uses of marine mammals, characterized as the maintenance of ‘cottage industries’, rather than to promote economic development or the growth of Alaskan arts and crafts industries. The fact that sea otter handicrafts have not been commonly produced for more than 200 years makes it impossible to consider them a part of the ‘cottage industry’ or status quo Congress was exempting from the provisions of the Act. The native exemptions were passed with the implicit understanding that the patterns of native taking and use of marine mammals would remain as they were in 1972, at the time of passage of the Act. For the sea otter, this would allow essentially no take by Alaska Natives for the commercialization of handicrafts and clothing...”

Friends of the Sea Otter is already in court in Alaska, supporting the federal government’s position in a suit filed by Alaska Natives seeking to kill otters for commercial profit. We are opposed not only to the unjustified killing of Alaska otters but also to the development of a market and demand for sea otter fur with the resulting threat of increased poaching of both Alaska and California animals.

Thus we welcome the Service’s firm reaffirmation of the intent of the Marine Mammal Protection Act to protect, not exploit, Alaska sea otters; and urge our members to support this important regulation which is certain to be intensely opposed by Alaska Natives.

Alaska Sea Otters

“At present, more than 90% of the world’s sea otters live in coastal Alaska waters. In some areas human populations have grown substantially and are affecting, and being affected by, local sea otter populations. For example, sea otters are being caught and killed incidentally in several fisheries. Moreover, in several areas they are being affected by disturbance, oil spills, and other forms of environmental alteration from coastal development, coastal and offshore oil and gas development, Native hunting, poaching, and other human activities. Conversely, in several areas sea otter recolonization is impacting commercial, subsistence, and recreational fisheries for sea otter prey species (e.g., certain benthic invertebrates) that grow to abnormally high numbers after sea otter populations in those areas were extirpated or reduced by commercial exploitation.”


Contributions Sought

Sea Otter Exhibit on Drawing Board

As with the great whales, the key to the otters’ survival is public education. Since we cannot bring all the citizens of the nation to view the otters in person, we must “take the otters to the people.”

One of the most effective ways to convey the remarkable saga of the sea otter would be through a professionally-executed, museum-quality, comprehensive educational exhibition of choice photographs, maps and historical drawings which would travel to museums, aquariums, zoos and other public institutions throughout the country. Plans for just such an exhibit, to be entitled, “The California Sea Otter – A Valiant Return, A Precarious Survival, A Symbol of Hope for American Wildlife,” are now underway.

The appraised cost of the exhibit is estimated at $20,000 — a sum which we cannot remove from our general operating funds. Thus we are now seeking gifts to cover this large expense from those who share our concern for the otters. Generous donations from Winifred Adams, Kathleen Huettner, The Richard Grand Foundation, Ruth Heller, and Mrs. Philip Weld have already contributed $4,000 towards this goal, and we are now seeking the additional $16,000 needed to make this dream a reality. If you would like more information on this worthy project, please contact our Executive Director, Carol Fulton.
Washington State Sea Otter Transplant Doing Well, But Future Clouded by Man's Activities

G. Edward Bowby, Barry L. Troutman, Steven J. Jeffries

Note: The following article is based on excerpts from a fascinating new report on Washington State's translocated sea otter colony, and also provides us with additional perspective in assessing the current situation in California.

Early History of Sea Otter Populations in Washington: Historically, Washington sea otters were once found in abundance and commercially hunted along the central portion of the outer coast between Grays Harbor and Point Grenville. Otter populations along the remainder of the coast were reported to be sparse, although early reports by Lewis and Clark and others suggest that another population concentration may have existed near North Head, immediately north of the mouth of the Columbia River. Some otters had ranged along the Straits of Juan de Fuca as far east as Discovery Bay, although apparently not in numbers sufficient for the subsequent commercial fur trade...

The size of Washington's original sea otter population has never been established... Historic otter populations may have been sizeable, however, since early accounts mention individual "herds" ranging from 50 to nearly 400 animals. Overhunting had severely reduced Washington's otter population by the late 1800s and in 1903 the last of the professional sea otter hunters in the state had quit hunting. The last known otters in Washington were taken in Willapa Bay in 1910. Washington's otters, like those in so many other areas, had been totally extirpated.

