Stakes High For Sea Otter in Fight Over Endangered Species Act

Michael J. Bean

This April, Congress began the periodic process of reevaluating — and reauthorizing — the Endangered Species Act. Unlike such efforts in the past, however, this year’s effort will be a highly contentious affair. A host of advocates of weakening the Act have surfaced, and many of their proposals would be especially harmful for the California sea otter.

Rallying together under names like the “Endangered Species Act Reform Coalition” and “Endangered Species Roundtable,” a familiar array of agricultural, fishing, mining, ranching, timber, and development interests, long antagonistic to the Endangered Species Act, are pressing for changes that would cripple it. Such former Reagan Administration officials as Attorney General Edwin Meese, Fish and Wildlife Service Director Frank Dunkle, and Office of Personnel Management Director Donald Devine supplement these efforts with their own ideological attacks against endangered species protection. There is even a group called the “Abundant Wildlife Society of North America” whose recommendations for the Endangered Species Act would produce anything but abundant wildlife.

One of the common themes from these groups and individuals is that the Act tries to protect too much when it extends protection to subspecies and distinct geographic populations. Instead, they argue, only full species should be protected. That would make the California sea otter ineligible for continued protection, not to mention the Florida panther, Key deer, Louisiana black bear, and numerous other currently protected animals.

Another objective of the Act’s critics is to limit measures to conserve protected species to those with benefits that exceed their costs. Utah Congressman Jim Hansen has introduced a bill (H.R.3092), “The Human Protection Act,” that would impose such a requirement. Under Hansen’s bill, it is doubtful that fishing restrictions could have been imposed to prevent the drowning of sea otters in nets. It’s even doubtful under such a standard whether the pesticide DDT could have been banned to make possible the recovery of the bald eagle, peregrine falcon, brown pelican, and other species.

Fortunately, not all in Congress are intent on hamstringing the Endangered Species Act. Massachusetts Congressman Gerry Studds, chairman of the House subcommittee responsible for the Act, has introduced a bill (H.R. 4045) that would strengthen the Act, increase funding for it, and extend its life another five years. Among other things, it would improve the ability of citizens to bring suits to enforce the Act, provide for more effective recovery planning, and encourage attention to the large number of candidate species awaiting eventual listing. It would also double the authorized expenditures to implement the Act over a five-year period. At present, the U.S. Fish and Wildlife Service has less money to implement the Act than the Agriculture Department Beef Promotion and Research Board has to spend on advertising promoting the consumption of beef. Seventy House members are co-sponsoring H.R. 4045. Please write your Representative in Congress and ask him or her to become a co-sponsor.

Michael Bean is a lawyer who has served for many years as chairman of the Wildlife Program of the Environmental Defense Fund. He is a principal strategist in legislative efforts to strengthen legal protection for endangered species, other wildlife, and wildlife habitats.
Monterey Bay National Marine Sanctuary Approved by President Bush

June 20 was a great day for the central California coast. On that day, the Final Environmental Impact Statement/Management Plan (FEIS/MP) for the Monterey Bay National Marine Sanctuary was released. In it was confirmation that the largest proposed boundary had been accepted, along with a permanent ban on oil and gas drilling within the Sanctuary boundaries. These were hard-fought concessions, and all who worked to see them enacted can take a few moments to congratulate themselves. However, though the FEIS/MP offers an excellent framework for guiding conservation of Sanctuary resources, there are still significant problems.

An Action Alert, calling for written comment by July 20, was co-sponsored by the Center for Marine Conservation, Save Our Shores, Friends of the Sea Otter, Defenders of Wildlife, Sierra Club, Surfrider Foundation, and the League of Women Voters. It was sent to local members of each of the sponsoring organizations.

On behalf of all of our members, FSO submitted written comment during the 30-day window of opportunity for reaction to the FEIS/MP.

The FEIS/MP contains 8 regulations including:
1. A prohibition of offshore oil and gas drilling.
2. The regulation of new dumping into the Sanctuary.
3. The regulation of discharges from outside the refuge that could enter or harm Sanctuary waters.
4. A ban on drilling through or altering the seabed of the Sanctuary.
5. A prohibition on the use of "personal craft," including jet skis, except in four specific confined areas near harbors.

A separate Memorandum of Agreement (MOA) between NOAA and the State of California details the role each would play in determining water quality standards and monitoring within State waters. It was hoped that NOAA would have a significant part in oversight, but the MOA clearly gives NOAA a subservient role.

In our comments, FSO focused on the following issues:
1. A 70 square nautical mile area offshore San Mateo County has been exempted from the Sanctuary. This has been done to allow raw sewage from the City of San Francisco to "overflow" into the Pacific Ocean during storms, when the sewer system receives more volume than it can handle. This leaves a "donut" of unprotected waters within the Sanctuary. We commented specifically on this exemption, asking that increased, regular monitoring take place, preferably with oversight by NOAA.

2. Reflective of the problem stated in item 1 above, NOAA has been given a very weak role in the review of permits for sewage and storm drain discharges throughout Sanctuary waters. We commented on the lack of a significant role for NOAA in the issuing of discharge permits. We asked that NOAA be designated as the oversight agency in review of all monitoring, and of all current discharge and dumping permits.

3. Sanctuary regulations will only be as good as their enforcement. Currently, only one enforcement person is assigned to monitor and enforce Sanctuary regulations within the entire Sanctuary (over 4000 square miles). To protect natural resources, more help is needed. The Monterey area, where the threatened sea otter lives with a host of other marine birds and mammals, will need extra enforcement personnel. As it stands now, jet skis will be allowed to launch from the Monterey harbor, potentially endangering not just the large number of sea otters living within the jet ski use area, but also marine birds, SCUBA divers, surfers, and beachgoers. Extra enforcement personnel must be permanently assigned to both land and sea monitoring of this area. The fragile sea otter population simply cannot brook violations by jet skiers, or any other ocean user.

4. FUNDING: In order to ensure the MBNMS has the funding necessary to carry out its mandate of resource protection, education, and research, the Administration and Congress must support a funding level of at least $1 million for the first year. Only half that amount has been allotted. Our representatives must support adequate funding!

-GREAT CENSUS NEWS!!!

The Spring 1992 sea otter census finally took the population over the 2000 mark! There was a bonus crop of pups – with good survival of these bouncing balls of fluff, perhaps the fall census will continue this good-news pattern. Keep all fingers (and toes) crossed!

SPRING CENSUS RESULTS, 1988-1992

<table>
<thead>
<tr>
<th>Year</th>
<th>Independents</th>
<th>Pups</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>1505</td>
<td>219</td>
<td>1724</td>
</tr>
<tr>
<td>1989</td>
<td>1574</td>
<td>290</td>
<td>1864</td>
</tr>
<tr>
<td>1990</td>
<td>1464</td>
<td>214</td>
<td>1678</td>
</tr>
<tr>
<td>1991</td>
<td>1700</td>
<td>241</td>
<td>1941</td>
</tr>
<tr>
<td>1992</td>
<td>1810</td>
<td>291</td>
<td>2101</td>
</tr>
</tbody>
</table>

From Spring 1991 there was a 6.47% increase in independents, a 20.75% increase in pups, and a total population increase of 8.24%.
How Can We Make the Endangered Species Act Really Work?

One of the tenets of the Endangered Species Act (ESA) is that not just rare or threatened species are protected, but even threatened small populations of plants and animals that are geographically separated from larger, more robust groupings of their kind. California sea otters currently are protected under the ESA because their small population is so far removed from the large and viable Alaskan population. Because the California population numbers so few animals, and occupies such a limited coastal range, they are liable to extinction through single catastrophic events (such as an oil spill the size of the 1989 Alaskan Exxon Valdez spill).

The ESA is due for reauthorization, as it is every five years. This year, Congress will decide if the ESA is preserved and strengthened with H.R.4045, or undermined by opposing House bills 4058, 3092, 2463, and 5105. If any of the latter four bills are approved, the California sea otter faces the very real risk of losing its protection under the ESA.

