News from the

MONTEREY BAY

NATIONAL MARINE SANCTUARY

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION SUMMER 2002

Exploring Inner Space

For seven incredible days in May, scientists had a rare opportunity to explore an ancient undersea volcano, the Davidson Seamount. The seamount is located 120 km (75 miles) southwest of Monterey due west of San Simeon, and 1,300 meters (4,000 feet) below the ocean's surface. The exploration team led by Andrew DeVogelaere from the Monterey Bay National Marine Sanctuary included collaborators from Monterey Bay Aquarium Research Institute (MBARI), Moss Landing Marine Laboratories, University of Maryland, and the Monterey Bay Aquarium.

Daily cruise logs, photographs, and videos are available on an outstanding website that conveys the sights, sounds, and emotions of being on the cruise. "Seamounts are biological hot-spots in the world's oceans," says De Vogelaere. "We're eager to bring new scientific tools to the project, and to use the website to reach the public as we're making discoveries about this unique and special place."

"What makes the Davidson Seamount so enticing for exploration is that it is a gigantic, submerged volcano, rising a striking 7,250 feet above the sea floor. If it were on land, the Davidson Seamount would dominate the landscape like Mount Shasta dominates the horizon throughout northern California. Its length and width—30 miles long and 12 miles wide—could fill Monterey Bay from the Santa Cruz Boardwalk to Monterey's Fishermen's Wharf." Excerpt from log of Bill Douros, Sanctuary Superintendent and cruise scientist.

The exploration team took this picture of a flytrap anemone at Davidson Seamount.

The top of Davidson Seamount is so far below the ocean's surface, typical human activities most likely have not yet harmed the seabed and organisms growing on it. Anchoring and trawling usually do not occur below 1,500 feet, and near shore discharges and disposal occur far away, along the coastline. The waters around seamounts are especially productive feeding grounds for everything from fish to sharks, albatrosses, and sperm whales. But by and large, little is known about what lives on seamount slopes, and unfortunately, seamounts are not protected by any of our National Marine Sanctuary programs.

"From the few surveys in other regions of the world, it appears that there are hundreds of animals found exclusively on seamounts…Seamount communities are restricted to fixed habitats, and many non-commercial species are also very long lived (on the order of 100 years or more) with limited dispersal and recruitment between seamounts. …this work will provide critical information on the susceptibility of this unique environment to human activities. …We are using quantitative video transect with a remotely operated vehicle (ROV) to conduct most of our surveys. ROVs allow rapid and detailed observations of benthic invertebrates, bottom fishes, and their habitats in environments that are remote and difficult to sample..." Excerpt from the log of Mario Tamburri, Science Team Leader and Co-Principal Investigator, University of Maryland Center for Environmental Science.

The expedition sailed on the RV *Western Flyer*, MBARI's research ship, and operated its state-of-the-art ROV *Tiburon*, a robotic submersible capable of diving 4,000 meters (two and a half

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WHAT'S INSIDE

News from the
MONTEREY BAY
NATIONAL MARINE SANCTUARY

Managing Editor/Writer
Julia Davenport

Copy Editors
Dawn Hayes, MBNMS staff

Graphic Design
Jennifer Chambliss

Illustrations
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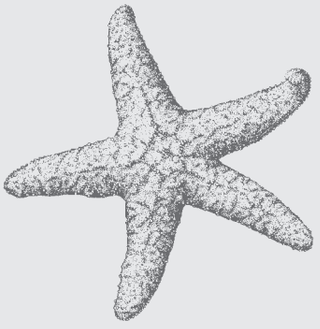
A. Roest, page 6.

We welcome comments and will consider items submitted by readers as space permits.
Comments and articles should be sent to Dawn Hayes, Education Coordinator, Monterey Bay National Marine Sanctuary, 299 Foam Street, Monterey, California 93940.



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miles) below the ocean's surface. The scientists carried out ROV surveys, video surveys of bottom communities, sampling of benthic organisms, and surveys of fish, seabird, leatherback turtle, and marine mammal populations. They created an onboard hi-tech pressurized aquarium to keep animals alive for the journey back to shore.

"In order to collect deep-sea animals and keep them alive and healthy long-term, we try to recreate the environmental parameters of the deep-sea environment as closely as possible in captive settings. Most of the environmental parameters—temperature, salinity, pH, oxygen saturation, et cetera—are fairly easy to control. However one parameter, pressure, is difficult to recreate in tanks. Imagine trying to pressurize a tank to 100 atmospheres! This is the equivalent of approximately 1,500 pounds per square inch (keep in mind the pressure in a car tire is about 35 psi). Luckily for us, keeping the animals cold helps to mitigate some of the effects of loss of pressure, so many of the animals do fine in our 1 atmosphere pressure tanks." Excerpt from log of Edward Seidel, Associate Curator, Monterey Bay Aquarium.