Reintroduction of Sea Otters into Washington: In 1969 sea otters were reintroduced into Washington waters following a 59 year hiatus. The goal of the reintroduction was to reestablish a self-sustaining population of this once native species within its ancestral range. The transplant occurred on 31 July and resulted from a joint effort by the Washington and Alaska Wildlife Departments, the Atomic Energy Commission (AEC), the Department of Defense, and the U.S. Fish & Wildlife Service. The transplant stock had been acquired from a sizeable population at Amchitka Island in Alaska's Aleutian Islands chain (which the AEC was using for underground nuclear testing — ed.). A total of 29 animals (19 females; 10 males) was released at Point Grenville, a location where otters had historically been abundant. Unfortunately, within a few days 14 of the transplanted otters were found dead on the beaches. Apparently most of these animals succumbed to a combination of stress and hypothermia, with the latter caused by a deteriorated pelage condition acquired during their transportation from Alaska. Two animals killed by gunshot were found some time later, bringing the total loss to at least 16 of the 29 animals. With the realization that the small surviving nucleus group would probably be incapable of producing a healthy, self-sustaining population, a second transplant consisting of 30 animals (22 females; 8 males), also derived from the Amchitka Island population, took place on 21, July 1970 near La Push (at James Island), at the mouth of the Quillayute River.

Valuable lessons had been learned from the near failure of the 1969 transplant, with transport and handling methodologies significantly improved in the interim. As a result, the 1970 effort was highly successful and no apparent mortality was observed following the transplant.

Population Growth and Range: ...The population has grown, albeit slowly, roughly tripling the numbers effectively transplanted 17 years ago...

We believe it is likely that the Washington population did in fact suffer a decline during the initial post-transplant period as did the Oregon transplant which eventually failed.

The transplanted population had increased to a 1987 high count of 107 individuals (including both dependent and independ-
nities and availability to related fisheries. Dive surveys around the Cape Alava kelp beds have revealed abundant midwater and benthic fish numbers, suggesting such a relationship.

**Activity-Time Budgets:** Diurnal (daytime) activity budgets, based on 499 hours of observations, revealed that Washington sea otters spent a relatively small proportion of their time feeding, 9.5% in 1986 and 11.2% in 1987. The majority of their daylight hours were passed in a resting state, 62.6% in 1986 and 66.1% in 1987. This daytime pattern of low feeding frequency is similar to areas in Alaska and California where otters are considered to be below equilibrium density and not food limited.

**Reproduction:** In Washington, spring appears to be the peak pupping season and fall the breeding season, following similar patterns of otters in Alaska and California. Pupping rates also appear to be similar. Our record of 16 pups born in 1986 out of a population of 51 independent otters and 20 pups in 1987 from 87 independents falls close to annual parturition rates of 20-30 pups/100 independents reported for California and Alaska otters.

**Sea Otter-Fishery Interactions:** At present there are no recorded otter-fishery interactions in Washington, but if and when otters expand their range north or south, they will encounter several sport and commercial shellfisheries (urchins, razor clams, Dungeness crabs) along the coast. There is a Makah tribal gill net fishery for salmon using marine set-nets from Cape Flattery to Point of Arches, that borders the current northern range of otters. If otters do expand their northern range and/or if the fishery moves south, the probability of fisheries-related mortality will increase. Given the small size of our current otter population, such mortality could be highly significant.

**Oil Risks to Otters:** The proposed leasing of tracts off the Washington coast for oil and gas exploration and development raises serious concerns over the risks such activities could have on Washington's sea otter population. Washington's small population (107 to 136 animals) inhabits a limited range with the entire population currently found along just 70 km of coastline. Critical habitats such as feeding and sheltering areas within the current range are limited in number and patchily distributed. Because of this, large segments of the otters are seasonally concentrated in very limited areas.

The combined factors of small population size and seasonal concentration of large segments of the population make the Washington population exceptionally vulnerable to impacts from oil. Even a relatively small spill could potentially decimate the population. Perhaps the worst case scenario would involve a winter spill of crude oil reaching the Cape Alava area. Not only is most of the population concentrated in that area during the winter months, but also this is the time of the year when otters are most likely to be under the additional physiological stresses brought about by cold temperatures, winter storms and competition for limited food resources. Prevailing winter weather and sea conditions would likely make any attempt at either oil spill containment or oil spill impractical. In addition, any oil which reached the nearshore area would persist longest in those low wave-energy areas where otters congregate to seek shelter from rough seas. Even if otters were able to escape oiling they would quite possibly be excluded from oil-fouled feeding areas and thus be susceptible to starvation.

... The remoteness of the northern coast from those areas where oil containment equipment and personnel are likely to be located makes response time an especially critical factor, particularly if the origin of the spill is close to shore...

Sea states typically exceed those considered practical for containment operations or the use of dispersants, and storms and coastal fog are common occurrences during many months. Because of the rugged nature of the northern coast with its many reefs, rocks, islands, headlands and kelp beds, it would be necessary to contain any spills well offshore to protect the complex and fragile nearshore ecosystem.