We must demand now that our Congressional representatives support H.R. 4045 with all their strength. They can best do this by agreeing to co-sponsor H.R. 4045. Please write or call your Congressmen, and ask them to sign on as co-sponsors, and ask them also to:

- Move to finish listing the backlog of 3000 species awaiting protection. The listing process falters due to underfunding, and species drop to extinction.
- Protect endangered habitat. The ESA originally allowed for this, but the Reagan/Bush administrations have often acted to not list species so that habitat can be left open for development.
- Create effective recovery plans for species and ecosystem renewal. The ESA demands that recovery plans be developed and implemented, but does not yet establish deadlines for such.
- Support proposals to increase federal funding for ESA programs. The National Wildlife Federation suggests increasing funding from the current $55 million a year to $100 million a year by 1997. They also suggest that revolving loans be made available for development if proper endangered species habitat protection is researched, established, and maintained.

- The National Wildlife Federation and other conservation organizations want to see the loopholes closed.
- Citizens must now wait 60 days after seeing harm to an endangered or threatened species before they can file a lawsuit. Support a move to drop the waiting period.
- Your letter or call means so much. Use the address below to register your response. Do not let your silence act as witness to future extinctions of the species and habitats upon which we all depend.

WRITE TO YOUR REPRESENTATIVE TODAY!

Summer Hotspots

Do not look to just the Endangered Species Act for hot action this summer. Also on the board:

1. The Marine Mammal Protection Act is up for reauthorization in 1993. Already there is talk about changing the ABT (Allowable Biological Take) on sea otters. As the MMPA stands now, accidental (or incidental) take of sea otters during fishing operations is not illegal as long as the fishing gear and practices are legal. That may change.

2. The U.S. Fish and Wildlife Service Southern Sea Otter Recovery Plan is due out soon. It will tell us where the USFWS will place its research emphasis (and money) over the next several years. We are watchful.

Offshore Oil Tracts Removed From Leasing

On May 1, 1992, the Bush administration announced that 87 tracts of offshore seabed originally slated for possible oil and gas leasing had been removed from consideration for at least five years.

The tracts, encompassing nearly half a million acres off Santa Barbara and Ventura counties, had been left vulnerable by an earlier Bush decision. In 1990, Bush had declared all tracts offshore California, except these 87, off-limits to leasing until the year 2000.

Governor Pete Wilson and Representatives Robert Lagomarsino and Tom Campbell pressed the administration to include protection for the entire coast, feeling that the waters and shore of Santa Barbara and Ventura counties should be afforded the same protection as the rest of the state. Campbell is optimistic that the area will now be protected, even beyond the established five-year timeframe.
Sea Otter Population Surveys: Why and How
Ronald J. Jameson, Research Biologist
United States Fish and Wildlife Service

Wildlife biologists spend considerable time assessing the distribution and abundance of wildlife populations. Learning how animals are distributed (when and where they occur) is relatively easy, but determining abundance (how many) is another matter. How biologists assess abundance is often related to how they plan to use the information. For example, if the population is to be manipulated in some manner, a total population estimate may be necessary. Unfortunately, precise population estimates are difficult. Because an accurate total count of any population is nearly impossible, estimates invariably involve a fudge factor that is applied to a sample from the population.

Early estimates of the California sea otter population involved counting the population over its entire range from aircraft. Scattered throughout the survey area were ground truth stations from which skilled or sometimes not so skilled observers counted sea otters in small coastal segments. Ground counts were made when the aircraft flew over. By comparing the air/ground ratio, biologists derived a fudge factor for areas where otters were counted from only the air. Ground counts were called truth because ground counters generally see more otters (the true number) than do counters in the aircraft. A 1988 study revealed the overall probability of shorebased observers sighting sea otters is about 95%. If the ground observer saw 100 otters and the observers in the aircraft simultaneously saw 75 in the same area, the observed proportion is .75, the fudge factor. The ratio is assumed to be the same everywhere, and the figure is then applied to a much larger area. If 250 otters were seen from the air, that number is divided by .75 and the estimate is 333. If the factor had been .5, the estimate would be 500, and so on. These examples are very simple and actual fudge factor calculations may be more complicated, but are usually variations of the same theme.

More often than not, estimating the total population size is not necessary. Frequently, the salient question is not how many total individuals are in a given population, but what is the trend: is the population increasing, decreasing, or stable?

Early surveys of the California sea otter population were fraught with error because of the imprecise nature of aerial survey data. Several studies revealed highly variable data that make detection of population trends difficult. Biologists, therefore, seek to minimize variation in survey methods. This is particularly important when the population is endangered or threatened. An imprecise method may not detect important trends in a population in time to make necessary decisions for changing the trend, and for small populations, time is often not available.

The 1979 estimate (the air/ground truth method was still in use) indicated the sea otter population in California had declined from = 1800 to = 1500 individuals (excluding pups) in the three years since the last survey in 1976. Was this decline real or an artifact of the survey method? Because the flights were flown under less than ideal conditions (high wind), many thought that the decline was not real, but variation caused by poor conditions. After the 1979 survey, my colleagues and I contemplated developing another method. Because they were imprecise, aerial survey areas would be kept to a minimum and completed under, at a minimum, good conditions.

Because ground counts had been considered truth in the past and most of the sea otter range in California could be viewed with relative ease from land-based stations, as much of the population as feasible could be counted from land. Therefore, in spring of 1982, when Jim Bodkin and I were conducting a range-wide survey for tagged sea otters, we also recorded the location and number of all observed sea otters. However, a timely range-wide survey on the ground would have required more people.

This first step in developing the current survey technique was important because we became convinced that we could successfully count this population, with the help of others, from ground-based stations throughout most of the sea otter range in California. During the following summer, we began to organize the prototype survey for the fall of 1982. We solicited the help of the California Department of Fish and Game and other sea otter experts in the state.

The following is a summary of current methods. Segments of coastline are assigned to teams of observers. Team members are usually familiar with their assigned area, but occasionally, when short handed, I ask a team to count outside its usual area. Each team comprises a principal and secondary observer. The principal observer is usually the most experienced and responsible for counts of groups and scans offshore areas with a high-powered (50X) telescope. The principal observer also records data and decides whether conditions are favorable for counting and when to end the count. The secondary observer helps by constantly scanning the area with binoculars for otters the principal observer may have missed. Observation sites overlap and are selected so the entire offshore area can be viewed. Surveys are generally made from about 8:30 to about 13:00 hours, when most sea otters are resting.

Photo by Gregory Silver

The Otter Raft, Summer 1992
Data are recorded on large scale maps (1:6000) showing the outline of local kelpbeds and prominent geographic features. Each record includes number of independent otters, number of pups (pups are categorized as large [woolly pelage absent] and small [woolly pelage present]), behavior (resting, feeding, other), associated kelp, and group size.

Coastal segments difficult to count from land or inaccessible are counted from aircraft at an altitude of 200-300 feet. The aerial survey team comprises three observers and the pilot. One team member also records data, and all team members are linked through a radio intercom system. Data are recorded on the same kind of maps used by ground counters, but records are simpler, usually consisting of only the number of independent otters, number of pups, and group size. Pups are difficult to discern from the air and, therefore, relatively few are seen during aerial surveys. Only about 20% of the total during any survey of the California sea otter population are counted from the air.

Field methods have changed very little since we began the surveys, but tabulation of data changed significantly. Until a few years ago, the results were tabulated and totals calculated by hand. This was time consuming and subject to errors. Now data are entered directly from field maps into a computer data base. This is done by overlaying maps onto a calibrated digitizing pad and using computer software that recognizes each map and automatically calculates the location of each observation. Once entered, the results are automatically summed by the computer.

In most years, we complete two surveys, one in the spring and one in the fall. Two counts render two independent data sets each year to track population trends and allow calculation of a minimum number of pups produced each year. The calculation is simple: sum the numbers of pups counted during spring (both small and large) to the number of small pups counted the following fall. Because sea otter pups usually have shed their wooly coat by three months of age, it is unlikely that any small pups counted in the spring would be recounted as small pups the following fall. The count is conservative, but still provides a valuable index of yearly pup production.

Since we began our surveys in 1982, the population has increased, based on spring counts, about 47%, or by an average annual rate of about 5.3%. Growth has not been constant since 1982 (see above graph). The population seems to have remained stable during 1982-1985. The increase began between 1985 and 1986 and has continued to date at about 8% per year. If counts from the range-wide surveys in 1976 and 1979 are included, there may have been a decline during the late seventies and the early eighties. The decline has been attributed to the increased use of nearshore set-nets in the sea otter range. The California Department of Fish and Game estimated 80 sea otters were killed in set nets annually. This was more than adequate to account for the stabilization or decline in the population during the period. California lawmakers passed legislation in 1983 restricting the use of set-nets to water deeper than that commonly used by sea otters for foraging. The population did not respond immediately, but by 1986 it was again growing. We hope this trend continues.

