

# THE OTTER RAFT



Number 66

FRIENDS OF THE SEA OTTER

Spring/Summer 2002

A Science & Education Periodical Focusing on the Welfare of Sea Otters and Their Habitat

## Husbandry and Training of Sea Otters: What It Takes to Establish a Partnership for Research

*Jen Gafney, Senior Trainer, Long Marine Laboratory, University of California, Santa Cruz*

In recent years, the decline of the southern sea otter (*Enhydra lutris nereis*) population has been of concern to conservationists, biologists, and federal agencies. Numerous organizations collaborate in the otter recovery program, most notably the Monterey Bay Aquarium (Aquarium) for rehabilitation and reintroduction to the wild.

Unfortunately, there have been occasions when individual animals are deemed non-releasable, and permanent homes have been found for these animals. In several of these instances where animals have been deemed non-releasable, Long Marine Laboratory (LML), in conjunction with the Aquarium and the California Department of Fish and Game (CF&G), has been selected to temporarily house these animals and



*Morgan (left) and Wick are currently housed at the California Department of Fish and Game's Marine Wildlife Veterinary Care and Research Center at Long Marine Laboratory. Photo courtesy of Long Marine Laboratory.*

implement a husbandry and training program before they are transported to permanent facilities. Such a program allows caregivers to provide an outstanding quality of life for these animals while affording researchers the unique opportunity to gain valuable knowledge that can be applied towards the conservation of this threatened species.

Stranded and orphaned sea otter pups along California's central coast are placed in the Aquarium's Sea Otter Research and Conservation (SORAC)

Program. The goal of this program is to teach pups how to interact with the wild environment through mimicry of disguised human surrogate mothers, who show pups how to groom, dive, and forage in the kelp beds just offshore from the Aquarium while attempting to

limit the pups' association of humans with food and maternal care. When pups have demonstrated sufficient survival skills and a certain degree of independence, which usually takes several months, they are released and tracked by the SORAC staff to monitor their progress in terms of sufficient foraging to maintain adequate body weight, and in terms of social interactions with other animals and with humans in the bay. Cases have arisen where individual animals have not demonstrated adequate food acquisition skills upon release and

*Continued on page 6*

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# President's Report

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By Kim A. Beals, FSO President

*We, in our struggle to guard the California sea otter, move toward our goal like the wave, startled by the mortalities from shootings, saddened by otter drownings in gill and trammel nets set in less than 20 fathoms of water, resentful of oil spills and plastic perils. And then come the heavy storms that threaten death unless there is human intervention and rescue.*

*The door is ever flung open to receive the unexpected—tides ebb and flow, mixing fact with idealism, science with emotional response. Thus, our growing knowledge engenders growing concern.*

“A Meaningful Sound” from  
Margaret Wentworth Owings’ book,  
*Voice from the Sea*\*

Friends of the Sea Otter (FSO) is the legacy which Margaret Owings left behind to prove that a campaign to save the sea otters can be achieved through the persistence, determination, resourcefulness, and passionate conviction of a select group of people. People that bring to the table an expansive wealth of knowledge and information which has advanced the mission of FSO, “mixing fact with idealism, science with emotional response.”

As President of the Board of Trustees, I am elated to present our new Executive Director, Donald

Ingraham. Since his first day in February, Don has hit the ground running and has taken the reins. Don has added cohesiveness to FSO and continuously works with the board of trustees, staff, advisors, and attorneys. Most recently, Don has made headlines on both television and radio regarding the cruise ship industry’s impact on the bay. Don is rapidly becoming involved with other environmental groups and with our attorneys in Sacramento and Washington, D.C. to promote FSO’s mission.

Over time, FSO has grown into an organization that continues to support its own mission and also educates others on the necessity of maintaining our natural environment. FSO is forever grateful for the time and dedication we continuously receive from our supporters.

It has been over seven months since the tragedy of September 11, 2001, but the impact is forever engrained into our hearts and minds. The world has been changed forever. FSO asks that you take a moment to reflect how quickly the environment that we so cherish can be changed. It will take all of us to make this be a change for the positive. Your continued support of FSO’s mission and our efforts to protect the environment is deeply treasured.