**Protective Status:** Because Washington sea otters are still in a precarious status due to their small population size and restricted range, the State of Washington classifies them as an "endangered species." They are also afforded federal protection by the Marine Mammal Protection Act but are not listed as "endangered" or "threatened" under the Federal Endangered Species Act. The latter is a legal artifact due to the original transplants coming from Alaskan stock (not listed) rather than from the "threatened" California stock.

Sea otter habitat is also afforded some protection in Washington. Land areas within the present otter range fall under jurisdictions of the U.S. Department of Interior (Olympic National Park and Flattery Rocks and Quillayute Needles National Wildlife Refuge) and tribal governments (Makah, Quileute, and Hoh). Marine waters out to three miles are considered Washington State territorial seas. The coastal waters, from Cape Flattery to Point Grenville, including all areas surrounding the offshore islands of the wildlife refuge system, have been listed as a potential site for a national marine sanctuary. However, the aforementioned proposed oil and gas lease activities could still jeopardize the majority if not the entire coastal habitat and the Washington sea otter population.

“...the flow of time, obliterating yet containing all that has
gone before — the sea’s eternal rhythms, the tides, the beat
of the surf, the pressing rivers of currents...the stream of
life flowing as inexorably as any ocean current from past to
unknown future...”
Rachel Carson

MEMORIAL GIFTS

In memory of Robert T. Ball
from Jo Nix

In memory of Bettye Bray
from Raymond and Helen Magnus

In memory of John Rudolph Erbe
from Jerry Amsul
Max and Mildred Davis
Allan and Theresse Grossman
Mervyn Heaton
Sol H. Marshall
Herman and Kae Saunders

In memory of John Frey
from Mrs. David Freeman

In memory of Katherine Francis Girardin
from Mary Vallery
Sally Girardin Corn

In memory of Cara Knott
from Kenneth M. Elk

In memory of Elizabeth G. Lamson
from William E. Lamson and her children

In memory of Ming and Jason
from Dick and Sue Harlan

In memory of Patrick J. Mitchell
from Virginia and Fred Peters

In memory of Muffin
from Amber Sholdes

In memory of Edie W. Mustard
from Jennifer and Jon Barton
Kristyn Meredith
Charles Mitchell
Kathryn Mustard

In memory of Jennifer Kay Prouty
from Liz Berry
Steven Berry
Bliss Silvers Hughes Associates

In memory of Jack R. Wagner
from Jo Nix

In memory of John Woolfenden
from Carol Fulton

"In Honor Of ..."
In honor of Nancy Johnston, a Springfield, New Jersey
member who inspired us to create it to honor "special people
and their special events," we have gratefully established this
special category of donations:

In honor of Miss Tamara Bozof
from Mr. and Mrs. Larry Perlberg

In honor of Cecil and Doris Lichtman
from Jeff and Nancy Johnston

In honor of Jules and Shirley Lichtman
from Nancy Johnston

In honor of Susan Lund
from Vicki Naushultz

In honor of Mary Sweetser
from Mr. and Mrs. Theodore D. Raphael

In honor of Mr. and Mrs. Michel Willey
from Mrs. George H. Christ

FSO’s Advisory Committee

Wildlife biologist Dr. William Francis, a valued member of
Friends of the Sea Otter's Advisory Committee since 1977, has
retired to Harrisonburg, Virginia. He writes, “as a Life Member I
will be proud to continue to be part of the effort to protect what is
perhaps the most endearing and interesting of the mammals that
brighten our environment.” We will miss this staunch Friend.

Joining our Advisory Committee, and replacing Bill as Treasur-
er, is Scott Hennessy, whose photographs have appeared
many times in the Raft. A marine biologist by training at Moss
Landing Marine Laboratories, and a co-founder of the Monterey
Baking Company, Scott also serves on the Board of the Mountain
Lion Preservation Foundation. We look forward to benefiting from
his unique combination of biology and business.

Chemistry Classes Contribute

Gerald Wilson’s senior chemistry classes at Bassett High
School in La Puente, California have been indulging in a bit of
alchemy! Over the last three years their rising donations have
totaled $15, $131.33 and, in 1988, $196.73. The otters appreci-
ate their magical ability to transmute good grades into otter gains!

Very Special Friends

Whatever would we do without Special Friends like Mr. and
Mrs. Richard Dillon, Mrs. Eugene C. Pulliam, and Rita and
Juanita Woods? Their sustaining donations to the otters make
our work possible.

A Treasured Trust

We were so grateful to receive a letter this past August from
attorney Robert P. Horen, stating, “I am sure that Ms. Jewell
would be happy with the progress which your organization is making,”
and conveying to us another generous distribution from the F.
Waido Jewell Trust.