Ron Jameson is a research biologist with the United States Fish and Wildlife Service. He began his research in 1970 on the translocated sea otter population in Oregon. Since then, he has accumulated over 20 years of knowledge on the behavior, population biology, and ecology of sea otters, and is a recognized expert in the

---

**Annual Meeting Date Set – Make Plans to Attend Now!**

Our annual meeting will be held this year on Saturday, October 24, 1992 at the Monterey Bay Aquarium, at 7:00 p.m.

We will offer our sea otter viewing boat cruise at 3:00 p.m., October 25th, with Chris’ Fishing Fleet. If the weather is anything like it was last year, we can count on a wonderful cruise experience! We look forward to seeing you there!
California’s Other “Sea Otters”

J. Scott Shannon
Department of Biological Sciences, Humboldt State University, Arcata, California

Many people are not aware that there are actually two species of otters inhabiting California’s coast. Along rocky shores north from Point Reyes, it is not uncommon to find North American otters (Lutra canadensis) leading a sea-going lifestyle. For almost a decade, I have been conducting an observational study of a marine population of these so-called “river otters” at Trinidad Bay, on the far-northern seacoast of California. In the last nine years, I have recorded more hours of direct observations of wild North American river otters than any previous researcher, and witnessed first-hand many heretofore hidden aspects of otter behavior.

The focus of my research has been to chronicle the behavioral development of wild North American river otter pups. Since 1983, I have followed the lives of four mothers and their 11 litters, comprising 33 pups. It was my particular goal to follow the two females born in 1986 through their entire behavioral development and into their own parenthood. That goal was attained last year, when the second of those sisters gave birth to her first pups at the age of five. I have also studied the very interesting social behavior of these marine coastal otters – a society that, at least superficially, bears an intriguing resemblance to that of the sea otter.

At this point, you may be wondering what “river otters” are doing in the ocean. The simple answer is that they are fishing there, just as they do in any other aquatic habitat. The source of confusion lies in the misleading “river” appellation. This unfortunate misnomer implies that otters are primarily river dwellers, or that they prefer freshwater habitats. Quite the opposite appears to be the case, if population density is any measure of habitat preference. Generally, the North American otter is found at its lowest densities in riverine habitats, and at its highest densities in wetland and marine habitats. For example, at a river just a few miles north of Trinidad Bay, the density of otters was estimated at one for every 8.7 km. of river. At Trinidad Bay, though, there have been as many as 15 otters occupying less than one km. of marine coastline.

The social behavior of wild L. canadensis has been little studied, chiefly because otters are usually nocturnal creatures that avoid people. The otters of Trinidad Bay, however, have never been objects of exploitation or deliberate harassment. As a result, they are habituated to the presence of people, and can be observed during daylight hours at relatively close distances.

Because of the otters’ visibility and proximity, I have learned to recognize individuals by their unique physical characteristics, so have not needed to tag them. Recognizing individuals is the key to understanding any animals’ social behavior, and my ability to identify these otters reliably is what makes my long-term study of otter behavior the first of its kind.

There are two aspects of sea otter society that invite comparison to the social system of the Trinidad Bay otters. Among sea otters, males tend to be quite gregarious, often forming large rafts, and females and pups are usually not found in association with the males. Male gregariousness and sexual segregation are well-established hallmarks of the social organization of sea otters.

At Trinidad Bay, adult male otters are also very gregarious – so much so that the males constitute a seasonally-stable, cohabiting social group that I call “The Clan” (see photo). For anyone familiar with the current scientific literature on L. canadensis, the existence of a stable social group of five to eight adult males should come as a genuine surprise. Almost all references on this species refer to adult male otters as “solitary and territorial.” The Clan males are definitely neither solitary nor territorial. They are, in fact, conspicuously gregarious and communal. During my entire study, there has never been an adult female member of the Clan; all of the adult females are members of the extended Family group.

This leads to a discussion of the most remarkable behavior pattern displayed by Trinidad Bay otters: the extreme degree to which adults of the opposite sex avoid non-sexual social interaction. The strength of the sexual segregation exhibited by the Trinidad Bay otters far exceeds the strength of the phenomenon among sea otters. As of March 31, 1992, it had been 1,417 sessions (Sept. ’86) since an adult male and an adult female were seen foraging together, and 1,085 sessions (June’88) since adults of the opposite sex were seen to interact playfully!
otters tend to rest in groups, but not forage in groups. The Clan males not only share a common den, they also forage and travel together. Sexual segregation in sea otters is based on spatial and ecological factors (i.e., the sexes occupy different areas for different ecological reasons). At Trinidad Bay, adults of both sexes occupy the same area and practice mutual avoidance, establishing a social segregation of the sexes. Although unrelated female sea otters may share a common maternal area, Trinidad Bay adult river otter females defend a maternal territory from which unrelated females are totally excluded.

In a future article I will relate more about the fascinating matriarchal society of Trinidad Bay river otters.

J. Scott Shannon is a graduate student in biology at Humboldt State University, a past member of the Otter Specialist Group of the International Union for the Conservation of Nature (IUCN), and a life member of Friends of the Sea Otter.

---

**CHANGING THE GUARD**

**Welcome to the New President of FSO**

It has been my privilege to serve in a small way with FSO, from its beginning, as Advisory Committee Member, Vice President, and as President Pro-Tem until a new president could be elected. I intend to continue on as a member of the Board of Trustees now that Art Haseltine has assumed the presidency.

I have known Art for several years as a respected biologist working with the State of California Department of Fish and Game. I have known him, also, as an avid scuba diver and underwater photographer. He will add an informed and fresh outlook and area of expertise to the organization. We are happy to have him aboard, especially since his recent retirement from 22 years with Fish and Game allows him to devote more time to the organization. We are all looking forward to the continued work of FSO under Art’s leadership. Welcome aboard, Art.

- James A. Mattison Jr., M.D.

---

**A Message From The President**

I am honored to be elected as President of FSO for a two-year term. I look forward to working with the Board of Trustees and the staff in assuring that the Southern sea otter reestablishes its rightful position as a keystone species in the California nearshore ecosystem.

I would like to announce an important staff change at FSO. Our Scientific/Executive Director, Dr. Gregory Silber, regretfully resigned to accept the position of Assistant Scientific Program Director of the Marine Mammal Commission in Washington, D.C. We are sorry to lose Greg, but are proud he has this opportunity to advance his career. On behalf of the organization, and the sea otters, we offer our sincere thanks and best wishes.

FSO’s loss of Dr. Silber has led to a reorganization of staff and responsibilities. After an extensive search and interview process, the Board is pleased to announce that Dina Stansbury has been hired as the new Executive Director of FSO. As Director of the Monterey Peninsula Regional Park District (currently Board President), Dina regularly demonstrates a strong commitment to environmental protection. As past Director of Community Services for Planned Parenthood of Monterey County, Dina brings skills that make her well-qualified to run the administrative affairs of FSO. As part of FSO’s reorganization process, Dina and the Board of Trustees have quickly moved to hire a new Scientific Director and to fill other vacant staff positions. Please join me in welcoming Dina and the other new staff members to FSO.

-Arthur W. Haseltine

---

**Greetings From The Executive Director**

From the beginning, I had a good feeling about FSO. It started when Board V.P. Scott Hennessey told me about the history and accomplishments of the organization as we waited for my initial interview to begin. And subsequently, when meeting the entire board in a second interview that reaffirmed my feeling that I was among a group of people who believed in their cause. There was so much energy and enthusiasm in the room that I couldn’t help but hope that I would be offered the job.

I got lucky.
That luck continues.

Ellen Faurot-Daniels has come to work for FSO as our new Scientific-Education Director, June Craft is our Bookkeeper/Office Manager, and Julie Payne is our new Membership Director. Together with “veteran” Sarah Pearson, our staff is now complete, and it is truly a pleasure to come to work.

Our challenges are before us. Recertification of the Endangered Species Act and the Marine Mammal Protection Act, oil spill prevention and contingency planning, and management of the soon to be designated Monterey Bay National Marine Sanctuary are issues that will require our attention in the year ahead.