\* *The complete text of “A Meaningful Sound” is reprinted on page 11.*

## **DON INGRAHAM**

### **Our New Executive Director**

Don Ingraham serves as the Executive Director of Friends of the Sea Otter. He joined us in February, and he is grateful for this opportunity to bring 20 years of professional fundraising experience to an organization which means so much to so many dedicated members and volunteers.

He has worked for museums, colleges, hospitals, and other nonprofits throughout the country, primarily as a director of development or as the director of capital and endowment campaigns. He has also worked as a teacher at several levels.

Don was born and raised on the Southern California coast, and he graduated from UC Santa Barbara in English and Film Studies. Don looks forward to hearing from our members regarding their special concerns and interests.

## Education Update 2002

By Tom Kieckhefer, FSO Education Director



Tom Kieckhefer,  
photo courtesy of  
Lee Worthington

I am delighted to report that the *Sea Otter In-School Program* continues to make a comeback in local classrooms. With the help of Josh Cassidy, our new Education Associate, we plan to conduct weekly programs for K-12 classes and other public groups. Each hour-long class describes the natural history, ecology, and current status of sea otters. Extracurricular materials for teachers are also provided to enrich student learning. In the future, we hope to increase the variety of programs we offer by collaborating with other like-minded conservation organizations.

We also have a new and improved *Sea Otter Pup: Activity and Coloring Book*, which is available through our classroom memberships and *In-School Programs*. The book includes wonderful illustrations of sea otters and descriptions of their natural history, population range, adaptations, and the environmental impacts these animals face living along the coast. Please contact us if you would like a free copy (additional copies are available through a classroom membership).

Since the last *Otter Raft*, we have participated in several events, including the Shark Festival & Sanctuary Celebration (hosted by the Monterey Bay National Marine Sanctuary), the Marine Mammal Conference in Vancouver, BC, and the Monterey Bay National Marine Sanctuary Currents Symposium 2002.

The next community event we will be attending is the Cement Ship Festival at Seacliff State Beach on Saturday, June 1, 2002. Please join us to celebrate the history of this unique 1930s-era coastal relic with children's games, dances, and guided walks. For more information call Seacliff State Beach at (831) 685-6444. We can always use help at our booth to interpret our displays and manage our kids' activities. Please give us a call if you are interested in helping.

We are also in the process of reviving the *Otter Spotter Program*. Thus far, we are conducting pilot studies every Thursday afternoon. We observe sea otter distribution, behavior, and potential disturbance along Cannery Row. If you are interested in helping to build the foundation for this long-term study, please call us. We hope to conduct weekday and weekend observations in the near future with the help of our trained volunteers.

Finally, we continue to receive many requests from all over the world for sea otter information and special class projects. We really enjoy hearing from students and people concerned with the plight of the sea otter, so please keep the letters coming.

### Friends of the Sea Otter Annual Meeting Weekend October 19–20, 2002

Friends of the Sea Otter will hold its Annual Meeting on the evening of Saturday, October 19th at the Monterey Bay Aquarium.



The evening will begin with a private otter feeding at the Aquarium. Saturday will offer opportunities to view otters in the Bay and other activities. We are planning boat trips on the Elkhorn Slough on Sunday, October 20th. Forty-four seats are now available.



Invitations will be coming soon. Please contact Ardean Wright at (831) 373-2747 if you have any questions. We look forward to an extra-special event this year—and to seeing many of our Friends !

Check our website for updates to the schedule: [www.seaotters.org/Events/](http://www.seaotters.org/Events/)

# Science Director's Report

By Matthew Rutishauser, FSO Science Director

## More than Our Guests: Research with Captive Sea Otters

Behind the scenes, and after aquariums close for the day, sea otters are vital in research that helps us understand and conserve the wild population. Unfortunately, not all sea otters can make it on their own. These otters become our much-loved guests and research partners, living in aquariums and zoos all over the country (Table 1). Otters arrive at the Monterey Bay Aquarium (Aquarium) and the Marine Mammal Center sick, injured, or abandoned. Dedicated staff and veterinarians make every effort to rehabilitate these animals, usually successfully, but not always. Some animals recover but can never again be released. These are the Haileys and the Roscoes, the Taylors and the Gracies, who live in our care. They help educate millions of people on otter biology, conservation, and marine issues. And they are also part of important research.