We are saddened to learn of the death of
Lt. Col. Dr. F. P. Gaekwad,
the Maharaja of Baroda,
on September 1, 1988 in Bombay, India.

As the President of the World Wildlife Fund for India, he was
instrumental in making the Asian Otter Symposium possible.
As an indefatigable international traveler, he was an ardent
supporter of nature’s creatures throughout the world.

THE OTTER RAFT — WINTER, 1988/1989
Sign Up Now for Sea Otter Classes

We are delighted to report that "Mr. Sea Otter," Judson Vandevere, will be giving two fact-packed classes on our furry friends through the University of California's Extension Program at the Monterey Bay Aquarium. The January 14th class, "The California Gray Whale and the California Sea Otter," includes a boat trip on the 15th or 21st. Fee $106. The April 8-9 session, "The Sea Otter," will feature excellent shore-side viewing along the Monterey Peninsula and at Point Lobos. Fee $78. Space is very limited for the at-sea sessions so sign up early. Phone Maureen Fodale at UC Extension in Santa Cruz (408/429-2761) or write her at University Extension, Carriage House, Santa Cruz, CA 95064. The otters await you!

Viva Volunteers!

Two of our dedicated volunteers were honored for very special contributions at this year's Annual Meeting. Our irreplaceable and irrepressible Wini Adams received the first annual Wini Adams Volunteer Award for the countless hard-working hours she has cheerfully devoted to the otters for the past ten years. A special award went to Jeanne Irwin, whose gifted hands and warm heart have created exquisite sea otter craft work to enrich the Sea Otter Center and the otter's cause.

Can You Spare Some Time?

We have a few 3-hour weekly shifts available now in our Sea Otter Center—the perfect place to share your enthusiasm for the otters with friends and neighbors, visitors from across the country and around the world, while selling gift items to support our work on the otters' behalf. If you have a free morning or afternoon in your weekly schedule, why not make the most of it? Contact Jo Nix at the Sea Otter Center, 625-3290.

Thank You Apple!

Thanks to the generosity of Apple Computer, Friends of the Sea Otter is the very fortunate recipient of an Apple Macintosh SE computer, complete with built-in 20-megabyte hard disk, ImageWriter LQ printer and modem, as well as software programs donated by Claris and Microsoft Companies. The equipment was part of an Apple Community Affairs grant given to each member of CoastNet, an environmental action network working to protect the California coast. Other organizations include the Northcoast Environmental Center (Arcata), Mendocino Environmental Center (Ukiah), California Ocean Sanctuary Federation (Mendocino), Earth Island Institute (San Francisco), Central Coast Conservation Center (Half Moon Bay), Environmental Defense Center (Santa Barbara), Santa Monica Mountains Restoration Trust (Malibu), Surfrider Foundation (Huntington Beach), and the American Oceans Campaign (Santa Monica).

The Macintosh computer has already proved to be an invaluable tool and great cost-saver in our educational and organizational efforts (for example, this issue of The Otter Raft was done on the Macintosh), as well as helping us to communicate more quickly and efficiently with others in the conservation movement. We are also now members of EcoNet, the global environmental computer network, and can be reached through electronic mail, via EcoNet at "sweetseaotr." Thank you, Apple. Thank you, thank you, thank you!

THE OTTER'S TROVE

For those who cannot visit our Sea Otter Center, we offer in each Raft some of our more popular items by direct mail.

T-SHIRTS & FLEECWEAR

Created exclusively for Friends of the Sea Otter, we know you will be pleased with this delightful new eight-color design.

ADULT - White or Royal Blue heavy weight 100% cotton short-sleeve T-shirts and 50/50 blend crew-neck sweatshirts.
S (34-36), M (38-40), L (42-44), XL (46).
Adult T-Shirt, $14.00; Adult Sweatshirt, $22.00

YOUTH - White or Royal Blue short-sleeve 50/50 blend T-shirts and crew-neck sweatshirts. XS (2-4), S (6-8), M (10-12), L (14-16).
Youth T-Shirt, $10.00; Youth Sweatshirt, $18.00
State 1st & 2nd color choice.

PRINT
Handsome 14"x19" sepia-tone print on fine quality paper by artist William Ryan. Print, $30.00

NOTE CARDS
Boxed mini notes by Virginia Miller. In boxes of ten, these handy 3-1/2"x5" note cards and envelopes are available in two charming designs. Mother & Pup, $4.50, or Single Otter, $4.50. State choice.

SOLID PEWTER GIFTS
Magnets, plain or painted, $4.50. State choice.
Key Rings, plain or painted, $5.00. State choice.
Collector's Spoon, plain design only. Gift boxed, $6.00
Thimble, plain design only. Gift boxed, $5.00

Send for our free catalog of gift items.