It feels good to be working with volunteers, a Board, staff and membership who share such a deep concern about Southern sea otters, and who are working so hard to secure their future.

-Dina Stansbury

*The Otter Raft, Summer 1992*
New Study Shows Sea Otters Do Not Eliminate Abalone

Recent research by the U.S. Fish and Wildlife Service and the University of California, Santa Cruz, shows that while abalone fisheries may not be compatible with resident sea otters, sea otters do not eliminate abalone populations.

In their study, S. Pollard and G.R. Van Blaricom quantified the relative effects of sea otter predation and recreational fisheries on red abalone populations in central and northern California. The abundance, size, distribution and microhabitat use of subtidal red abalone populations were measured both inside and outside of marine reserves within the sea otter range (Monterey County) and north of their range (Sonoma County). The abundance and mean size of abalone within the sea otter range was lower than in Sonoma. Most abalone were limited to crevices and were smaller than the minimum legal size for harvest. In Sonoma county, the abundance and mean size of abalone were significantly reduced outside the reserves compared to within reserves. At some sites abundances were comparable to those measured within the sea otter range.

It was concluded that recreational harvesting in Sonoma County is having a significant impact on red abalone population characteristics. Overharvesting may damage the fishery for abalone even in the absence of sea otters.

(See “Effects of Sea Otter Predation and Recreational Fisheries on Red Abalone Populations in Northern California,” Pollard, S., and Van Blaricom, G.R., U.S. Fish and Wildlife Service, and University of California, Santa Cruz, CA 95064)

Drift Nets Banned

In a positive development, the U.S. National Oceanic and Atmospheric Administration issued regulations banning drift-net use in the South Pacific in 1991 and elsewhere by July 1, 1992. The regulations ban the sale of any fish caught in drift-nets (used primarily by Japan, Taiwan, North Korea, South Korea and France) in the U.S.

In 1990 the U.S. National Marine Fisheries Service reported that 10% of Japan’s drift net fleet killed 1,758 whales and dolphins, 253,288 tuna, 81,956 blue sharks, 30,464 seabirds, and more than three million non-target fish. It is estimated that drift nets lose 111 miles of net each night. These nets drift untended and “ghost fish” until they are washed ashore or sink.

Japan met the January 1, 1992 deadline in Senate Bill 884 requiring them to notify the U.S. of their intent to “completely cease large scale driftnet fishing by persons or vessels of such country beyond the exclusive economic zone of such country.”


Gillnet License Permanently Revoked

On March 18, 1992, following the death of a sea otter in an illegal gillnet, Monterey Municipal Court Judge William Moreno permanently revoked a commercial fisherman’s license to use gillnets. We believe that this was the first time a gillnet license has been revoked for life. The sentence included 30 days in jail and a $2,500 fine.

In the past, penalties for illegal gillnet use have been fines, loss of nets and probation. None has proved effective in deterring illegal gillnetting.

FSO feels that the lifetime revocation of his gillnet license was an appropriate penalty for the fisherman who has been arrested many times over the past five years for gillnetting violations. We applaud the efforts of the people who are working so hard to enforce the laws that protect sea otters: Larry Silva of the United Anglers; Dan Laughlin, Skipper of the Department of Fish and Game’s patrol boat; Nancy Parker of the District Attorney’s office, and Judge Moreno.

FSO Conservationists Honored

The Commodore Sloot chapter of the National Society of the Daughters of the American Revolution recognized two long-time supporters of our organization for their outstanding work in conservation in January of this year.

Judson E. Van devere, former FSO staff biologist, member of our scientific advisory committee, and outstanding conservationist, teacher and president of the Monterey Chapter of the California Native Plant Society, was honored with the 1991 National Conservation Medal. Esta Lee Albright, FSO volunteer naturalist, volunteer at the Monterey Bay Aquarium sea otter pup rescue program and distinguished local conservationist, received the Chapter Citation.

These awards are presented annually to people with distinguished conservation records, who exhibit outstanding educational work, distinguished teaching, wildlife and nature center work and leadership in the area of conservation. We congratulate both of these individuals and express our appreciation for their continuing efforts on behalf of wildlife.
Margaret Owings Honored For Her Outstanding Contributions

Margaret Owings, President Emerita and founder of Friends of the Sea Otter, was honored by the California Department of Parks and Recreation and the Asilomar Operating Corporation for her dedication to environmental causes.


Mrs. Owings, one of California’s leading conservationists, was recognized for more than 30 years of work to save wild things. Starting in 1960, she fought to prevent the killing of California sea lions; then to prevent the killing of mountain otters. In 1968, recognizing that the sea otters needed a friend, she founded FSO to protect the Southern sea otter and its habitat. In 1963, after being appointed a State Park Commissioner, Margaret Owings was unrelenting in her battle to save old growth redwood forests in California.

On March 26, 1992, an appreciative gathering of over 100 people came together at Asilomar to honor and to thank Margaret Owings once again, for her vision, her ability to move people to action, her persistance and for her devotion to “saving things.” -SS

Marine Mammal Rescue Facility Plans Continue

Planning meetings continue for implementation of the California Oil Spill Prevention and Response Act of 1990 for construction of a marine mammal rescue center in the central California coast area. The rescue and rehabilitation stations is designated to treat sea birds, sea otters, and other marine mammals to achieve the best treatment possible for those animals affected by oil spills in marine waters. The act requires that the first of these stations be located in the sea otter range. Consultation for the project includes the U.S. Fish and Wildlife Service, the National Marine Fisheries Services, the California Coastal Commission, the Marine Mammal Center and International Bird Rescue Research Center. They are collaborating in the design, planning, construction, and operation of the stations. Friends of the Sea Otter served on the committee and monitored decisions on adequate facility space and ongoing research on sea otter population growth.

Meetings were held in December 1991 and again in February 1992 with a final plan being developed for submission very soon. It appears that a decision is all but final to locate the facility at the University of California Long Marine Lab in Santa Cruz. -EF-D

Monterey Bay Aquarium has published a new book under their Natural History Series, and if you have any interest at all in gray whales, you will want to buy it. The collective scientific wisdom and relaxed narrative style of authors David G. Gordon and Alan Baldridge are united in Gray Whales, a book modest in length but lavish on unusual revelations.

For instance, have you ever thought about the impact of the historic gray whale hunting in the lagoons of Baja California? We all knew or suspected that the whales were driven to near extinction for the sake of human gain. However, there was a group of humans that were severely negatively affected by the southern whaling – Siberian native whalers depended on the seasonal return of whales to northern waters, and starved when they did not.

Did you know that the spear tips of primitive gray whale hunters were tipped with aconite, a chemical derived from plants grown as specialty cut flowers today?

Did you know that gray whales, on both their southward and northward migrations, come round just into the southern end of Monterey Bay, and for some unknown reason, avoid the northern part of the bay?

Did you know that killer whales, when spotted in southern Monterey Bay, may be preying on gray whales (especially calves), often biting and taking only the gray whale tongues? Did you know that these predatory killer whales are considered transients to the established social groupings of killer whales up north, and that these killers specialize in taking marine mammals, rather than fish?

The authors interperse little-known facts like these with general reviews of whaling, migration, and feeding. The text can be easily approached by either the lay person or the scientist looking for an interesting review book. Adults can even lead children on a talking tour of the photographs, and engage speaker and listener alike in the mystery and marvel of these graceful gray behemoths. Teachers at all levels will want this book as an aid to marine science curriculum development. At $8.95, the Monterey Bay Aquarium has opened another very affordable window on our ocean world.

-EF-D

The Otter Raft, Summer 1992
Notes On Feeding Sea Otters From the Washington Coast

Brian B. Hatfield

As a staff biologist for the U.S. Fish and Wildlife Service, I have participated in annual surveys of the small Washington sea otter population during the last three years. I make my surveys from a small island named Tsawewahya, also known as Cannonball Island, near Cape Alava in the Olympic National Park. The area is beautiful and abounds with wildlife such as northern sea lions, gray whales, river otters, bald eagles, and tufted puffins. Between scheduled counts of sea otters, I make observations of the local birds and mammals, including sea otters.