Two graduate students from the University of California, Santa Cruz are doing research with captive otters. Through work supported by FSO, Laura Yeates is looking at the causes of the slow recovery and recent population decline in southern sea otters. The slow recovery and recent decline may be the result of food limitation, in addition to disease, contaminants, or fisheries interaction. Ms. Yeates' work addresses the food limitation hypothesis by quantitatively examining the energy requirements of a sea otter.

Specifically, Ms. Yeates is studying the thermal physiology of sea otters, including how different behaviors and digestion affect their thermal budget. In addition, Ms. Yeates is examining energy use during dives by measuring oxygen consumption. Her work is with three captive otters—Faye, Morgan, and Wick—housed at the Department of Fish and Game's Oiled Wildlife Veterinary Care and Research Center, Santa Cruz, and at University of California's Long Marine Laboratory, Santa Cruz.

In another study, Mary Cashman is looking at the interplay between buoyancy and oxygen stores in the lungs of otters. Her work is with animals at the Aquarium. Sea otters possess large lungs in relation to their bodies. The large lung volume serves as an oxygen store while diving. However, diving with a large air-filled space can have a considerable cost because of the buoyant force of the trapped air, especially for a shallow-diving otter. Ms. Cashman's research addresses the energetic limitations experienced by diving sea otters.

The population of captive otters is still quite limited, making research difficult when many individuals are needed for a study. Such is the case for Dr. Mirav Ben-David and her work on the long-term and sub-lethal effects of ingested oil. Dr. Ben-David used river otters from Prince William Sound as a proxy for sea otters who would ingest small but non-lethal amounts of oil after a spill. Compared to control animals which were not exposed to oil, oiled otters were catching fish at a rate 64% lower than non-oiled animals. In addition, oiled animals had higher rates of oxygen consumption during exercise. Dr. Ben-David found that even small amounts of ingested oil cause low red blood-cell counts which in turn increase costs for exercise and reduce diving capacity. These results apply to sea otters because river otters are close siblings in an evolutionary sense.

A study conducted by Dr. Randall Davis and other researchers developed the best treatment methods for oiled otters including triage, removing the oil, and recovery time of an oiled sea otter. In addition, they examined the behavioral and physiological factors important to sea otters for regaining the insulative qualities of their pelts. Dr. Davis and others found that grooming was essential for the return of waterproofing to

**Table 1. Facilities around the United States that have captive sea otters**

Facility	Location
Aquarium of the Americas	New Orleans, LA
Aquarium of the Pacific	Long Beach, CA
New England Aquarium	Boston, MA
New York Aquarium	Brooklyn, NY
Ocean Journey	Denver, CO
Oregon Coast Aquarium	Newport, OR
Oregon Zoo	Portland, OR
Point Defiance Aquarium	Tacoma, WA
Sea World San Diego	San Diego, CA
Seattle Aquarium	Seattle, WA
Shedd Aquarium	Chicago, IL

otters' pelts after washing, and that one to two weeks is needed for recovery from oiling and washing. This work was based on another study with captive otters, by Drs. Daniel Costa and Jerry Kooyman, that examined the metabolic costs associated with oiling due to heat loss through oiled areas and washing. They found that heat loss after washing was two times above normal due to the loss of waterproofing oils, but after eight days temperatures returned to normal.

The research of Drs. Brian Hatfield and Jim Estes, of the U.S. Geological Survey, examined the effect of fish traps on captive sea otters. They exposed sea otters at the Aquarium to fish traps in an experimental setting. Without harming any of the otters, Drs. Hatfield and Estes observed that otters will readily enter fish traps. One of the ten otters used in the study became entrapped even with large openings for her escape. These studies directly influenced the conservation and protection of wild sea otters, and helped establish regulations for the live finfish trap fishery. The new regulations require rigid openings small enough to prevent otters from entering the traps.