Information gathered on the cruise will be well used; leatherback turtle and sperm whale data for population assessment by the National Marine Fisheries Service, deep-water animals could become part of Monterey Bay Aquarium's living deep-sea exhibit, and video from the expedition may be featured in the aquarium's "Exploring Monterey Canyon" auditorium program. Get an inside look at the Davidson Seamount expedition on NOAA's Ocean Explorer website, http://oceanexplorer.noaa.gov/explorations/02davidson/davidson.html.

Welcome Note

The Monterey Bay National Marine Sanctuary reaches its ten-year anniversary this September. It has been an exciting ten years, and perhaps one of our most exciting events occurred this year, when a team of scientists embarked on an exploration of the Davidson Seamount, an inactive submerged volcano located just beyond our boundaries.

In May, explorers from the sanctuary office, Monterey Bay Aquarium Research Institute, Monterey Bay Aquarium, University of Maryland, and Moss Landing Marine Laboratories spent one week exploring at depths of 1,300 meters using a Remotely Operated Vehicle (ROV). This geologic feature is so impressive that it was the first to be called a "seamount." Davidson Seamount proved to be a "hot spot" of biodiversity, much of which was caught on video by the ROV. Our mission was to characterize the relatively unknown seamount by documenting its habitats and species, taking geologic samples, and describing the ocean environment. Our research team was thrilled to sight sperm whales, albatross, and a tremendous diversity of fish and corals.

We hope to pass on our excitement and awe for this special place. Please stayed tuned for new and fascinating information about the Davidson Seamount and other current research in the sanctuary.

William J. Douros

William J. Douros, Superintendent
Monterey Bay National Marine Sanctuary

Monterey Harbor Invasion

Dr. Pamela Roe from CSU Stanislaus holding an adult Undaria *at Monterey Harbor. Dr. Roe is five feet tall.*

A potentially harmful brown alga from Japan that was first discovered in Monterey Harbor in May 2001, was spotted again this March by a vigilant observer. Dr. Pamela Roe of California State University Stanislaus brought her marine biology class to Monterey Harbor to collect ocean water samples and found an unfamiliar alga. She collected a specimen to take back to her office for further identification, but couldn't find it in her identification keys. When her copy of *Ecosystem Observations 2001* (the annual sanctuary report) arrived in the mail, she read the article on *Undaria pinnatifida* and knew immediately what they had found. Dr. Roe called the sanctuary office to report the finding, and in April her class along with sanctuary staff revisited Monterey Harbor and collected a total of 325 individuals weighing over 56 kg (125 pounds).

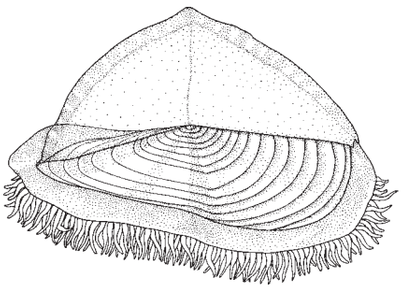
"I was afraid there wouldn't be any more plants, since we had just been there in March," says Dr. Roe, who also teaches a class on biodiversity. "But when we went out with Sanctuary Research Intern Kelly Newton in April, it was all over the place, it had grown humongous, and the plants were all mature." The notorious weed ranges from 50 to 200 cm long (20 inches to over 6 feet). "My class felt really good about getting rid of it—we didn't get it all, but we were delighted to help." Fifty tissue samples were collected for a population genetics study at the University of Southern California, and the Monterey population will be continually monitored.

The pest, commonly known as wakame in Japan, is a popular plant cultivated for fresh and dried food. Previously introduced into Australian, New Zealand, and European waters, it now unfortunately appears to be spreading from southern California northward. A single plant can release up to 100 million spores a day that can colonize both hard bottom surfaces as well as floating objects such as ropes, ship and boat hulls, and pier pylons. It grows quickly and is mature enough to reproduce after only fifty days. It out-competes native species, and mass infestations by this kelp elsewhere have completely changed marine ecosystems. The plant can grow to two meters in length, has a distinctive spiraled spore-producing structure at its base, a central stem that extends the length of the plant, and a blade up to one meter wide. It is found in sheltered harbor waters on rocks, breakwaters, and marine debris from the low tide mark to fifteen meters.

Please report possible sightings of *Undaria* to the sanctuary office, (831) 647-4204. The intertidal you save may be your own!