At noon on October 2, 1991, during our joint survey with Washington Department of Wildlife biologists to document effects of the recent oil spill (see the Winter 1991-92 issue of The Otter Raft), I noticed a foraging sea otter carrying a very large white object. After focusing my spotting scope on the otter, a female, I was easily able to identify the object as a giant octopus, *Octopus dofleini*. The octopus was not alive and was already partially consumed. It nearly covered the sea otter’s entire chest and abdomen, and much of the huge invertebrate draped into the water. I estimated the octopus, including the mantle and tentacles, to be about 1 meter across. This one was relatively small considering this species can reach a length of three meters and weigh up to 100 pounds.

After four minutes of continual munching on the octopus (who knows how long she had been feeding on it before I spotted her), the otter began to swim slowly with an occasionally short dive toward a large raft of over 50 sea otters. For the next 21 minutes she continued to eat the octopus while swimming slowly, when she suddenly dropped her prey and began to groom. After a few seconds, she dove and retrieved the mollusc and again began to move towards the raft. She dropped the octopus to groom five more times, but each time dove to retrieve it. By this time, she was close to the edge of the raft and was obviously satiated. At 12:28 she entered the raft still carrying her giant meal, which drew the attention of several resting otters. The female dropped the octopus to groom, and immediately a mother with a large pup dove, retrieved the sinking octopus, and began swimming rapidly away from the raft. They were followed by three additional otters, including another pup. Sixteen minutes later, the mother and pup were still simultaneously swimming and munching on the octopus while trying to keep the pursuing otters from stealing their prize. By 12:44, the chasing otters managed to tear or bite off some fairly large pieces of the octopus. At 12:47, four otters were eating progressively shrinking pieces of giant octopus, and by 12:50 the last morsel was gone.

In a little under one hour, most of the large giant octopus was eaten, and at least six sea otters partook in the feast (other otters may have appropriated and consumed some of the octopus before I began my observations). An interesting question is whether the female deliberately brought the octopus to the raft to share it with other otters. Giant octopi are common food items for sea otters in Washington. Ron Jameson observed a large (approximately 1.5 meters across) live octopus being eaten by a sea otter at another location on the same day, and in a report by the Washington Department of Wildlife (1988), C. Bowby, B. Troutman, and J. Jeffries reported otters eating these octopi many times. Giant octopi are the largest food items that sea otters are known to eat, and large individuals are probably the only prey items that a single otter cannot entirely consume during a feeding bout. More observations of otters eating giant octopi must be made to address whether otters, once satiated, deliberately share their food with otters other than their own pups.

Brian Hatfield is a wildlife biologist with the U.S. Fish and Wildlife Service, Piedras Blancas Research Station, San Simeon, California. He has participated in research on sea otters for over ten years.

FSO Appeals Native Take Ruling

On July 17, 1991, the U.S. District Court ruled in favor of Alaska Natives taking sea otters for the purpose of making such handicrafts as "growling" teddy bears, luxury pillows, pussy willows and "puffs."

The July ruling is the latest in a case that was initiated in 1985 when the Fish and Wildlife Service confiscated these items from an Alaska Native because, "they were not considered to be traditional Native handicrafts of the type made prior to the passage of the Marine Mammal Protection Act."

From 1985 until July 1991, favorable decisions by both the Court and Fish and Wildlife Service in this case halted the taking of sea otters for non-traditional commercial use.

Last July the court reversed itself. It is now permissible for Alaska Natives to take sea otters to make and sell handicrafts of the sort listed above.

FSO, Greenpeace, Alaska Wildlife Alliance and the Humane Society of the U.S. have, once again, joined together to protect the sea otter. We appealed this decision. The U.S. Government, originally one of the defendants, decided not to appeal. In fact, the United States is challenging our standing to appeal. They claim that in appealing, FSO interferes with the government’s ability to interpret regulations in the Marine Mammal Protection Act. At present a date for the hearing has not yet been set. In the event the appeal is unsuccessful, a legislative remedy will remain as a final recourse.

(Portions of this article were taken from the appellants' Opening Brief to the U.S Court of Appeals 3/25/92.) -DS
Comfortably wrapped in thick brown kelp, the otter quietly floats on her back. Occasionally she rolls over and raises her head to scan the waters of the bay. Her hazy vision may note a small white boat resting at anchor in the distance, but it is not perceived as a threat. She proceeds with her after-lunch grooming, scratching her long white whiskers with her small front paws to wipe away the remnants of food just eaten. Suddenly, without warning, the water around her explodes into swirls of white foam, and at the same moment, a basket of netting closes around her. She instinctively rolls over and dives for deep water, thereby securing her capture in the collapsing net.

As she bites and claws at the increasing tangle, two divers surface and grasp the sides of the net, preventing any possibility of escape. One of the divers raises his hand to signal the waiting boat.

The divers, Fish and Game biologists working under a permit that allows the capture and tagging of otters, have taken the young otter completely by surprise. Their approach sent no strong vibrations through the water, no bubbles rising to the surface. Using special dive gear and a unique capture device, the biologists were able to thwart the otter's instinctive escape behavior.

Until a few years ago, conventional scuba equipment was used by Department biologists to capture otters. Otters often spotted the approach of diver bubbles, and were able to escape before capture. These many failed capture attempts led to the use by divers of oxygen rebreather units. Unlike conventional scuba gear, a rebreather emits no bubbles. It recycles the diver’s exhaled breath by filtering out carbon dioxide and replacing the depleted oxygen. The use of rebreathers in the sea otter capture program has raised the success rate from 25% to 90%.

The “Wilson trap” used to capture otters is composed of a funnel-shaped frame of round aluminum pipe that supports a basket of netting. A long, straight pole extends from the bottom of the trap. A propelling “scooter” is attached to the pole, allowing the divers to move the trap more easily through the water. One diver hangs onto the scooter to guide the trap, while the other diver swims alongside.

Once below the otter, the biologists wait for the moment when it is least suspicious — from where they wait below, the divers can clearly see the otter’s small body outlined against the sky above. They make last-minute adjustments, hoping the otter will not suddenly roll over and spot them. Then the divers quickly swim straight upward and envelop the animal in the net before it knows what is happening. A pursing string is pulled to close off the top of the net, and two balloons attached to the frame of the trap are inflated, keeping the otter from pulling the trap underwater. Divers and otter wait at the surface as the small white motor boat chugs through the kelp toward them. Within minutes, the otter is safely aboard the boat where other biologists are waiting.

Wearing heavy gloves, the marine biologists carefully disentangle the angry otter. Its weight and sex are recorded, and then they set about giving the animal an identity. One plastic tag is attached to each hind foot, using the webbing between toes for attachment. The position and color of each tag uniquely identify each otter.

Tagging is completed in about ten minutes, and the otter is returned to the water. It can now be recognized by researchers from shore or boat. Like the other 500 or so otters tagged by the Department of Fish and Game and the U.S. Fish and Wildlife Service, this otter will begin providing researchers with information on the small population of sea otters that have re-established themselves along the stretch of Central California coastline between Santa Cruz and Pismo Beach.

So, while this young otter may have preferred giving scuba divers with conventional equipment a good chase through the thick kelp, the use of oxygen rebreathers, funnel nets, and underwater propulsion scooters is making it easier for biologists to catch and monitor changes in the sea otter population, study food preferences, understand pup birth and dependency periods, and map individual territories and ranges. The biological, behavioral, and spatial information gathered from tagged otters is critical for determining their vulnerabilities, and how we can best protect them.

Mike Fitzsimmons is the State Fish and Game Warden for the Monterey Peninsula and the Big Sur coast, an area that encompasses most of the sea otter refuge. Several of his articles on a variety of fish and game topics have been published.
THE OTTERS’ TROVE
For those who cannot visit our Sea Otter Center, we offer in each Raft some of our more popular items by direct mail. Request our free brochure of gift items for more selections.