PLEASE ADD SHIPPING AND HANDLING CHARGES:
Merchandise ordered:
$20.01 to $30.00 .......... $4.00
Up to $10.00 ................ $2.00
$10.01 to $20.00 ........... $3.00
$31.01 and over ........... $6.00

CALIFORNIA RESIDENTS: PLEASE ADD 6% SALES TAX TO ALL PRICES.

TO ORDER, SEND CHECK OR MONEY ORDER TO:
THE OTTER'S TROVE - FRIENDS OF THE SEA OTTER
P.O. BOX 221220 - CARMEL, CA 93922
Visa or Mastercard accepted for minimum orders of $20.00. Include card number and expiration date.
THE SILVER CIRCLE

We associate the widening circles from an otter’s dive with the growing accomplishments of our work and its growing needs. Many of our Life Members continue to make substantial contributions, thus helping the circles continue to expand. The names listed below are those who have added still another silver circle to the otter’s dive:

Wiril Adams - Salinas, CA
Joyce Axton - Thousand Oaks, CA
Annie Barrows - Carmel, CA
Dorothy W. Bell - Pentwater, MI
Phyllis Boris - Reseda, CA
Larry & Janet Brown - Morgan Hill, CA
Nobert Curry - Novato, CA
Mrs. & Mrs. Richard J. Dillon - Brown Deer, WI
Diana L. Edinger - Plano, TX
Dr. & Mrs. William J. Francis - Harrisonburg, VA
The Richard Grand Foundation - Tucson, AZ
Jack A. Graves - Turlock, CA
Mrs. Larry A. Hart - Pebble Beach, CA
Ruth B. Heller - Kentfield, CA
Mark F. Hopkins - San Jose, CA
Kathleen Huettrner - Rancho Santa Fe, CA
Jeanne Irwin - Upland, CA
Mrs. Robert Kemp - San Marino, CA
Geoffrey W. La Domus - San Francisco, CA
Mr. & Mrs. William Marchiando - Santa Barbara, CA
Ms. Kathleen Mason - San Francisco, CA
Mrs. Clifford McAleenan - Branford, CT
Peter C. McLees - Fullerton, CA
Nat & Page Owings - Santa Fe, NM
Dorothy E. Pedersen - Dudley, MA
Mrs. Eugene C. Pulliam, Paradise Valley, AZ
Merriam Sargent - Corwin Springs, MT
Mrs. Walrout L. Singer - Novato, CA
Mr. & Mrs. Richard J. Stoddard - Newport Beach, CA
Sulzberger Foundation, Inc. - New York, NY
Mary Sweetser - Carmel, CA
Louis van de Velde - Wickford, RI
Mrs. Philip S. Weld - Gloucester, MA
Jean Wilder - Monterey, CA
Mrs. Henry C. Woods, Jr. - Skillman, NJ
Juanita S. Woods - Columbus, OH
Rita L. Woods - Columbus, OH

NEW LIFE MEMBERS

We welcome Life Member contributions of $100 or more.

Kirsten Anderson & Joan Drury - San Francisco, CA
Elizabeth A. Armstrong - San Diego, CA
Valerie Breen - Pacific Grove, CA
Virginia V. Callahan - Peapack, NJ
W.R. & Mary Chapman - Livemore, CA
Jean Conner - San Francisco, CA
Paul & Lanore Dennis - Santa Monica, CA
Dr. & Mrs. Richard Doe - Carmel, CA
John Dzadus - Chicago, IL
George & Kelly Ellison - Oakland, CA
Escondido Hills Animal Hospital - Escondido, CA
Viki Fernsia - Greenwood, SC
Margie J. Fielder - Venice, CA
Mr. & Mrs. Dino Franceschini - Sacramento, CA
Margaret H. Frischkorn - Metamora, MI
Kelly Gast - Stillwell, KS
Frederick J. Graboske - Rockville, MD
Mr. & Mrs. David Gray - Shell Beach, CA
Linda Groshong - Salinas, CA
Bonnie Harrell - Montana, CA
Dorothy & James Hollisend - Sacramento, CA
Ms. Jane Hutchison - Santa Clara, CA
William H. Johnston - Studio City, CA
Susan E. Kaar - Concord, CA
Linda S. Keener - Phoenix, AZ
Melanie Kesler - Ann Arbor, MI
Pam & Mark Krol - Concord, CA
Mrs. Julie Lainchbury - Lakehoud, OK
Mary M. Lane - Monterey, CA
Mr. & Mrs. Richard La Rue - Carmel Valley, CA
Dorothy M. Leszko - East Windsor, CT
Jeanne Anne MacDonald - Parkridge, IL
Sara Maloney - Sussex, England
Mr. & Mrs. William Marchiando - Santa Barbara, CA
Daniel & Karen McHugh - Grand Terrace, CA
Dorothy Medick - San Francisco, CA
Tricia L. Miller - Mt. Bliss, TX
Mink Jun - Pebble Beach, CA
Monterey Bay Kayaks - Monterey, CA
Pat Moody - Memphis, TN
Michael Neyer - Belle Mead, NJ
Nancy Patitz - Studio City, CA
Dr. & Mrs. John Pavel - San Jose, CA
Barbara A. & William J. Phillips - Whittier, CA
R.A. & G.J. Puckett - Salinas, CA
Robin T. Reid - Burke, VA
Mary Angela Roberts - Los Altos, CA
Clay & Candace D. Roni - Canoga Park, CA
Lynn Rudy - Spokane, WA
Amy Shapiro - Oakland, CA
Jeanine A. Scheper-Platt - Marina del Rey, CA
Martha Simonetti - Harrisburg, PA
Stuart L. Somach - Sacramento, CA
Judy Stover - Altadena, CA
Susan Swenson - Marina del Rey, CA
Eric A. Timurd - Ellington, CT
Carole West - Bridgewater, NJ
Wesley L. Worthington - Inglewood, CA
Richard & Marilyn Wulliger - Pacific Palisades, CA
Mr. & Mrs. Sheldon A. Zabel - Chicago, IL

