

Alolkooy

Year of the Ocean



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**The
Publication
of the
Channel
Islands
National
Marine
Sanctuary**

*Spring
1998*

*Volume 11
Number 1*



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Alolkoy is published quarterly through a cooperative agreement between the Santa Barbara Museum of Natural History and the Channel Islands National Marine Sanctuary, pursuant to National Oceanic and Atmospheric Administration (NOAA) Financial Award No. NA77OM0090. Opinions expressed in Alolkoy do not necessarily reflect the official position of the Sanctuary or the museum.

The Channel Islands National Marine Sanctuary is part of the National Marine Sanctuary Program, established under Title III of the Marine Protection, Research, and Sanctuaries Act, as amended. For more information, contact: Sanctuaries and Reserves Division, Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, 1305 East-West Highway, SSMC4, 12th Floor, Silver Spring, MD 20910.

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"Alolkoy" is a Chumash word meaning dolphin.
Printed with soy-based ink on recycled paper.



SANTA BARBARA MUSEUM
OF NATURAL HISTORY

CHANNEL ISLANDS



NATIONAL MARINE
SANCTUARY

From the Bridge

A Source of Hope

By Ed Cassano, Sanctuary Manager

In recognition of the importance of the marine environment, the United Nations has declared 1998 *International Year of the Ocean*. In the U.S., the National Oceanic and Atmospheric Administration (NOAA) is taking the lead in raising public awareness about the ocean—its vital role in our daily lives, and why we need to use its resources sustainably.

International Year of the Ocean's emphasis on raising public awareness underscores the Sanctuary's intrinsic educational value. Whether it's school children exploring the flora and fauna of Santa Cruz Island, or scientists studying storm-generated river plumes in the Santa Barbara Channel, for many people the Sanctuary is a natural classroom and laboratory.

From the vantage point of the Sanctuary, we can see in microcosm how critical the ocean is to so many aspects of human life. The ocean provides food, medicine and minerals. People also make a living, study, play in and use the ocean as a global waterway. El Niño—which is an ocean event—shows very clearly the ocean's powerful impact on everyone from potato growers in Peru to kelp harvesters in Santa Barbara. But we also need to be mindful of our own powerful impact on the ocean. One example: Eighty percent of pollution to the marine environment comes from land-based sources like runoff pollution.

Let's also remember the ocean's subtler power. The ocean inspires us to write poetry, to compose music, to paint pictures, to explore and to learn. As Carl Safina writes in this issue, "no place can inspire us with more hopefulness than the great, life-making sea."

1998 is International Year of the Ocean...Get Into It!

Editor's Watch

An Oceanic Year

By Becca Wilson, Alolkoy Editor

International Year of the Ocean is the focus of this issue of *Alolkoy*. In an excerpt from his eloquent book, *Song for the Blue Ocean—Encounters Along the World's Coasts and Beneath the Seas*, seabird scientist Dr. Carl Safina writes philosophically about the "connective, unifying power of the oceans to free the human spirit."

Dr. D. James Baker, Administrator of the National Oceanic and Atmospheric Administration (NOAA), describes the special activities that NOAA is coordinating as lead agency implementing U.S. participation in Year of the Ocean. Actor Ted Danson dons his activist hat as president and co-founder of American Oceans Campaign, and gives readers practical advice on ways we can help protect the ocean. For an international perspective, Don Alcock introduces us to management strategies at Australia's Great Barrier Reef Marine Park, one of the world's most spectacular and healthiest coral reefs.

The ocean has many uses, powers, pleasures and mysteries. We asked a wide range of people to tell us what they think people should be focusing on during this Year of the Ocean. Their varied responses are displayed on pages 12 and 13.

Cover Photo:
©1994 Bob Talbot,
Forest in the Sea.
For further
information about
this and other Talbot
photographs seen
throughout this issue,
please see page 4.

Why We Need a “Sea Ethic”

By Carl Safina

Editor’s Note: The following article was adapted from Carl Safina’s recent book, *Song for the Blue Ocean—Encounters Along the World’s Coasts and Beneath the Seas* (1998, Henry Holt & Co., N.Y.).

Today many people are sensing that the seas need protection and that people who rely on the seas need decisive action. In many ways the 1990s emerged as the decade when people finally began discovering the oceans. In 1995, *National Geographic’s* ten million subscribers worldwide read about the imperiled state of the world’s seas. *Time* magazine’s October 1996 international edition featured corals and fishes on its cover, as well as 12 pages of articles to go with the cover headline, “Global Agenda—Treasures of the Seas—We’ve plundered the oceans’ gifts. Can we now protect them?”