RAFT PARTY PRINT
The sea otters are having a “Raft Party” in this charming watercolor print by Roger Folk. The print comes double matted in a softly speckled white, edged with a touch of muted sea green. Matted size 21-1/2"x6-1/4". PR5, $21.00

CERAMIC CLOCK
A delightfully designed ceramic wall clock. Hand-painted in soft shades of green, brown, blue, purple and beige. 6"x9". Also available as a charming desk clock with an easel back stand. 4"x6-1/4". Both use one AA battery, not included.
Wall Clock, MS26, $37.00
Desk Clock, MS3, $30.00

SUNCATCHER
An otter, holding a pale pink shell, floats peacefully on a sea of blue in this beautifully designed leaded stained glass. Designed and made in Monterey, California. Comes with suction cup for attaching to window. 7-3/4"x5". SU4, $31.00

“THE WORLD OF THE SEA OTTER” VIDEO
A spellbinding video tape of the playful, cavoring sea otter as it dives, eats, sleeps, swims, grooms and takes care of its pup. A high quality production with minimal narration and more natural sounds of the animals themselves. 30 minutes, color. MS25, $29.95

FROM THE BOOKSHELF
ZOOBOOKS “SEA OTTERS” – Filled with photos, amazing facts, quizzes & fun for children. BK18, $3.50
A RAFT OF OTTERS – The most memorable collection of sea otter photographs to appear anywhere. BK7, $7.95
SEA OTTERS by Roy Nickerson – This large format book contains many color photographs. BK5, $12.95

ORDERING INFORMATION
To order, send check or money order to:
The Otter’s Trove • Friends of the Sea Otter
P.O. Box 221220 • Carmel, CA 93922

Packing & Shipping
Up to $15.00 ................. $3.00
$15.01 to $30.00 ............. 4.50
$30.01 to $40.00 ............. 5.75
$40.01 to $60.00 ............. 6.50
$60.01 to $75.00 ............. 7.00
$75.01 and over ............. 7.75
Air delivery ................. add $6.50
AK & HI orders ............. add $8.50

CALIFORNIA RESIDENTS:
PLEASE ADD 7-3/4% SALES TAX TO ALL PRICES.

FRIENDS OF THE SEA OTTER
PRESENTS:
“Unsinkable”
A Special Limited Edition Bronze by Monterey Peninsula Artist
JERRY WARNER

On display at the Sea Otter Center in the Crossroads, Carmel, CA.

Call today to reserve your very own “Unsinkable” otters.

Each signed and numbered otter bronze is cast and finished at the Jerry Warner foundry on the Monterey Peninsula, using the lost wax process. Only the finest materials are used to produce bronzes of superb quality. To simulate the ocean, green jade marble imported from Italy is used to make the bases. Sea otters at the Monterey Bay Aquarium were used as models for the bronzes.

A bronze will last forever. It is almost a perfect metal, because it will not deteriorate with the passage of time. In a thousand years, each of the otter bronzes will be just the same as it was the day it was finished—a lasting investment.

The Warner “Unsinkable” bronze sculpture will also be on display at several Monterey Peninsula branches of Coast Federal Bank. We gratefully acknowledge the cooperation of the management of Coast Federal in this project.

FSO Office Burglarized
On Wednesday, May 6, thieves broke into the FSO administrative office and absconded with about $2,000 worth of equipment and miscellaneous items. Unfortunately, they also took about 25 membership envelopes with checks that had not yet been deposited. If you sent in your renewal, or know of someone who may have sent in a new membership at about that time, please let us know, as we have no way of knowing whose memberships were stolen. We send confirmations to all new and renewing members. If you did not receive your membership confirmation or if your cancelled check is returned without a stamped FSO endorsement, please let us know at once. Thank you for your patience while we get back to our normal routine.
THE SILVER CIRCLE