In these studies and others, captive sea otters become important partners in our understanding of otter biology. In addition to expanding our understanding of how to care for otters on exhibit, captive sea otters provide us with information that we can use to help their wild cousins. Some information gained from captive otters would be impossible to obtain from wild animals, making the captive contribution doubly valued. Through studying captive otters, we can leave wild otters to the business of recovery without the disturbances caused by research.

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<sup>1</sup> Ben-David, M., T.M. Williams, and O.A. Ormseth. 2000. "Effects of oiling on exercise physiology and diving behavior of river otters: A captive study." *Canadian Journal of Zoology*, v. 78, pp 1380-1390.

<sup>2</sup> Davis, R.W., T.M. Williams, J.A. Thomas, R.A. Kastelein, and L.H. Cornell. 1988. "The effects of oil contamination and cleaning on sea otters (*Enhydra lutris*). II. Metabolism, thermoregulation, and behavior." *Canadian Journal of Zoology*, v. 66, pp 2782-2790.

<sup>3</sup> Costa, D.P. and G.L. Kooyman. 1982. "Oxygen consumption, thermoregulation, and the effect of fur oiling and washing on the sea otter, *Enhydra lutris*." *Canadian Journal of Zoology*, v. 60, pp 2761-2767.

<sup>4</sup> Hatfield, B., A. Johnson, J. Ames, and J. Estes. 2001. "An evaluation of the potential threats to sea otters posed by trap fisheries." 14th Biennial Conference on the Biology of Marine Mammals, Vancouver, Canada, Abstract p. 94.

## FRIENDS OF THE SEA OTTER REMEMBERS ROSCOE AND HAILEY



*Goldie, on left, who's still at the Aquarium, and Hailey. Photo by Randy Wilder, courtesy of the Monterey Bay Aquarium.*

FSO is saddened by the loss of Hailey and Roscoe from the Monterey Bay Aquarium. Hailey and her exhibit-mate, Goldie, are famous as

the first otters to be cared for as stranded pups.

Roscoe was the first otter to be raised for return to the wild and the first rehabilitated otter to receive a surgically implanted radio transmitter. Although Roscoe bonded too closely with his human caretakers and couldn't adjust to life in the wild, he taught SORAC staff much on how to raise and reintroduce stranded pups.

Hailey was a 17-year-old female, arriving as a stranded pup at the MBA in



*Roscoe. Photo by Ken Bach, courtesy of the Monterey Bay Aquarium.*

1984. Roscoe was a 15-year-old male, also arriving as a stranded pup in 1986. Both animals were at the end of a typical life span for male and female otters.

Hailey and Roscoe were both involved in research conducted by U.C. Santa Cruz researchers (see article in this *Raft*). Roscoe was euthanized during surgery to control internal bleeding. Hailey was euthanized in January after many months of declining health.

FSO will miss Hailey and Roscoe.

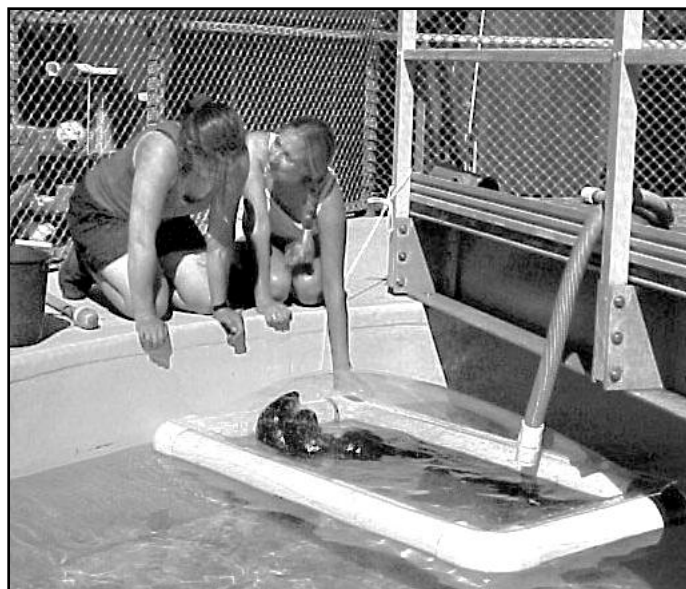
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*Husbandry and Training, continued from page 1*

have lost a significant percentage of their body weight in a short period of time. In other cases, individual animals have successfully made a living in the wild but have demonstrated aggressive behavior towards other animals or humans in the bay that could potentially result in harm to the otter. In these circumstances where the survival of the otter is in question, SORAC has taken into consideration the threatened status of the southern sea otter population and has recovered these otters from the wild and rendered them non-releasable. The Aquarium asked the staff at LML to provide care and training for four otters that could no longer live in the wild. Valuable research with these otters sheds light on their unusual physiological mechanisms.