Good question. A better one would be, “Will we choose to?” And perhaps we can help answer that by posing another question: “What if we don’t?”

It has been said that the economy is a wholly owned subsidiary of the environment. Certainly, the salmon fishers in the Northwest know this—and *live* it. The reef fishers in Palau and Sulu and elsewhere are struggling to bring their life into line with this realization as they strive to protect and restore their corals, their economy, their sense of place, their future. When people speak of “saving the oceans,” then, I offer this: We need the seas more than they need us.

But something else is needed in addition to a better understanding of services provided. People will seldom protect things having no perceived economic value, but people sometimes display an active unwillingness to protect even things *with* economic value. What values, then, *do* we really have? What values do we really need?

Today many typical people who do not particularly think of themselves as active conservationists or environmentalists apply the notion of “live and let live” to most species. Even if human use of species is deemed desirable, extermination is generally held unacceptable. Thus many people implicitly include nonhuman life in an unstated sense of extended community. They would not question a hawk’s place in the sky, nor ask what good is a gazelle, nor wonder whether the world really needs wild orchids. Without stating it, they intuitively acknowledge other species’ uncontested right to struggle for existence in life’s harsh fabric.

Yet when told of the plight of, say, sharks, many of these same people still think it quite reasonable to inquire, “What good are they? why do we need them?”

In the 1940s, a forester named Aldo Leopold wrote of a “search for a durable scale of values.” He called for extending our sense of community responsibilities beyond isolated humanity to encompass the whole living landscape, and he called this extension the “land ethic.” Why? If for no other reason, to maintain a place for humanity. Such a notion was revolutionary at the time, but it has since become the core of conservation and environmental thought. Leopold loved to hunt and fish and use wood, but he sensed one inflection point: An action is right when it tends to preserve the integrity, stability, and beauty of a living community, and wrong when it tends to do otherwise. In other words, rightness lies in recognizing “enough,” so that the future may be safeguarded.

What good, then, are sharks? Let’s put all question of uses, products, and ecological significance aside for a moment. Perhaps we *most* need sharks—and seaweeds, sea stars, sea slugs, squid, salmon, swordfish, seabirds, and singing cetaceans—to test our ability *to* differentiate between right and wrong. If this answer seems silly, if refusing to answer the question of the value of sea creatures from an immediately utilitarian perspective—just one time—rings hollow, compare it to our unquestioning acceptance of the rightness of songbirds or elephants. The difference arises not because wet animals have lesser attributes than dry ones. Rather it is because we have yet to extend our sense of community below the high-tide line. Many still view the ocean as the blank space between continents.

We now need a “sea ethic.”

Some will dismiss talk of ethics as too emotional, too

Continued on page 4



Blue sharks are common in the offshore waters of the Sanctuary.

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Sea Ethic

Continued from page 3

much a luxury in pragmatic times. I answer that cynicism, apathy, and greed are in fact undiluted and unquenched emotions, far less rational and thoughtful than ethics, and certainly less nourishing. They are counter-productive selfish indulgences we truly can no longer afford.

A teacher with fresh vision once offered me the thought that fishes help connect the world because the waters they swim in wash on all shores. Such an expansive thought, helping as it does to gather the world together in our minds, does not require viewing the sea's inhabitants in unscientific terms. Recognizing our inter-relatedness does not imply notions of some unreal ocean utopia wherein all creatures swim at peace. No lions need lie down with lambs; mako sharks are welcome to attempt to bite swordfish in half, and swordfish may defend themselves violently. We can respect—we *need* finally to respect—the *reality* of the living oceans.

And it is a gentle and pleasant paradox that contemplating the connective, unifying power of the oceans can actually free our spirit. Simply by offering the sea's creatures membership in our own extended family of life we can broaden ourselves without simplifying or patronizing them. With such a mental gesture—merely a new self-concept—we may complete the approach to living on Earth that began with the land ethic. Just as the land ethic grew into the conservation and environmental consciousness of the late twentieth century, the sea ethic will logically expand our view of wildlife and its values throughout the oceans.

So to embrace a sea ethic we need not idealize or distort the ocean's creatures. Indeed, up to now our view of the sea's living inhabitants can hardly have been more distorted. Instead, we have the opportunity to see them fully for the first time, as wild animals in their habitats, confronted with needs and dangers, equipped by evolution with the capacity and drive to manage and adapt and survive. The only prerequisites for taking this path are respectfulness and an extravagant desire for exploration—both impulses that build an elevated sense of vitality and purpose. The promise: that any honest inquiry into the reality of nature also yields insights about ourselves and the dramatic context of the human spirit.