NEW PATRON MEMBERS

We deeply appreciate Patron gifts of $50 or more.

John & Betty Aikenhead - Granada Hills, CA
Natasha Atkins - Arlington, VA
John W. Aucinhloss - Washington, DC
Glen & Daureen Aulenbach - Vienna, VA
Bonnie Beker - San Luis Obispo, CA
Lois Barry-King - Fairfax, CA
Mrs. Arthur Benning - Pebble Beach, CA
Mrs. Marilyn B. Berger - Santa Monica, CA
Larry & Diane Bjornson - Provo, UT
Kathy Braune - Fremont, CA
Marion T. Brungart - Monterey, CA
William L. Burkett & Family - Redondo Beach, CA
R.G. Burns - Long Beach, CA
Susan L. Calender - San Francisco, CA
Peggy Carpenter - McAllen, TX
Connie Chenu - Sacramento, CA
Mr. & Mrs. Richard Christoph & Family - Rancho Mirage, CA
Mike & Linda Clark - Healdsburg, CA
Lee S. Cole - Novato, CA
Marsha & Jimmy Copeland - Orange, CA
Faye S. Dawes - Northfield, VT
Franci De Long - Salt Lake City, UT
Fred K. Dinger - Placentia, CA
Dianne James-Dixon & Jack Dixon - Sunnyvale, CA
Lynda S. Emmel - Woodbine, NJ
Marilyn J. Fales - Corona del Mar, CA
Mrs. Eugene Farny - Cincinnati, OH
Rick & Wendy Feldman - Elk Grove, CA
Kathryne Glass - San Anselmo, CA
John R. Glasscock - Aiken, SC
Joan & David Goss - Costa Mesa, CA
Roy & Carol Greenway - Alexandria, VA
Bill & Peggy Gussman - Rancho Palos Verdes, CA
Katherine J. Hamilton - Long Beach, CA
L.R. Hawkins - seaside, CA
Haynes & Oakley Architects - South Pasadena, CA
Mr. & Mrs. Burr Heneman - Bolinas CA
Barbara A. Herr - San Francisco, CA
Nancy F. Hill - South Gate, CA
Mr. & Mrs. L.W. Hundsdorffer - Laguna Niguel, CA
Dr. & Mrs. James Issacs - Encino, CA
Tucker Jackson - Herron, VA
James G. Jett, Jr. - Greenwich, MD
Cheryl Johnson - South Gate, CA
Mr. & Mrs. Douglas A. Johnson - League City, TX
Floyd & Sue Johnson - Carmel, CA
Harriet & Bruce Johnston - Stanford, CA
Joann & David Kent - Los Angeles, CA
Mr. Leon L. Kind - Las Vegas, NV
Kenneth Koch - Modesto, CA
Joan E. Lane - Vienna, VA
Katalin Langianese - Van Nuys, CA
Suzanna S. Lasker - Los Angeles, CA
Kathleen E. Lazuroz - Houston, TX
Lauren Lenhart - Los Gatos, CA
Mel & Diane Leydecker - Tujunga, CA
Mrs. Linda Lipsky - Haverford, PA
Linda Logsdon, M.D. - Franklin, MI
Kevin & Linda Lynch - Cambridge, MA
Mr. & Mrs. Anthony H. Mirra - Springfield, VA
Starr Mohle - Des Plaines, IL
Martha S. Mosher - Carmel, CA
Jane R. Olsen - Lyne, CT
Naomi V. Ownby - Santa Ana, CA
Frank J. Pajerski - San Jose, CA
Michelle Parkinson - Anaheim, CA
Patricia Paul - Yardley, PA
Frances M. Perlin - West Paris, ME
Linda Racine - El Granada, CA
Lola P. Ransom - Chula Vista, CA
Mrs. Burnell Richmond - San Jose, CA
Mr. & Mrs. Edward A. Roberts - Rochester, MI
Fern Roberts - Phoenix, AZ
Mrs. Susan Robinson - Toluc Lake, CA
Cindy A. Rodgers & Peter A. Wilson - Laguna Niguel, CA
Terri Rodriguez - Camarillo, CA
Tamra Schnitman - Sherman Oaks, CA
Thea Severn & Scott Goss - Seattle, WA
Susan E. Shapiro & Gary M. Allums - Walnut Creek, CA
Francel Shaw - Stanford, CA
Sandra Gold-Singleton & Donald Singleton - Houston, TX
Roger F. Smith - Bloomfield Hills, MI
Marnie Snow - Santa Clara, CA
Michelle & Charles Staedler - Aptos, CA
Mr. & Mrs. Joseph Sterling - Carmel Valley, CA
Mr. & Mrs. J. Sweltzer - Orinda, CA
Patricia Swenson - Los Angeles, CA
Dorcas & Myra Taylor - San Jose, CA
Lisa Tekmarovic - Chicago, IL
Alfred Tennyson - Arcadia, CA
Anne Tewksbury - Monterey, CA
Jean C. Theisen - Pebble Beach, CA
Ellen Theiss - Santa Barbara, CA
Mr. & Mrs. Ripley Thompson - McCrory, AR
Stanley L. Thompson & Penelope J. Boston - Boulder, CO
Anita K. Trenner & Nancy J. Tyler - Denver, CO
Marvis & Tom Tucker - La Verne, CA
Greg & Maria Turek - Naperville, IL
Barbara Urban & Linda Snyder - Littleton, CO
Mr. & Mrs. Alan Weisenberg - Dobbs Ferry, NY
Harvey Welch - Portland, OR
Mr. & Mrs. Michael Williams - Santa Fe, NM
Sherman Worth - Riverside, CA
California Legislature
Resolution