Sailor Slick

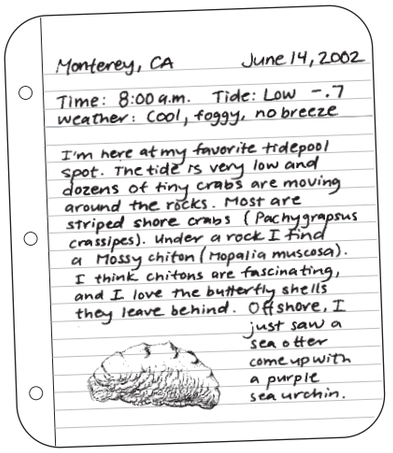
Appearing eerily similar to a massive oil spill, millions of by-the-wind sailors (*Velella velella*) washed up on sanctuary beaches in April and May. These small relatives of moon jellies float at the surface in offshore waters by way of a gas-filled float and transparent triangular sail. The sail is angled to the left or right of the flat, oval main body axis in such a way that breezes force the animals to drift 45 degrees to the left or right of the true wind directions. Right-angled animals are most common off of the California coast, so our prevailing northerly winds usually hold the population offshore. Long periods of southerly or westerly winds can bring them onto beaches. These winds are common this time of the year. Because of their iridescent bright blue coloring, crowds of *Vellela* can appear as an oil slick on the water surface. Their stinging cells are harmless to humans but useful for catching prey, primarily zooplankton. The sturdy sailors can grow to be 10 cm (4 inches) long, 7.6 cm (3 inches) wide, and 5 cm (2 inches) tall.



By-the-wind sailors (Velella velella) *can look like an oil slick on the water, but are actually surface floating relatives of moon jellies (though they were previously thought to be siphonophores, similar to Portugese man-o-wars). They are sometimes blown onshore by southwesterly winds common in the spring.*

KID'S PAGE

Nature Notes



Keeping a field journal is a key part of discovering nature. The next time you go out, take a notebook or journal with you. It's a great way to keep track of all the places you've been, and things you've seen. Let the blank pages awaken the artist within you!

Start with a description of the surrounding area, including the date, location, weather, and state of the tide if you're near the ocean. Has it been rainy or windy? Describe sounds, smells, and what the air feels like on your cheek.

Then begin describing what you see. Write about the long view—what you can see in the distance—then proceed to the close view, the small things right beneath your feet. Note interesting characters or events and include who, what, how many, how long, how often, and how far. Illustrate your observations with sketches and pictures, and perhaps add a feather or leaf.

Field journal writing is a skill biologists are taught. In earlier times, these notes were the only record of new species, places, and natural events. Charles Darwin's field notes from his 1856 voyage on the HMS *Beagle* are still a valuable record of exploration and discovery. His observations and notes from that journey influenced his later theory of natural selection. Many famous naturalists have published books from well-kept field journals. A fascinating account comes from *The Log from the Sea of Cortez*, John Steinbeck's chronicle of collecting trips he took with Ed "Doc" Ricketts in Mexico. *Pilgrim at Tinker Creek* by Annie Dillard is a variation of a field journal, filled with thoughts about nature and life.

Use a field journal to remember a trip to a new place and to watch changes over time. Many science illustrators started off by making simple drawings of familiar locations and natural objects. A field journal is a great beginning to a lifelong pastime of observing, writing, and drawing—you never know where your interests will lead you!

Summer Adventures

Hey kids! How would you like to spend your summer? Classes in computers and reading, or kayaking and tidepooling? If you're in the kayaking and tidepooling group, read about this new twist on summer camps, where kids like you experience first-hand the natural thrills and wonders lurking in sanctuary waters. Two marine science camps for kids were held the last two weeks of June in Monterey and Cambria, both supported by the sanctuary. Campers had loads of fun and adventures, and learned about how they could help protect our sanctuary.

Camp SEA Lab Monterey Bay held two programs for children ages 8 – 13. SEA Campers explored from the top of the watershed to the bottom of the deep sea. They paddled ocean kayaks, explored tidepools, hiked around Elkhorn Slough, and had hands-on activities and ocean videos in the classroom.

In Cambria, Camp Ocean Pines offered an Arts and Nature Camp for children ages 8 – 12. Tidepool walks, night hikes, and campfires were matched with marine arts activities such as making kelp baskets, fish prints, ocean murals, and poetry on all things marine.

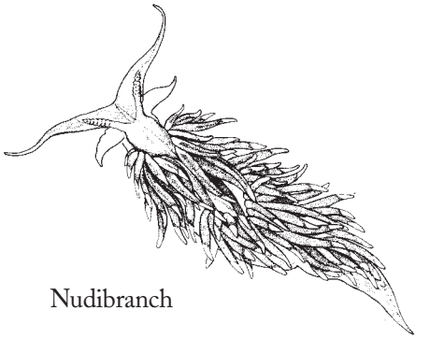
These camps are a fun choice for kids who are looking for something new and exciting. Next year, consider ocean summer camp! Interested? Contact:

Camp SEA Lab Monterey Bay
100 Campus Center, Bldg. #46A
Seaside, CA 93955
(831) 582-3681; FAX: (831) 582-3057
campsealab@csumb.edu
www.sealabmontereybay.org

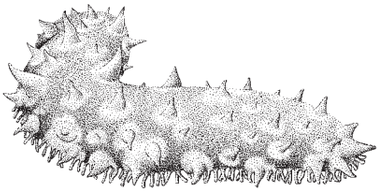
Camp Ocean Pines
1473 Randall Drive
Cambria, CA 93428
(805) 927-0254
www.campoceanpines.org

Backbone or Not?