For each of us, then, the challenge and opportunity is to cherish all life as the gift it is, envision it whole, seek to know it truly, and undertake—with our minds, hearts, and hands—to restore its abundance. It is said that where there's life there's hope, and so no place can inspire us with more



Orca whales are found in all oceans of the world.

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hopefulness than the great, life-making sea—that singular, wondrous ocean covering the blue planet.

1998 has been designated by the United Nations as International Year of the Ocean. Let's take this opportunity to develop in ourselves and our communities a Sea Ethic that guides us to take care of the ocean as it takes care of us.

Dr. Carl Safina has been close to the sea all his life, as a fisherman and seabird scientist. He has served on the Mid-Atlantic Fisheries Management Council, the Smithsonian Institution's Ocean Planet advisory board and the World Conservation Union's Shark Specialist Group. He is director of the National Audubon Society's Living Oceans Program and a lecturer at Yale University.

Photographs in This Issue

This issue's cover photo, and several other photographs elsewhere in this issue, were taken by distinguished photographer Bob Talbot, who has been photographing whales and dolphins in their natural habitat for over 20 years. We are honored to publish Talbot's photographs, not only because his images are world-class, but also because through his work Talbot wants to "encourage people to protect the animals with whom we share the planet." Talbot's motion picture footage has appeared in many TV and film productions, including wildlife sequences in the feature films *Free Willy* and *Flipper*. Talbot recently completed work as director and cinematographer of *Dolphins—The Ride*, an Imax® Ridefilm.

For more information on Bob Talbot photographs or posters, contact Talbot Productions, P.O. Box 3126, Rancho Palos Verdes, CA 90274. Phone: (310) 732-4215. E-mail: talbotfilms@earthlink.net Or visit Talbot's web site at <http://www.talbotcollection.com>

What You Can Do to Protect the Oceans

By Ted Danson, President, American Oceans Campaign

In 1987, after going to the beach with my daughters and finding it closed due to high levels of pollutants in the water, I was inspired to take action on behalf of the oceans. Soon after, I co-founded American Oceans Campaign (AOC), an organization dedicated to protecting and restoring the vitality of our oceans and coastal waters.

AOC works on a number of fronts. In addition to conducting numerous education campaigns, we are working to ensure passage of the BEACH Bill, which will establish a comprehensive national program to protect beachgoers from the potential health risks associated with swimming and surfing in polluted waters. AOC also is committed to ensuring the health of our nation's fisheries. We coordinate an online communication network which helps members of the conservation, fishing, and scientific communities to collaborate on effective implementation of fishery conservation laws. In partnership with NOAA's National Marine Sanctuary Program and the Reef Environmental Education Foundation, we also coordinate the Great American Fish Count, a yearly event which helps to document fish diversity and population trends.

An essential message of our education campaigns is that protecting the oceans starts with each of us. Here are some things you can do to protect the oceans:

Conserve water: Water used in homes eventually ends up in streams, rivers and the ocean. By turning off the tap when you are brushing your teeth, and running the dishwasher or washing machine only when they are full, you'll reduce the flow of potentially polluted material to waterways.

Watch what you put on your lawn: When it rains or snows, pesticides and fertilizers applied to your lawn or garden can run off into storm drains that lead to waterways. Use these products sparingly or try natural methods such as composting. To reduce your lawn's need for pesticides and fertilizers, plant native grasses that flourish in your climate, water deeply but less frequently, and use a mulching mower or set your lawnmower blade above two inches.

Properly dispose of household chemicals: Do not dispose of unwanted household cleaners by pouring them down the drain. Sewage treatment plants are not equipped to remove toxins, so they are released into nearby waterways. Contact your local department of environmental quality for an approved disposal site in your neighborhood. Consider using less toxic alternatives to household



Ted Danson

cleaners; for instance, undiluted white vinegar can be used as a substitute for ammonia-based cleaners.

Recycle used motor oil: Never dump used motor oil down storm drains. It can be recycled and used again and again, thereby reducing water pollution. Also repair any oil leaks from your car. California residents can call 1-800-CLEANUP for the nearest location of a used motor oil collection center.

Volunteer: Spend time helping out at a local conservation group or marine sanctuary. Participate in an organized beach clean-up day or coordinate one of your own. (See below for a list of organizations seeking volunteers.)