LML is the University of California at Santa Cruz's off-site research station. Located on the coast just a few miles from the main campus, it has been home to several species of marine mammals, including California sea lions, Atlantic bottlenose dolphins, Pacific white-sided dolphins, northern elephant seals, and Pacific harbor seals. The LML staff had never cared for sea otters before Taylor, 5, and Gracie, 2, arrived in February 1998 at the CF&G's Marine Wildlife Veterinary Care and Research Center, located next door to LML. The staff's goal was to condition basic husbandry behaviors and to desensitize them to transport equipment in order to ensure minimal stress to the otters when they were eventually transported to their permanent home.

A consistent training and conditioning program was initiated. Positive reinforcement in the form of surf clams, prawns, cod, and squid were used as visual and verbal cues that elicited particular responses from the otters. For example, for the safety of the trainer, the staff determined that the otters should remain in the water when trainers entered the enclosure. However, otters sometimes had a tendency to jump on deck and wait by the door when they saw trainers approaching with buckets of food. To teach the otters to stay in the water, trainers would wait until the otters were already in the water, then sneak up and reward them with a handful of food. If an otter jumped up on deck when the trainer approached, the trainer would walk away for a few minutes, then come back and try again when the otter was back in the water. After a few repetitions, an otter on the deck would jump in the water when a trainer approached. The trainers were able to approximate



*Trainers from Long Marine Laboratory teaching Morgan how to sit under a metabolic dome for measurements of oxygen consumption. Photo courtesy of Long Marine Laboratory.*

opening the enclosure door while the otters remained in the water, and soon were able to enter the enclosure without the risk of an otter jumping on deck.

This type of conditioning reduced stress and helped eliminate the necessity for restraint or manipulation when shifting otters between pools at the CF&G and at LML. By the time Taylor and Gracie were transported to their permanent home in spring 1999, they had lived in ten different pools, and upon their release into their new exhibit they were calm, attentive, and focused on trainers almost immediately.

The success of LML's first otter-training program paved the way for a more complex training program involving two more otters who arrived at the CF&G in 2001. Wick, a two-year-old male, and Morgan, a six-year-old male, are slated to participate in voluntary physiology data collection under the advisement of Dr. Terrie Williams, an exercise physiologist and Professor of Biology at the University of California at Santa Cruz. Observations of wild otters provided a model for a typical dive pattern of a foraging otter. Wick and Morgan are trained to recreate this foraging scenario in a pool by performing repetitive dives to a target and surfacing in a metabolic dome that collects their exhalations after each dive. Targeting is an

*Continued on page 9*

## Sea Otter Spotted Near Todos Santos, Mexico

On December 29, 2001 at 7:15 a.m., Richard Brody of Berkeley, California spotted a sea otter in the surf at Playa Los Cerritos, Baja California Sur, Mexico. This beach is located 10 kilometers south of Todos Santos and 80 kilometers north of Cabo San Lucas. The otter was seen in the surf zone, and was followed from the beach by Brody for several minutes. Although otters are known to travel south into Baja from their current range, this sighting is well south of previous sightings.

Brody states, "I guess this is a testament to educating the public. Had Trevor (my classmate) not informed us of the otter's historic and present range, I would not have thought this a big deal, having seen otters many times in the surf at Santa Cruz."

This and previous sightings in Baja give us hope that sea otters will fully occupy their former range, from Japan to Punta Morro Hermoso, Mexico.

Todos Santos ►

## Research currently being supported by Friends of the Sea Otter

Laura Yeates, a graduate student at U.C. Santa Cruz, is studying the environmental influences of thermal biology, behavior, and ecology of the southern sea otter (see article in this *Raft*).