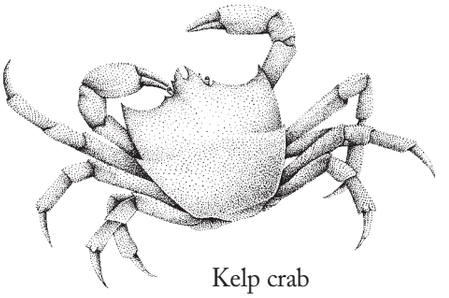
Look at the creatures below and try to guess whether they are a vertebrate (animals with backbones) or an invertebrate (no backbones). One clue to help you is that vertebrates are birds, reptiles, amphibians, mammals, or fish. If it isn't one of these, it is probably an invertebrate. You can look in a good field guide for more information about these creatures. We recommend *California Marine Life: A Guide to Common Marine Species*, by Marty Snyderman (1998), or *Peterson's First Field Guides*, both available at local bookstores.



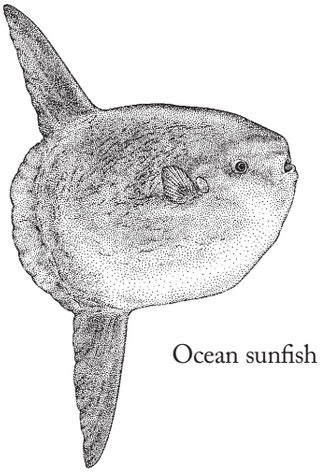
Nudibranch



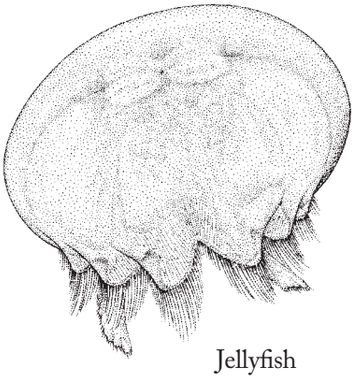
Sea cucumber



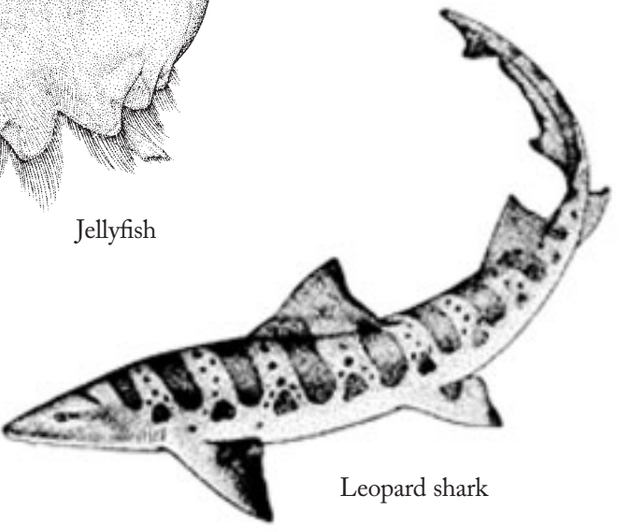
Kelp crab



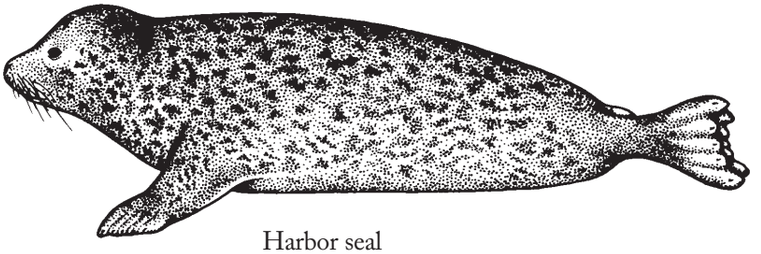
Ocean sunfish



Jellyfish



Leopard shark



Harbor seal

Wildlife Viewing Calendar

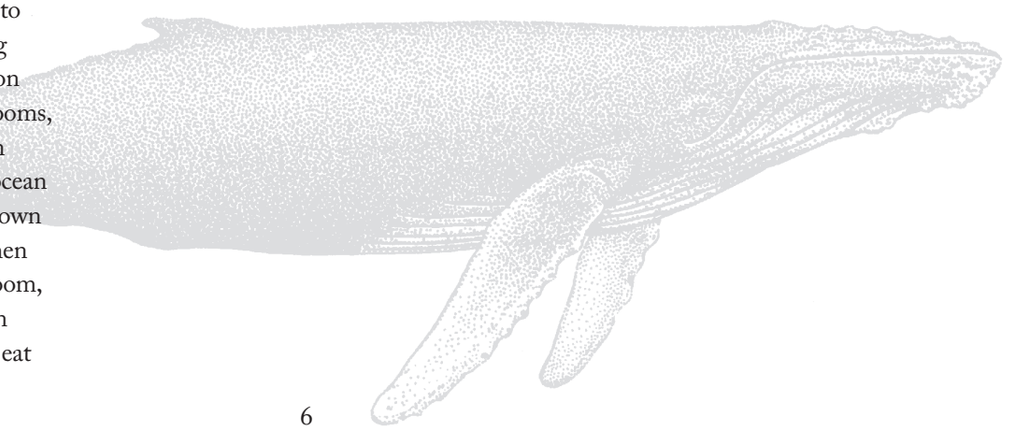
July, August, September

Get out the binocs! In July and August, brown pelicans (*Pelecanus occidentalis*) move into the central coast from southern breeding grounds in Baja California and southern Mexico. These large birds, once decimated by pesticides, have increased in number in recent years and the population has stabilized. Adult Heermann's gulls (*Larus heermanni*), with soft gray plumage and red beaks, appear on central California beaches in late summer and fall. They spent the winter in breeding colonies in Mexico and have moved north for the summer months to feed in our colder, nutrient-rich waters. Immature Heermann's, the young of the year, are black with red or pinkish beaks.

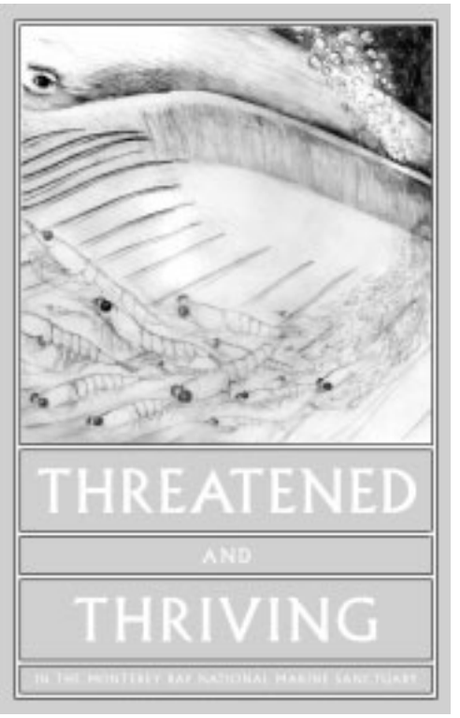
You can spot California sea lions (*Zalophus californianus*) in the sanctuary all year round with population spikes in July and September. Adult and subadult males leave southern California and Mexico when the sea lion breeding season ends in July, and head to good feeding areas as far north as British Columbia. Many stop to haul out along the central coast and on islands and offshore rocks in the sanctuary. Young sea lions are especially vulnerable to domoic acid, a naturally-occurring