Voice your opinion: Contact your legislators and urge them to support strong environmental laws. Attend local planning and zoning board meetings and urge officials to protect coastal areas.

If we all take these simple actions in our everyday life, we can preserve the beauty, vitality and abundance of the marine environment. The fate of the oceans is in our hands—let's work together to ensure its protection for future generations.

Get Involved!

The following marine conservation organizations need volunteers.

American Oceans Campaign (310) 576-6162

Audobon Society (805) 964-1468

Channel Islands National Marine Sanctuary
(805) 966-7107

Heal the Bay (310) 581-4188

Ocean Discovery Center (310) 393-6149

Santa Barbara Channel Aquarium (805) 962-8404

Santa Barbara Wildlife Care Network (805) 966-0023

Surfrider Foundation (805) 464-3232

Whale Corps (at Santa Barbara Museum of
Natural History) (805) 682-4711 ext. 288

YOTO Things to Do

Land and Underwater Photography Workshop

From September 24-27, CINMS and the Santa Barbara Museum of Natural History will cosponsor a land and underwater photography/video workshop with professional photographer Tom Campbell aboard the Vision dive vessel. Twenty-five workshop participants will "hunt" with their cameras to capture the beauty of Sanctuary marine life and Island flora and fauna on film. During last year's workshop, paper nautilus shells were found, indicating warm water conditions associated with El Niño. For more information, call (805) 963-1067.

New Aquarium of the Pacific

Saturday, June 20 is the grand opening of the Long Beach Aquarium of the Pacific, the only U.S. facility devoted to the study of the entire Pacific Ocean. The new Aquarium is massive: more than three football fields can fit inside its 156,735 square feet. On a journey through the Pacific Ocean's three main regions, visitors will be able to observe 10,000 ocean animals representing 550 species. In addition to living exhibit tanks, the Aquarium will feature an interactive Kids' Cove, a teacher resource center, classes, a restaurant and gift shop. For more information, call (562) 437-FISH.

The International Year of the Ocean

By D. James Baker

The United Nations-designated International Year of the Ocean represents a golden opportunity for the United States to highlight the importance of the oceans. More than half of the U.S. population lives within 50 miles of the coast, and 40 percent of new commercial development in recent years has occurred near the coast. About 95 percent of U.S. foreign trade passes through our ports and harbors, and one out of every six jobs in the U.S. is marine-related. One-third of our gross domestic product is produced in coastal areas through fishing, transportation, recreation and related industries.

We must use our marine resources sustainably. Declines in the nation's fisheries stocks and the recent outbreak of *Pfiesteria* in the Chesapeake Bay remind us of the vulnerability of the ocean's inhabitants. Shifts in weather patterns associated with El Niño are also forceful reminders of the ocean's powerful influence on weather and climate. Our ability to understand the ocean and wisely manage its resources is clearly vital to the nation's interests.

As the lead agency implementing U.S. participation in Year of the Ocean, NOAA is developing partnerships and coordinating efforts among ocean-oriented federal agencies, non-governmental agencies, academics and industry. NOAA and other groups are also organizing numerous Year of the Ocean (YOTO) activities. Following are the highlights:

The Ocean Principals Group: NOAA has reconvened the interagency Ocean Principals Group (OPG), a consortium of ocean-oriented federal agencies. The OPG's mission is to: (1) promote public awareness and understanding of the value of the ocean and the Great Lakes; (2) ensure that the Federal government does all it can and should do to foster ocean exploration, sustainable use, and conservation; and (3) work with stakeholders to make all of this happen.

Workshops: To ensure broad stakeholder input into the OPG's discussions, NOAA co-sponsored three ocean workshops with the H. John Heinz Center for Science, Economics and the Environment: (1) Ocean Science and Technology (Feb. 6-7, 1998, in Irvine, Calif.); (2) the Challenge of Sustainable Coasts (Feb. 11-12, 1998, in Charleston, S.C.); and (3) Restoring Fisheries and Conserving Marine Living Resources (March 3-4, 1998, in Washington, DC).

National Conference: On June 11 and 12, the Department of Commerce and the U.S. Navy will cohost a *National Conference on the Ocean* in Monterey, Calif., home to the nation's largest National Marine Sanctuary, which will draw nationwide attention to the oceans and help identify critical needs and promising areas for future research, cooperative action and policy development. The



Pelican silhouettes in the setting sun.