Manuel Lopez works at the Molina National Agrarian University in Peru and is conducting a survey of marine otters (*Lutra felina*) off the Peruvian coast.



Shawn Larson of the Seattle Aquarium is comparing the genetic diversity and structure of the current sea otter population to the historic population from museum samples up and down the west coast.

## FSO Education Retail Center Plans Move !



Plans are underway to move the Education Retail Center to the American Tin Cannery on Oceanview Blvd. in Pacific Grove. The new location (shown above) offers double the floor space of our current Cannery Row location, Monterey Bay and Recreation Trail views, and proximity to Hopkins Marine Station and the Monterey Bay Aquarium. FSO's administrative offices will also move to the same address. Look for the Center to be up and running with expanded educational displays and lots of otterly delightful merchandise by this summer. Photo courtesy of Chris Miller.

# The Passing of a Wonderful Biologist

By Jud Vandevere, FSO Board Member

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*When nature causes man a problem, it's best to consult nature before deciding on a solution.*

Dr. Ralph Buchsbaum  
(Quoted from Pittsburgh Press)

For many years Ralph and Mildred Buchsbaum were Executive and Advisory Committee Members of FSO. Their son-in-law, Dr. John Pearse, who currently is President of the California Academy of Sciences, was also a FSO Advisory Committee member.

Ralph Buchsbaum died of heart failure on February 11, 2002. He was 95 and had prevailed over his son, Dr. Monte Buchsbaum, in a game of chess the night before.

Ralph was born in Chickasha, Indian Territory, in 1907, the year before Oklahoma became a state. His father was a pathologist. He earned a doctorate in zoology at the University of Chicago in 1932.

He stayed on, and as a young faculty member—with Mildred's collaboration and illustrations by his sister, Elizabeth—he published *Animals Without Backbones* in 1938.

His book sold hundreds of thousands of copies and was met with great acclaim, so that by the time he joined the University of Pittsburgh faculty in 1950, he enjoyed a measure of fame as a popularizer of natural science. He remained at Pitt for 20 years.

For their next book and to help others get published, Ralph and Mildred founded Boxwood Press, which in 1957 issued another popular book, *Basic Ecology*.

Ralph developed a series of educational films on invertebrates for Encyclopedia Britannica Films. In 1963, he was a Fulbright professor in Bangkok, Thailand, and later in Quito, Ecuador, where he consulted on the development of biology curricula. He was also a United Nations consultant on education in Africa and India. He was an honorary director of Defenders of Wildlife.

Included in the wide variety of books Boxwood Press produced for other authors was *What Is a California Sea Otter?* by Jack Graves, illustrated by Ralph Cooke, 1977.

Ralph and Mildred twice revised *Animals Without Backbones* for The University of Chicago Press. In 1987, their daughter and her husband, Drs. Vicki and John Pearse, and the Buchsbaums wrote and published through Boxwood Press, *Living Invertebrates*.

In the early years of FSO, the Executive and Advisory Committees often met in the Buchsbaums' home across Oceanview Boulevard from Stanford's Hopkins Marine Station. Over the years, FSO staff and officers profited greatly by the sound advice received from the Buchsbaums. Mildred preceded Ralph in death in January 1996.

## In Memorium

Thanks to the friends and family of Bobbi Seindenberg, who passed away on October 16, 2000, for contributing to FSO in lieu of flowers.

## Planned Giving

Over the years, Friends of the Sea Otter has been blessed to have received bequests and other memorial gifts from our members and their families. These gifts have made important work possible. We invite your consideration of the inclusion of FSO in your estate planning.

*Please contact Don Ingraham at our office in Monterey, (831) 373-2747.*



*Husbandry and Training, continued from page 6*

invaluable behavior that allows trainers to condition a number of husbandry, veterinary, and fun behaviors, including entering a kennel, heeling between pools and onto a scale, body layouts, and rear flipper and paw presents.

Researchers continue to study the environmental and physiological factors that contribute to the southern sea otter's decline, and to devise methods for aiding in the population's recovery. With the help of Taylor, Gracie, Wick, and Morgan, we have learned about sea otter physiology and care. This knowledge can be applied to the conservation of the species as a whole.