nerve toxin produced by a plankton (*Pseudonitzschia* sp.). Plankton blooms, common in the summer, are often marked by "red tides" where the ocean becomes so thick with reddish-brown plankton the water looks red. When fish eat this plankton during a bloom, the toxin becomes concentrated in their bodies. Young sea lions that eat the fish may succumb to the high concentrations of domoic acid and act a little strange. The toxin affects motor skills, sometimes causing a "drunken gait" and seizures. If the concentration gets too high, the animal may die. When caught early, the sea lion can be treated and saved. If you see a sea lion on shore that acts a little odd, call the Marine Mammal Center at (415) 289-SEAL.

Now is a great time in the sanctuary to go whale watching. Look for blue whales (*Balaenoptera musculus*) and humpback whales (*Megaptera noveangliae*) traveling through. You might catch a glimpse of common dolphins (*Delphinus delphis*). While you are out there, look for leatherback sea turtles (*Dermochlys coriacea*). They follow the drifts of jellies, including moon jellies (*Aurelia* sp.) and sea nettles (*Chrysaora* sp.), common along the central coast during summer and fall.

Camping is a great way to enjoy the coast during the summer. California State Parks have nature programs available to campers, including the Junior Ranger program and Nature Explorers. Evening fireside presentations are regular events at many parks through Labor Day. Visit their website at www.parks.ca.gov for more information.



Threatened and Thriving Campaign



A sneak preview of a poster draft.

We are proud to announce "Threatened and Thriving," a new public awareness campaign that highlights twelve species found in the Monterey Bay National Marine Sanctuary. The first species pair, "Blue Whales and Krill" will debut this summer. Look for our colorful posters at aquariums and natural history museums or find "Threatened and Thriving" on our website (montereybay.nos.noaa.gov).
As part of the campaign, lectures on blue whales and krill will be held throughout the sanctuary this fall—check our website for dates and times.