By the Honorable Henry J. Mello, 17th Senatorial District
de the Honorable Ken Maddy, 14th Senatorial District
the Honorable Sam Farr, 28th Assembly District
the Honorable Eric Seastrand, 29th Assembly District
relating to commending the Sea Otter.

WHEREAS, the sea otter has become a valued symbol of the Central California coast; delightful residents and drawing visitors from across the state and nation and around the world; and
WHEREAS, the State of California protects the southern sea otter as a "Fully Protected Mammal," and the California Legislature has enacted a number of laws to further their protection; and...
WHEREAS, working with the California Legislature, the California Department of Fish and Game, the commercial fishing industry, and other environmental organizations, friends of the Sea Otter was instrumental in securing restrictions on setting entangling fishing nets throughout the shallow waters of the otter range; and
WHEREAS, primarily as a result of those net restrictions, the California sea otter population has begun to show the first signs of growth in well over a decade; and...
WHEREAS, for 20 years, Friends of the Sea Otter has guarded against actions detrimental to the otters' welfare by working diligently to protect the central coast from offshore oil drilling, toxic dumping, and other assaults on the nearshore marine ecosystem; now, therefore, be it
RESOLVED BY THE JOINT RULES COMMITTEE OF THE SENATE AND THE ASSEMBLY, That the Members, on the occasion of the 50th anniversary of the public rediscovery of the California sea otter, declare the importance of the existence of California's sea otters and acknowledge the need for continued vigilance and protective actions to ensure their survival; and be it further
RESOLVED, That the Members congratulate Friends of the Sea Otter as it celebrates its 20th anniversary, and commend its work to protect the California sea otter population and its marine environment.