Several individuals and institutions collaborated on this important work. The segments in this paper regarding Taylor and Gracie were taken from "Orphaned to trained: it's all about teamwork," by William Hurley, Jennifer Gafney, Traci L. Fink, and Laura Yeates of Long Marine Laboratory; Andrew Johnson and Julie Hymer of the Aquarium; and Pete Davey and Bill Fleming of Colorado's Ocean Journey. Material in this article was originally published in the International Marine Animal Trainers Association (IMATA) *Soundings*. For more information on IMATA, visit [www.imata.org](http://www.imata.org). The University of California, Santa Cruz and the United States Geological Survey provided funding for the metabolic work involving Wick and Morgan.

The staff of LML would also like to thank the CF&G for providing pool space and facility support for all the otters.

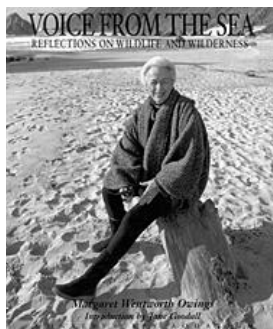
***Jen Gafney is a Senior Trainer at LML at UCSC for Dr. Terrie Williams. Jen has worked with Dr. Williams on research projects addressing locomotor performance, thermoregulation, and energetics. She graduated from UCSC in 1998 with a degree in marine biology. Jen has trained and cared for sea lions, dolphins, tropical birds, and sea otters for six years, beginning her work at LML while still an undergraduate.***

## Voice from the Sea

by FSO Co-founder  
Margaret Wentworth Owings

230 pages of essays, poetry, and art are woven into an evocative portrait of nature. Introduction by Jane Goodall and preface by Wallace Stegner. *Paperbound. #103 \$19.95*

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## THE OTTER RAFT

*The Otter Raft* is a twice-yearly publication designed to educate the public about the mission of Friends of the Sea Otter, increase awareness of the situation and needs of the sea otter, and recognize those who contribute to meeting those needs.

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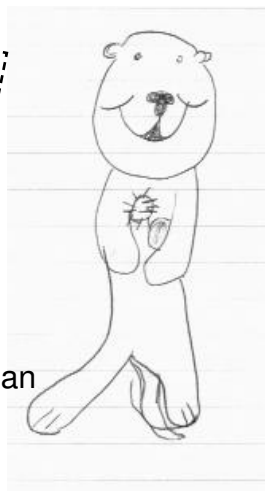
# Corner

## Kids'

Miss Lawrence's 4th-grade class  
El Camino Creek School, Carlsbad, CA



Julie Kernan



1-31-02

Hello,

My name is Jacob R.

I am in third grade and am concerned about Otters.

I found <sup>out</sup> about you in *7-look*.

I am not old enough to help protect them yet but when I get older I want to help. Please write back and tell me what you are doing to help them. What are you trying to accomplish right now?

About 1-hour *Mary* *pl* *sur* *to* *fill* *and* *see* *line*

Sea Otters are left over? I know about 1 million were killed for their fur. What areas have sea otters now? Thanks.

--Jacob R

Jacob Roberts



## Meet Joshua Cassidy

Joshua Cassidy is a biologist new to the central California coast. He moved to the Monterey Bay area in September, and signed on as Education Associate with FSO in November. He graduated with a bachelor's degree in Wildlife Biology from Ohio University and then headed straight for the Pacific.

He is currently the vice-president of the Pacific Cetacean Group, where he is also a principal investigator in their Sea Otter Ecology Project,

which takes place in Elkhorn Slough, Moss Landing, CA.

Joshua's main points of interest include sea otter feeding ecology, demographics, behavior, and disturbance. He was also a field observer in the NOAA 2001-2002 Gray Whale Census Project.

Since joining FSO, Joshua has created and presented educational *PowerPoint* presentations and hands-on demonstrations geared to specific audiences. He looks forward to continuing his work educating the public about sea otters and marine ecology.