The blue whale was believed extinct by 1960, but is making a slow comeback after receiving international protection. Blues are baleen whales that travel ocean currents to filter feed on krill, small crustaceans resembling shrimp. Krill flourish in the rich cold waters off California. Tiny krill and small fish congregate in massive "bait balls" near upwelling regions in the sanctuary. In late summer and fall, blues can be seen following the krill fairly close to shore, making the sanctuary one of the best places in the world to see them. Pick up a "Threatened and Thriving" poster and learn more about these fascinating creatures, large and small.

Student Ocean Conference and Sleepover

This spring, the Monterey Bay National Marine Sanctuary, Monterey Bay Aquarium, and Marine Advanced Technology Education (MATE) Center teamed up to host almost 120 central California middle and high school students at a once-in-a-lifetime educational extravaganza that combined science, technology, conservation, and geography.

The two-day Student Ocean Conference, held on May 10 and 11, focused on the theme "Using Science and Submersibles to Conserve our Marine Resources." It was funded in large part by the National Geographic Society's Geographic Education Foundation in collaboration with the Sustainable Seas Expeditions and Coastal America. The conference goals were to promote interest in the sanctuary's marine environment, and to give students first-hand experience with the science, technology, and conservation efforts involved in the research and management of our underwater resources.

The Student Ocean Conference combined and expanded upon two existing local events: the ROV Contest coordinated by the aquarium and MATE, and the annual Student Summit hosted by the sanctuary office. The conference included two tracks; in the ROV Contest Track, teams of students showcased their engineering skills in an underwater competition that included maneuvering home-built submersibles through an obstacle course and retrieving objects. Students in the Student Summit Track presented their own marine conservation and research projects to an audience of peers and local scientists.

All students observed part of the opposite track, and participated in their choice of mini-workshops (a crash course in GIS shipwreck mapping or a mini-scuba class) and field trips (kayaking on Monterey Bay or visiting MBARI's headquarters). Participants also learned about marine science and technology career opportunities in the marine career panel, and heard from fascinating guest speakers: Dr. Sylvia Earle, National Geographic's Explorer in Residence, and Alan Scott, a marine electrical engineer who participated in the discovery and exploration of the S.S. *Central America*. A sleepover at the aquarium was a well-deserved reward for the talented and hard-working students.

Lea Bond from San Lorenzo Valley High School presents student recommendations on national ocean policy to the Student Summit audience. The recommendations will be forwarded to the U.S. Commission on Ocean Policy.

"The SCUBA has been the best part. I've been afraid of SCUBA. It was scary but fun, very inspiring. Now I for sure want to get certified!"
Lea Bond, student, San Lorenzo Valley High School, Felton

"The ROV competition was wonderful. Everything was run great. Sleeping in the aquarium was great. [The students] learned that science is not just connecting the dots. Lot's of room to grow."
Vicky Martinez, teacher, Calaveras High School, San Andreas

Cambria residents Ben Boer, Tom Benton, and Dan Martin take samples at San Simeon Creek.

Snapshot Day Volunteers Rally

Early in the morning on Saturday, April 20th, 155 volunteers throughout the Monterey Bay National Marine Sanctuary gathered at four hubs, eager to rally with their teams and be on their way to monitoring sites to sample local streams and creeks. The annual Snapshot Day offers a glimpse of the health of most streams flowing into the sanctuary on one day in April.

Volunteers covered the central coast from Pacifica to Morro Bay and monitored over 150 sites, measuring parameters important to fish including dissolved oxygen, water temperature, conductivity, pH, and transparency. They collected water samples for bacteria, nitrate, and orthophosphate analysis. This was the third annual Snapshot Day event on the Central Coast organized by the Monterey Bay Sanctuary Citizen Watershed Monitoring Network with assistance from the Coastal Watershed Council, The Ocean Conservancy, and the California Coastal Commission.

Snapshot Day provides the opportunity for citizens to learn about their environment while providing valuable information to decision makers. Last year's report is available on the web, http://www.mbnms.nos.noaa.gov/monitoringnetwork/events.html.

Sanctuary Kayak Naturalists are There for You

Have you ever been sea kayaking in the Monterey Bay National Marine Sanctuary and wished you had someone to answer your burning marine biology questions? Such as, "Why don't the seals just sleep in the water instead of trying to balance on rocks like that?" Or, "What are those little feathery things growing on top of the kelp fronds?" Or, "What in the world are those sea otters doing to each other!"