August 12, 1988

Monterey County Board of Supervisors
Resolution

WHEREAS, since 1938, when a small group of otters was observed rafting in the kelp beds below Monterey County's Bixby Creek Bridge on the Big Sur Coast, Monterey County has been recognized as one of the few fortunate spots on earth to harbor rare and precious species, and...
WHEREAS, the Sea Otter's state and federal protections also benefit Monterey County's residents, environment, tourism industry, and fisheries — as in the U.S. Army Corps of Engineers 1980 denial of the proposed expansion of the Moss Landing Tanker Terminal in Monterey Bay...
NOW, THEREFORE, BE IT RESOLVED that the Monterey County Board of Supervisors values the presence of the sea otters along the Monterey County coast and supports on-going and future efforts to secure their survival.
BE IT FURTHER RESOLVED that the Board extends its congratulations to the Friends of the Sea Otter on their 20th Anniversary and wishes them success as they continue their work to protect the California sea otter and the Monterey County coast.

October 11, 1988

FRIENDS OF THE SEA OTTER

OFFICERS:
MARGARET OWINGS — President
DR. ROBERT ORR — Vice President
SCOTT HENNESSY — Treasurer

STAFF:
COOL FULTON — Executive Director, Editor THE OTTER RAFT
RACHEL SAUNDERS — Staff Biologist
JO NIX — Sea Otter Center Director/Volunteer Coordinator
JULIA WENNER — Membership Secretary

ATTORNEY:
STUART L. SOMACH — McDonough, Holland & Allen, Sacramento, CA

ADVISORY COMMITTEE:
Alan Baldridge — Librarian, Hopkins Marine Station, Stanford University, Pacific Grove
* William Bryan — Lawyer, diver, photographer, Salinas
* Mildred Buchsbaum — Zoologist, ecologist, Pacific Grove
* Dr. Ralph Buchsbaum — Invertebrate Ecologist, Pacific Grove
Bobbie Harms — Conservationist, Carmel
Scott Hennessy — Conservationist, Marine Biologist, Monterey
* Dr. Emmet T. Hooper — Zoologist, Santa Cruz
Dr. George Lindsay — Director Emeritus Calif. Academy Sciences, San Francisco
James Mattison Jr., M.D. — Surgeon, underwater photographer, Salinas
Charles Mehler — Underwater parks, Monterey
Dr. Kenneth Norris — Professor Natural History, U.C. Santa Cruz
* Dr. Robert Orr — Natl. Assoc. Director Calif. Academy Sciences, San Francisco
* Margaret Owings — Conservationist, Big Sur
Dr. John Pearse — Professor of Biology, U.C. Santa Cruz
Dr. John Phillips — Biochemist, Hawaii
Nathaniel Pryor Reed — Conservationist, Florida
Ferdinand S. Ruth — Marine Biologist, Pebble Beach
Dr. Victor B. Scheffer — Zoologist, author, Washington
Judson Vandeveere — Sea otter researcher and naturalist, Monterey
Dr. Edward L. Walker — Psychologist, Pebble Beach
Dr. Thomas Williams — Veterinarian, Monterey

*Executive Committee Members

SEA OTTER CENTER
In "The Crossroads" Shopping Center, Rio Road at Highway One, at the mouth of Carmel Valley.
P.O. Box 221220, Carmel, CA 93922
(408) 625-3290 Open Daily 10 to 3, Sunday 12 to 3

<table>
<thead>
<tr>
<th>Membership Type</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Membership</td>
<td>$15.00</td>
</tr>
<tr>
<td>Sponsor</td>
<td>$20.00</td>
</tr>
<tr>
<td>Donor</td>
<td>$30.00</td>
</tr>
<tr>
<td>Patron</td>
<td>$50.00</td>
</tr>
<tr>
<td>Life Membership</td>
<td>$100.00</td>
</tr>
<tr>
<td>Student/Senior</td>
<td>$10.00</td>
</tr>
<tr>
<td>Sustaining support</td>
<td>$____</td>
</tr>
</tbody>
</table>

(Tax Deductible)

Checks may be made payable and mailed to:
"FRIENDS OF THE SEA OTTER"
P.O. Box 221220, Carmel, California 93922

NAME__________________________
ADDRESS_______________________
TELEPHONE_____________________

(Foreign Membership Minimum $15.00 U.S. Funds)

$_________ enclosed

THE OTTER RAFT — WINTER, 1988/1989 15
"Discovery at Bixby"

To commemorate the 50th Anniversary of the California sea otter's "miraculous rediscovery" below the Bixby Creek Bridge on the Big Sur coast, Friends of the Sea Otter sought out wildlife artist Lynn Rathbun. Her delightful black and white depiction, shown here in miniature, has been printed on quality 20" x 26" paper (image size 14" x 18") and is available from Friends of the Sea Otter for $20 at the Sea Otter Center or $25 by mail (including sales tax, postage and packaging). Thanks to the generosity of Color Ad Printers of Monterey which donated the printing and paper, all proceeds from the sale of this captivating commemorative print will benefit FSO's Educational Fund.