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

Adkins Family - Concord, CA
Michael Albaugh - Milpitas, CA
James G. Anderson - San Jose, CA
Kirsten Anderson - San Francisco, CA
Paulianne Balch - San Jose, CA
Edward & Mary Barnes - Mt. Kisco, NY
Miss Anne Barrows - Carmel, CA
Mr. & Mrs. Edward C. Basket - Mill Valley, CA
Don Baur - Alexandria, VA
Mrs. Audra Mc Kim Bedell - Pebble Beach, CA
Steve & Bernice Bell - Pacific Palisades, CA
Dr. Georgette Bellucci - Pittsburgh, PA
Catherine E. Bengston - Big Sur, CA
Marlyn B. Berger - Santa Monica, CA
Joan E. Brennan - Half Moon Bay, CA
Mr. & Mrs. Atherton Bristol - Garwood, NJ
Thomas E. Brown - Seattle, WA
Beth Brust - San Diego, CA
Barbara Buckley - Berkeley, CA
Karen Connors - San Jose, CA
Dorella Callahan - Merced, CA
Sheila Campeau - Reno, NV
Cherie Child - Carmel, CA
Paul Christowski - Silver Springs, MD
Mary A. Coffeen - Morro Bay, CA
Edmund H. Conroy - Redondo Beach, CA
John Conroy - San Francisco, CA
Judy Cox - Ft. Worth, TX
Marcelyn Cremer - Alameda, CA
Stephen E. Crowell - Golden, CO
Robin & Jamie Das - Orinda, CA
Mrs. Marion P. De Groff - Baltimore, MD
Mr. & Mrs. Frank G. Dellino - Castro Valley, CA
Robert Denton M.D. - Livermore, CA
Richard & Susan Dillon - Brown Deer, WI
Elizabeth Drennen - Steamboat Springs, CO
Juanita Edwards - E. Sussex, UK
Mark Eisner Jr. - Annapolis, MD
Mrs. Amelia Elkinton - Carmel, CA
Karen Ellington - Maryville, TN
George E. Ellison - Oakland, CA
Mrs. J. Marshall Evans - Napa, CA
Leslie Ewy - Boulder, CO
Mr. & Mrs. Davis Factor Jr. - Carmel, CA
Dorothy J. S. Johnson - Santa Barbara, CA
Ruth Stone Feldman - Alamo, CA
Elaine H. Fielder - Talent, OR
Beatrice Fitzgerald - San Francisco, CA
Dr. John Douglas Forbes - Charlottesville, VA
Marlena Forst - Cypress, CA
Mr. & Mrs. Pedro Garcia - Sacramento, CA
Samuel & Barbara Frank - San Francisco, CA
Ray & Shirley Freschi - Pebble Beach, CA
Chris & Carol Gebel - Raleigh, NC
John T. Gernon M.D. - Evanston, IL
Stephen Gilbert - Santa Monica, CA
Nancy Glenn - Sausalito, CA
Miss Jessamine Goddard - Lambertville, NJ
Jeanine Goldberg - Los Angeles, CA
Dr. & Mrs. Richard Greaney - Bayside, CA
Marilyn & Sandy Greenblatt - San Rafael, CA
Dr. & Mrs. Anthony B. Greening - Long Beach, CA
Claire S. Greenwell - Torrance, CA
Marvin & Rhonda Gross - Las Vegas, NV
Mrs. Lincoln S. Harris - Saint Paul, MN
Lyman S. Hall - Aurora, CO
Carole Haskell - Pebble Beach, CA
Mr. & Mrs. Alfred Heller - Kentfield, CA
James & Dorothy Hollinseed - Sacramento, CA
David Howell - Fairfax, VA
Ray & Marion Hubbard - Kenwood, CA
Mrs. L. W. Hundsfoder - Laguna Niguel, CA
Dorothy B. Hunt - Pacific Grove, CA
Margaret D. Hutaff - Cambridge, MA
Henry Fowness Foundation - New York, NY
Mrs. L. W. Hubbard - Laguna Niguel, CA
M. Hutaff - Cambridge, MA
Jane Hutchison - Santa Clara, CA
John & Jeanne Irwin - San Diego, CA
Tom & Beth Isaacson - St. Louis Park, MN
Carl Izbicki - Studio City, CA
Geraldine R. Jackson - La Conner, WA
Bette A. James - San Diego, CA
Dianne Jenett - Palo Alto, CA
William Weber Johnson - San Diego, CA
Susan Kaar-Wall - Pleasant Hill, CA
Kelly Karasek - San Francisco, CA
Mrs. Bert Karst - San Rafael, CA
Linda Keener - Phoenix, AZ
Miss Olga Kennedy - Gualala, CA
Charlene Killoran - Knoxville, TN
Eric Kindahl - Ithaca, NY
Nancy J. Koppel - San Jose, CA
Hazel M. Koenkenlinna - Stevens Point, WI
Phyllis L. Krystal - Pebble Beach, CA
Hai Lahy - Clarkston, MI
Barbara C. Landt - San Francisco, CA
Richard & Doris Leonard - Berkeley, CA
Adele G. Levy - Long Beach, CA
Deborah Louis - Scottsdale, AZ
Richard & Mary Lowens - Pasadena, CA
Jerome & Helen Lustig - Burlingame, CA
Jeanne A. MacDonald - Parkridge, IL
Marcia T. MacKinnon - Sanibel, FL
Dr. Dixie L. Magee - Vancouver BC, Canada
Milene Marion - Woodland Hills, CA
Emily T. Mark - Palm Beach, FL
Ruth Martin - Ft. Worth, TX
Karen Mathes - Sonoma, CA
Dr. James A. Mattison Jr. - Salinas, CA
Tracy Maxwell - Ft. Lauderdale, FL
Breda Mc Cambridge - Toronto, Ontario, Canada
Frank M. McMorrow - Pasadena, CA
Brooks & Hope M Cormack - Chicago, IL
Jill & Peter McDonald - Sherman Oaks, CA
Thomas A. McDowell - Dublin, OH
Ruth M. McCee - Los Altos, CA
Robert McKechnie - Los Angeles, CA
Susan McNie - Long Beach, CA
Sandra S. Meacham - Saginaw, MI
Marcia Mieksyn - Hamtramck, MI
Mr. & Mrs. Clay L. Miller - Headlands, WA
Arthur & Harriet Mittelber - Pebble Beach, CA
Violet M Moffat - Redwood City, CA
Katharina Morgan - Washington, DC
John F. Mortland - Casa Grande, AZ
Karen Mower - Durham, NH
Nina Vilani Nelson - Lahaina, HI
Gail S. Norton - San Diego, CA
Nancy O. Nyberg - E. Aurora, NY
Jane Olsen - Princeton, NJ
Leslie Olvera - Reedley, CA
Tadd Ottman - Fremont, CA
Margaret Owings - Big Sur, CA
Nat & Page Owings - Santa Fe, NM
Anna G. Pai - Livingston, NJ
John & Vicki Pearse - Santa Cruz, CA
Bruce Penslar - Encino, CA
Mrs. David H. Piser - Studio City, CA
The Prestons - Cupertino, CA
Shirley M. Redding - Newport News, VA
Christine Reynolds - Pasadena, CA
George & Lynne Rice - Santa Clara, CA
Dorothy Rose - Fremont, CA
Mr. Charles L. Roskosz - Santa Cruz, CA
Alan Rushfeldt - Sherman Oaks, CA
Allan W. St. Jacques - Santa Ana, CA
Leonard & Meriam Sargent - Corwin Springs, MT
Susan Schell - Jupiter, FL
Richard Schiefelbein - Port Angeles, WA
Lawrence L. Schmelzer - Kensington, CA
Ted Schulte - San Francisco, CA
Luinda Schuerman - Charlotte, NC
Mrs. E. H. Scrippsa - La Jolla, CA
Jordan Selburn - Sunnyvale, CA
Sally J. Seger - Carmel, CA
Mrs. J. Walter Severinghaus - Lexington, MA
Mary Severson - San Francisco, CA
Mrs. Brewster Sewell - Kennesbuck, ME
Marilynn G. Seyler - Mansfield, OH
Shawn M. Shawhan - Seattle, WA
Shirley Sheffer - Warm Mineral Springs, FL
Justin G. Sholes Jr. - Santa Barbara, CA
Martha L. Simonetti - Harrisburg, PA
Mrs. Waltraut T. Singer - San Francisco, CA
Philip & Mary Slate - Irvine, CA
Barbara S. Smith - Chappaqua, NY
Sharon Souther - Bountiful, UT
Jane A. Spelai - Durham, NC
Miss Barbara L. Spaulding - Saddle River, NJ
Donna Sprinkle - Long Beach, CA
Helen M. Sprinkle - Long Beach, CA
Wallace Stagner - Los Altos, CA
Carole F. Stepp - Los Angeles, CA
Allan W. St. Jacques - Santa Ana, CA
Jay Sweet - San Francisco, CA
Mr. & Mrs. J. Switzer - Orinda, CA
Susan Swenson - Marina Del Rey, CA
Jack Tatham - Irvine, CA
Lisa Tekmetarovic - Chicago, IL
Helen Thomas - Falls Church, VA
Kathy A. Tonnesen - Lakewood, CO
Michael & Beverly Tulper - San Rafael, CA
Sylvia Valencia - Salinas, CA
Louis R. Van De Veide - Tucson, AZ
Dr. & Mrs. J. Hugh Visser - San Francisco, CA
Dorothy Wade - Van Nuys, CA
Jane L. O'Ban Walpole D.M.D. - Tigard, OR
Tanis Walters - P. Troyes Station, CA
Nancy E. Warner M.D. - Pasadena, CA
Hilda Wax - Phoenix, AZ
Dr. & Mrs. William B. Wenner - Volcano, HI
Carole West - Somerville, NJ
Susan J. Willey - Carmel, CA
Mrs. Edward P. Williams - Essex, CT
Peter J. Wilson - Scarsdale, NY
Robert J. Wilson - Tiburon, CA
Diane R. Winston - Tarzana, CA
Judith Winthrop - Campbell, CA
Mrs. Henry C. Woods Jr. - Skillman, NJ
Warren L. Worthington - Inglewood, CA
Yeates Family - Sacramento, CA
Jack & Louise Yeates - Wilmington, DE

All contributions received prior to May 31, 1992.
MEMORIAL GIFTS

"...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

In memory of Ann Berthon from Harriette Mason-Schofield

In memory of Dana Carrington from Margaret Owings

In memory of Richard D. Crumrine from Elizabeth A. Crumrine

In memory of Mildred Dillon from Ramona G. Crosby

In memory of Edward Gilpin from Lindsay Mohn

In memory of Dale Griffin from Dug Waggoner

In memory of Mrs. Benjamin Henry from Mrs. James J. Mulvey

In loving memory of Judi & Dizzy from John Verfaillie

In memory of Mrs. Elwin Mann from Carol Hodgson

In memory of Myrna Sandoz from Laurie Mass

In loving memory of Sassy from Charlotte R. Hollett

In memory of H. M. Schofield from Ann Berthon

In memory of Kathy Sweetman from Margaret Owings

In memory of Doris Wright from Margaret Owings

All contributions received prior to May 31, 1992.

NEW MEMBERS

Thank you to all of our supporters. In particular we wish to acknowledge our newest benefactors, life members, and patrons.

BENEFACTORS

Please join us in extending a warm welcome to our most recent benefactor, Arthur W. Haseltine.

LIFE MEMBERS

We deeply appreciate these new life members who chose to contribute a minimum of $125.

- Cary J. Amerman - West Hills, CA
- William J. Betts - Morton, WA
- California Highways - Beverly Hills, CA
- Mary K. Cooper - Jonesborough, IN
- Christine Crooks - Palo Alto, CA
- Kelly Donaldson - Maple Plain, MN
- Jill Epstein - Tapan, NY
- Gary Ferrarisi - Fort Worth, TX
- Arthur Forni - New York, NY
- Marilyn Gallaway - Palo Alto, CA
- Kathleen Gates - Monterey, CA
- Scott Hennessy - Pebble Beach, CA
- Mr. & Mrs. W. Robert Keen - Orangevale, CA
- Elizabeth Keeshan - Santa Fe, NM
- Donald & Lola Klein - Eikett City, MD
- Joan E. Lane - Vienna, VA
- Lewson Lee Lern - San Francisco, CA
- Ruth McCloud - Milwaukee, WI
- Gloria McCormick - Seal Rock, OR
- Mr. & Mrs. Richard L. Miller - Atlanta, GA
- Patricia Moyer - Fremont, CA
- Laura Nielsen - Newberry, FL
- Lance Parker - Reno, NV
- Edward & Florence Peckham - Pacific Grove, CA
- Dave & Olive Saunders - Carmel, CA
- Mickey & Arlene Sego - Brunswick, OH
- Amy Shapiro-Moffatt - Norwalk, CT
- Cynthia Tong - Daly City, CA
- Dr. & Mrs. Daniel Wilkes - Las Vegas, CA
- Chris Willingham - Houston, TX
- Nancy Wynne - Pittsburg, CA

PATRONS

We extend our gratitude to these new patron members who elected to join us with a $75 contribution.