If you are kayaking in Elkhorn Slough or along Monterey's Cannery Row this summer, look for one of our Sanctuary Kayak Naturalists to answer your questions. They can interpret sanctuary resources and provide information about its ecology and wildlife. You can recognize them by their kayaks marked "National Marine Sanctuary" and blue life vests with the NOAA logo on the back. They will be on the water every Friday, Saturday, and Sunday from June through September. In fact, don't be surprised if they greet you and paddle over for a chat. That is their job.

The Monterey Bay National Marine Sanctuary's TeamOCEAN Kayak Outreach Program was developed as an educational approach to the problem of wildlife disturbance by kayaks. The program puts knowledgeable naturalists on the water to serve as docents for the marine sanctuary, promote respectful wildlife viewing, and protect marine mammals from disturbance. The TeamOCEAN Kayak Outreach Program, now in its second year, includes four part-time staff and a small corps of kayak volunteers.

TeamOCEAN staff have no enforcement authority; they do not write tickets or issue warnings. The outreach program's success is attributable to the facts that most kayakers care deeply about the ocean environment, and most wildlife harassment is unintentional.

"We found most kayakers knew they were supposed to stay back from marine mammals, and had every intention of doing so, but didn't see the animals until they were already too close," says Brad Damitz, who piloted the project in fall of 2000. "They expected the otters and seals to be more obvious. We were able to show people how to spot the animals from a distance, and explain the impacts of disturbance."

Sanctuary naturalists ask boaters to back away from animals, and then explain the biology behind the protective regulations and how to recognize behaviors that precede disturbance. But as often as possible, they try to convey this information before any animals are disturbed. So the next time you're out for a paddle in Monterey or Elkhorn Slough, keep your eyes peeled for the friendly sanctuary naturalists. They will probably paddle up to say "hi"—unless you beat them to it.

The TeamOCEAN Kayaker Outreach Program is funded and coordinated by the Monterey Bay National Marine Sanctuary. Kayaks, paddling gear, and kayak skills classes are donated by Eskape Sea Kayaking, Kokatat, P.G. Ocean Rescue, and Perception. In addition, Steve Shimek and The Otter Project, Monterey Bay Kayaks, BayNet, Monterey Fire Department, U.S. Coast Guard, and local marine enforcement personnel have graciously provided program support.

Welcome New Staff

Joining the Resource Protection team is our newly contracted Environmental Policy Specialist, Huff McGonigal. Huff is a native of the Monterey Peninsula. He received his B.S. in aquatic biology from UCSB and the University of Otago in New Zealand in 1996. He has worked as a research diver for Fish and Game and for several underwater production companies. Huff tells us, "Just when things were going well, I had the misconceived idea of going to law school." He is now a recent graduate of Lewis and Clark Law School in Portland, Oregon where he specialized in environmental and natural resource law.

Rachel Saunders and Raymond Chisolm. Huff McGonigal not pictured.

The Program Support Team has also added to its numbers. Raymond Chisolm recently accepted the position of Program Specialist. Ray's duties include all procurement related activities for the office as well as budget tracking and reporting. Ray comes to us from the Naval Research Laboratory here in Monterey and has also worked at the Naval Postgraduate School and Fleet Numerical. His 14 years of experience in administering budgets and procurement will be greatly appreciated in our small, but growing program.

Also joining the Program Support Team is Rachel Saunders, who has accepted the position of Community and Public Relations Coordinator. Rachel Saunders has been a leader in coastal and ocean conservation for 19 years. She was among the leaders in the creation of the Monterey Bay National Marine Sanctuary and a founding member of the Monterey Bay National Marine Sanctuary Advisory Council (serving from 1994-2002). For a decade Rachel was the point person in the Pacific Region for the Center for Marine Conservation working on the creation and implementation of national marine sanctuaries, with a focus on Monterey. Most recently, she directed the development of Camp SEA Lab Monterey Bay, a new residential ocean science education camp for children and families.

Celebrating Community Support

Celebrating ten years of support from 50 organizations, the sanctuary hosted a June 8th event honoring community members whose many hours of volunteer service have benefited the Monterey Bay National Marine Sanctuary. Over 100 volunteers were treated to an evening of music and dining at the Monterey Beach Hotel in Seaside, featuring speakers Dave Potter, Monterey County Supervisor, and Bill Douros, Sanctuary Superintendent. Attendees were the many sanctuary volunteers and representatives from numerous marine groups. We greatly appreciate the hard work and dedication to the Monterey Bay National Marine Sanctuary exemplified by these volunteers.

Staff Profile

It takes 360 documented days at sea to earn a captain's license. Deirdre Hall, Sanctuary Resource Protection team member, logged in over 400 on her path to be a U.S. Coast Guard Certified Captain. She received her license in April and can carry passengers within coastal waters up to 100 miles offshore. Deirdre takes out the sanctuary's 27-foot Sharkcat to support sanctuary programs—monitoring, education, and whatever comes up, including VIPs from NOAA's office in Washington, D.C.