*It is just over three years since FSO lost its greatest friend, Margaret Owings. Many of us knew Margaret personally and are still guided by her unique vision and mission, but as time goes by we realize that many of us never had the opportunity to know this outstanding woman. It is in this light that we debut an on-going segment of The Otter Raft. "Margaret's Corner" will highlight the writing and artistic creations that flowed so passionately from her pen. In this way we intend to remind ourselves of the original joy and the dream that started it all. Thanks to Nat Owings for permission to reprint this piece, which originally was presented at FSO's 30th anniversary celebration.*

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## Margaret's Corner

*Compiled by Ardean Wright*



*Margaret Owings*

### A Meaningful Sound

Sitting here above the sea, I am often swept up by the roar of explosive power, mounting with the cadence of sea lions, the drumming elephant seals and the wild cries from the circling gulls. But at this quiet moment, when the sea lies calm, I sense only a broad current of sound—without definition—until my ears are pricked by the quick tap-tapping of a sea otter. Resting in a kelp bed of glassy fronds that encircle its small body, it cracks a clutch of mussels against a stone tool on its chest. A fragment of wind, flung up from the ocean, brings this meaningful sound to my ears.

I say “meaningful” because this sharp, brittle pounding has signaled the presence of the smallest of sea mammals along the California coast for millions of years. This is an ancient ritual, this cracking of shells to dislodge their edible occupants. And for millions of years, a population balance and abundance of both otters and their shellfish prey were maintained in a fluctuating natural equilibrium.

But that natural balance of marine life drastically changed when white men began to slaughter the otters for their fur. In 1741, the otters were first observed by Europeans on Bering's ill-fated Russian voyage. The swarming of fur hunters to collect their skins began a 170-year epoch of cruel greed. Sailing down the Alaskan coast to California, joined by American ships and Spanish galleons, they relentlessly pursued the last of the visible otters. In 1911, the International Fur Seal Treaty brought this period of decimation to a close, but by then the tap-tapping of the otters no longer rose from California's coastal bays and wave-slapped beaches.

Indeed, it was nothing short of a miracle—and a closely guarded secret shared by only a few—that a few otters had survived, hidden in kelp beds off remote and rugged shores. It was not until 1938, 60 years ago, when California's human population had shifted from native and pioneer stock to 6,056,000 people, that Howard Granville Sharpe suddenly

realized that a group of sea otters was rafting together at the mouth of Bixby Canyon on the Big Sur coast. A renewed radiance of life had reappeared in our nearshore waters.

But it was not long before commercial abalone divers began to castigate these rare mammals as “destroyers” and sought measures to diminish their numbers. The otters desperately needed friends to speak on their behalf. And so, in 1968, 30 years ago, FSO was organized to stand firmly behind a sound conservation program for the southern sea otter.

I tend to think that FSO finds its symbol in the wave which lifts and falls, gathering momentum despite crosscurrents, despite human intrusions of toxic wastes and sewage poured into nearshore waters, despite oil spillage from increasing tanker traffic hugging the coast. Yes, everything is transient where the sea meets the shore.

We, in our struggle to guard the California sea otter, move toward our goal like the wave, startled by the mortalities from shootings, saddened by otter drownings in gill and trammel nets set in less than 20 fathoms of water, resentful of oil spills and plastic perils. And then come the heavy storms that threaten death unless there is human intervention and rescue.

The door is ever flung open to receive the unexpected—tides ebb and flow, mixing fact with idealism, science with emotional response. Thus, our growing knowledge engenders growing concern.

As George Schaller describes it: “We seek the moral values in what we do; an obligation to fight for preservation, to struggle to the best of our ability to assure ourselves, as well as the million private lives, a future.”

On our 30th anniversary, we grapple with threats from vessel traffic, entrapment, oil spills and coastal pollution. California's human population is currently estimated at 33,252,00—that's millions of people on a collision course with 2,100 otters. We have learned that if we are to preserve a healthy population of these small animals, if the tap-tapping of the sea otter is to remain an inspiring motif along our shores, it will demand more foresight. It will require vision.

**The Otter Raft** Spring/Summer 2002  
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**Our Mission**

Friends of the Sea Otter (FSO) is a not-for-profit organization founded in 1968 dedicated to the protection of a rare and threatened species, the southern sea otter, as well as sea otters throughout their north Pacific range, and all sea otter habitat.



*Photo courtesy of Lee Worthington*