- Daniel Anthony DeLeo - San Francisco, CA
- Mrs. Eugene Farny - Cincinnati, OH
- Isabelle Holland - New York, NY
- Andrew Mc Kie - Newbury Park, CA
- Tony Melchior - New York, NY
- Elizabeth Mulry - Anderson, IN
- Lyn Ann Rosen - Carmel, CA
- Ken Sullivan - Mundelein, IL
- Anne Symchych - Andover, MA
- Thomas Vogan - Garden Grove, CA
- Karen S. Wessell - Columbia, MD
- Mr. Lee Whitmer - Modesto, CA

Volunteers Recognized

On April 30th the board and staff of Friends of the Sea Otter honored the volunteers with a Volunteer Recognition Night. Everyone enjoyed an array of delicious desserts as well as the opportunity to get together just for fun! Special sea otter pins and certificates were awarded to the volunteers in appreciation for all the time and energy they so generously give to FSO.

Volunteers Make It All Happen

Thanks to our dedicated volunteers, the Sea Otter Center continues to be a gathering place for otter lovers. The volunteers keep the door open seven days a week, educating the public about the sea otter and selling sea otter merchandise, some of which is featured in the Trove. Every Saturday afternoon “Otter Spotter” volunteers serve as on-shore docents helping the public view otters through spotting telescopes set up along the recreation trail in Monterey. Other volunteers help with mailings, telephone calls, writing articles, clipping newspaper articles and special events. We welcome new volunteers: Michelle Lander, Jennifer Linder, Ana Orozco, Dorris Adamson, Beverly Bidwell, Traci Finatti, Amy Lantz, Sheila McMahon, Bobby Jackson, Alex Patterson, Amy Wilkins, And Alice Williams. To all volunteers we give a hearty THANK YOU.

Volunteers Needed

Please give Sarah a call at 408-625-3290 if you would like to become a volunteer for FSO. It can be an interesting and rewarding way to spend a few hours a week or month.
Special Thanks

A special thank you to Audrey Trim of Willow Creek, Montana, for creating and donating a bronze sea otter sculpture to the Sea Otter Center.

Many thanks to Lee Worthington for the use of his photos!

Our special thanks to Lee and Leora Worthington for representing FSO at environmental fairs and special events, including the annual event, Whale-of-a-Day, held at the Point Vicente Interpretive Center at Rancho Palos Verdes, California in March. This year, the Southern sea otter was designated as the honored guest of the event, with Lee and Leora focusing on the plight of this threatened species.

Thanks also to Kathy and Tom Nedball for representing FSO at the Earth Day event at California State University at Long Beach in April.

Our special appreciation to Friends of Wildlife for including information about FSO with their sea otter watches and to the Monterey Bay Aquarium for including FSO in their list of conservation organizations.

Thank you to Susan Schiavone for donating a desk to the Sea Otter Center and a bookcase to the office.

Our appreciation to Margaret Owings for donating jewelry for sale at the Sea Otter Center.

A special thanks to Board member John Steinbacher, whose generous donation helped defray the publication costs of several FSO projects.

Special appreciation goes to Ben Masselink and California Highways magazine for their article on sea otters. Thanks too to Sunset magazine for its April coverage of the sea otter and to Tuff Stuff, Jr. magazine for its coverage of Southern sea otters and other endangered species in the February issue.

Paula DiCarlo, with “Ottermobile” tour service, is sent our special appreciation for donating ten tickets to Año Nuevo State Park. These tickets were given in appreciation to our volunteers as door prizes at our Christmas celebration.

Thank you to Arthur and Linda Tuttle for their gift in honor of Mr. and Mrs. W. William Baumgardt.

Volunteer Lynda Williams’ generous gift is making the champagne reception for Jerry Warner possible. She is also helping to coordinate the event. A special thanks to Lynda for her generosity and time.

Thank you to sculptor Brian Arthur for his generous donation of three sculptures to sell at the center!

Many thanks to Victor Scheffer for his contribution of sea otter photographs. They are a valuable addition to our photo collection!

Special thanks to Susan Willey for her very generous donation!

A special thanks also to AKC Fund for extending their recent financial support!

Friends of Wildlife of Issaquah, Washington, sent along a financial donation that we very much appreciate!

And finally, we thank Adventures By The Sea of Monterey for keeping the public informed about marine mammal protection laws and for donating a portion of the proceeds from their first annual Monterey Skate Roll to FSO.

---

FRIENDS OF THE SEA OTTER

BOARD OF TRUSTEES:
MARGARET OWINGS — President Emerita
ARTHUR W. HASELTINE — President
SCOTT HENNESSY — Vice President/Treasurer
ANN WOODWARD — Secretary Pro Tem
ALAN BALDRIDGE
FRAN FARINA
CAROL HODGSON
LORA LEE MARTIN
DR. JAMES A. MATTISON, JR.
JOHN STEINBACHER
JOHN TIERNAN

STAFF:
DINA STANSBURY — Executive Director
ELLEN FAUROT-DANIELS — Scientific & Education Director
SARAH PEARSON — Director, Sea Otter Center & Volunteer Coordinator
JUNE CRAFT — Bookkeeper/Office Manager
JULIE PAYNE — Membership Director

ATTORNEYS:
STUART L. SOMACH — McDonough, Holland & Allen, Sacramento, CA
SANDRA DUNN — McDonough, Holland & Allen, Sacramento, CA

ADVISORY COMMITTEE:
William Bryan — Lawyer, diver, photographer, Salinas
Mildred Buchsbaum — Zoologist, ecologist, Pacific Grove
Dr. Ralph Buchsbaum — Invertebrate Ecologist, Pacific Grove
Captain Charles Domac — Master Mariner, Pacific Grove
Bobbie Harms —Conservationist, Carmel
Dr. George Lindsay — Director Emeritus California Academy of Sciences, San Francisco
Charles Mehlert — Underwater parks, Monterey
William Penn Mott, Jr. — Former Director of National Parks and California State Parks, Orinda
Dr. Kenneth Norris — Professor of Natural History, U.C. Santa Cruz
Dr. Robert Orr — Associate Director California Academy of Sciences (Retired), San Francisco
Dr. John Pearse — Professor of Biology, U.C. Santa Cruz
Dr. John Phillips — Bio-chemist, Hawaii
Nathaniel Pryor Reed — Conservationist, Florida
Ferdinand S. Ruth — Marine Biologist, Pebble Beach
Dr. Victor B. Scheffer — Zoologist, author, Washington
Judson Vandeveer —Sea otter researcher and naturalist, Monterey
Dr. Thomas Williams — Veterinarian, Monterey

---

SEA OTTER CENTER: "The Crossroads" Shopping Center, Rio Road at Highway One, at the mouth of Carmel Valley. Phone (408) 625-3290. Open daily 10 a.m. to 3 p.m., Sunday noon to 3 p.m.

ADMINISTRATIVE OFFICES: P.O. Box 221220, Carmel, CA 93922. Phone (408) 373-2747; FAX (408) 373-2749. Monday–Friday 9 a.m. to 5 p.m.

MOVING?: If you are a member and are moving, please let us know. Returned mail increases our costs and we don't want to lose contact. Please send your name, old address, new address, and effective date to the FSO office so we can stay in touch.

Make checks payable to:
FRIENDS OF THE SEA OTTER
P.O. Box 221220, Carmel, California 93922

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Membership</td>
<td>$20.00</td>
</tr>
<tr>
<td>Student/Senior</td>
<td>$15.00</td>
</tr>
<tr>
<td>Sponsor</td>
<td>$40.00</td>
</tr>
<tr>
<td>Patron</td>
<td>$75.00</td>
</tr>
<tr>
<td>Life Membership</td>
<td>$125.00</td>
</tr>
<tr>
<td>Benefactor</td>
<td>$500.00</td>
</tr>
<tr>
<td>Foreign (minimum in U.S. Funds)</td>
<td>$25.00</td>
</tr>
</tbody>
</table>

Check one:
- [ ] New
- [x] Renewal

$ _____ enclosed (Tax Deductible)

Make checks payable to:
FRIENDS OF THE SEA OTTER
P.O. Box 221220, Carmel, California 93922

NAME
ADDRESS
ZIP
PHONE

The Otter Raft, Summer 1992
"Anyone for lunch?"

This sea otter has been observed over the past several weeks relaxing in the marina at Monterey, using a sailboat cover for a tablecloth.