Deirdre began working on boats in 1995 as marine science instructor for a non-profit organization, then in San Francisco Bay on the Department of Fish and Game's Herring Project, later as a commercial fishery observer in Santa Barbara. Her shipboard experiences deepened her love of the ocean first nurtured as a child at the New Jersey seashore. She majored in marine biology, took summer courses at UCSC, fell in love with the area, and moved to California 7 years ago.

As part of the Resource Protection team, Deirdre feels that "I can influence change on a much broader scale than the species based projects I worked on before." She evaluates other agency permits, works collaboratively with agencies to ensure sanctuary resources are protected, and issues permits.

On weekends Deirdre volunteers on a whale watching boat. During her off time she can be found combining some of her favorite things—the feel of sand between her toes, a good book, and a weekend nap at Asilomar beach.

The Monterey Bay National Marine Sanctuary Celebrates Ten Years of Coastal Protection!

Since 1992, the Monterey Bay National Marine Sanctuary has been protecting the coastal ecosystems of central California by conducting scientific research, monitoring, and public education and outreach programs to inspire sustainable use of sanctuary resources.

This September marks the tenth anniversary of the Monterey Bay National Marine Sanctuary designation, and you are invited to join in the celebration festivities! NOAA's Monterey Bay National Marine Sanctuary and a variety of regional partners are hosting a series of events to commemorate the ten-year anniversary of the sanctuary. We hope you can join us at one or more of these fun-filled celebrations along the sanctuary shoreline.

Saturday, September 7, 2002

Tenth Anniversary Celebration in San Simeon

Guided kayak trips, environmental fair and beach barbeque at Hearst Memorial State Beach, dedication of a new sanctuary interpretive exhibit at Hearst Castle Visitor Center, and a reception with a special one-night showing of *Living Edens: Big Sur* at the National Geographic Theater in San Simeon. For more information, call the sanctuary's southern office, (805) 927-2145.

Saturday, September 14, 2002

Tenth Anniversary Celebration in Half Moon Bay

(Festivities to be announced.) For more information, call the sanctuary's northern office, (650) 712-8909.

Friday, September 20, 2002

Reception and Evening Lecture in Monterey

From 6:00 to 9:30 p.m. at the Marriott's Ferrante Room in Monterey. Reception and intimate panel discussion on important ocean conservation issues hosted by Leon Panetta. For more information, call the sanctuary's Monterey office, (831) 647-4255.

Saturday, September 21, 2002

Oceans Fair and Tenth Anniversary Celebration in Monterey

From 11:00 a.m. to 5:00 p.m. at Custom House Plaza. Ocean exhibits from around the nation, boat rides and tours, street performers, face painting, birthday cake, speeches by dignitaries, special hands-on children's activities including an ocean treasure hunt, puppet show and performance by children's recording artist Linda Arnold. This event is being coordinated with Coastal Clean-up Day, and with the celebration of the 400-year anniversary of the exploration and naming of Monterey Bay by Spanish explorer Sebastian Vizcaíno. For more information, call the sanctuary's Monterey office, (831) 647-4255.

Saturday, September 28, 2002

Shark Festival and Sanctuary Tenth Anniversary Celebration in Santa Cruz

Festivities from 11:00 a.m. to 4:00 p.m. at the Santa Cruz Municipal Wharf. Ocean exhibits and hands-on activities, live sharks, children's treasure hunt and puppet show, live music, birthday cake, and formal ceremonies. For more information, call the sanctuary's Santa Cruz office, (831) 420-1630.

We hope to see you at one or more of these celebration events!

ABOUT THE MONTEREY BAY NATIONAL MARINE SANCTUARY

The Monterey Bay National Marine Sanctuary was established in 1992 as the largest of 13 federal Marine Sanctuaries managed by NOAA, the National Oceanic and Atmospheric Administration. Encompassing over 5,300 square miles of water, the sanctuary stretches along the Central California Coast from the Marin Headlands north of San Francisco southward to Cambria in San Luis Obispo County, and protects many habitats, ranging from sandy beaches and kelp forests to one of the largest underwater canyons on the west coast. Nutrient-rich currents nourish the area, supporting a productive and diverse marine ecosystem where countless species, many of the threatened or endangered, make their homes.

The mission of the National Marine Sanctuaries Program is to serve as the trustee for the nation's system of marine protected areas to conserve, protect, and enhance their biodiversity, ecological integrity, and cultural legacy.

For more information, contact the Monterey Bay National Marine Sanctuary office at 299 Foam Street, Monterey, CA 93940. (831) 647-4201. Visit montereybay.nos.noaa.gov

National Oceanic and Atmospheric Administration
Monterey Bay National Marine Sanctuary
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Monterey, California 93940
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NOAA U.S. DEPARTMENT OF COMMERCE

NATIONAL MARINE SANCTUARIES MONTEREY BAY 10th Anniversary