© 1990 Bob Tailbot

conference will include other federal agencies, ocean scientists and researchers, members of Congress and representatives of state and local governments, and industry and interested ocean groups.

Special National Marine Sanctuary Events: In February, NOAA celebrated the dedication of the Hawaiian Islands Humpback Whale National Marine Sanctuary as a special YOTO event. In March, NOAA contributed scientists, dive teams, technical support and research ships to JASON Project IX, *The Oceans of the World and Beyond*, a unique educational program which provides students with hands-on ocean exploration and research opportunities. (For more on the JASON Project, see *Sanctuary Waves*, page 11.)

Earth Day: In April, NOAA celebrated Earth Day by focusing on ocean conservation. A variety of activities around the country helped people learn how their own actions affect the ocean and what steps they can take to help conserve marine resources. In the Santa Barbara area, on April 19, CINMS and members of the Marine Educators' Regional Alliance staffed informational booths at a community Earth Day Festival at De La Guerra Plaza.

International World Expo, Lisbon, Portugal: From May through September, an International World Expo will be held in Lisbon, where many nations will host pavilions featuring their special relationship with the sea over the centuries past, present and future.

As we celebrate this International Year of the Ocean, I invite all of you to become involved in the special events that NOAA and others are planning. This is an invaluable opportunity to raise public awareness about the role of the ocean in our daily lives and the need to protect our marine resources.

As Administrator of NOAA, D. James Baker is responsible for the National Weather Service; the National Environmental Satellite, Data, and Information Service; the National Marine Fisheries Service; the National Ocean Service; and NOAA's Office of Oceanic and Atmospheric Research.

International Year of the Ocean (YOTO) Resources

NOAA's official Year of the Ocean website:
<http://www.YOTO.com>

YOTO Toll-Free Information Hot Line:
1-888-4-YOTO-98

The site provides daily news, information and multimedia on Year of the Ocean events and a variety of ocean-related topics including government, recreation, entertainment, coastal living, conservation, education, fisheries, maritime and energy.

An additional Year of the Ocean website, which is geared to reporters, educators, teachers and students, can be found within NOAA's web page:

<http://www.yoto98.noaa.gov>

For a list of YOTO activities and events by state, go to:

<http://www.yoto98.noaa.gov/neighb.htm>

The Oceans Principals Group (OPG) has published a series of 15 fact sheets on a wide range of ocean-related topics. To download texts of these fact sheets, go to:

<http://www.yoto98.noaa.gov/factshee.htm>

For special games, coloring books, fun activities, fact sheets, and other resources for children, go to:

<http://www.yoto98.noaa.gov/kids.htm>

The United Nations' official YOTO website, which includes an international YOTO Discussion Forum, news releases, listings of international activities and events, educational materials and access to free YOTO products, can be found at:

<http://www.ioc.unesco.org/iyo>

For information on ocean-related research and training cruises, go to:

<http://www.ioc.unesco.org/iyo/activities/cruises.htm>

MMS Joins YOTO Efforts

The Minerals Management Service (MMS) Pacific Region joins NOAA in celebrating the International Year of the Ocean. As resource manager of the federal submerged lands offshore California, MMS will continue to foster cooperative efforts with its stakeholders to sustain development of our natural resources in a manner that ensures the protection of the coastal, marine, and human environments.

—Dr. J. Lisle Reed, Regional Director,
Minerals Management Service, Pacific Region

Local Heroes

Congratulations to **Dave Long, Aquarium Advisor at Cabrillo High School**, and **Mark Connally, President of Island Packers**, winners of NOAA's 1998 Environmental Hero Award. Both of these dedicated individuals direct unique marine education projects.

The **Cabrillo High School Aquarium**, Lompoc, CA, integrates the marine environment into all academic disciplines, while also educating the community at large about the need for marine conservation. The Aquarium was conceived by Dave Long, an English and P.E. teacher and former wrestling and football coach.

With a staff of educators and naturalists, **Island Packers** takes about 10,000 student visitors annually to the Channel Islands National Park and Marine Sanctuary, stressing education as a means to preserve and protect these precious islands and richly diverse ecosystems.

Alolkoy Year of the O

May

May- September International Year of the Ocean World Expo. Lisbon, Portugal. <http://www.expo98.pt>
Email: info@expo98.pt

May 9 10th Annual Santa Barbara Harbor Festival. Santa Barbara Yacht Harbor, Santa Barbara, CA. 10 a.m. to 6 p.m.

May 15-17 SEASPACE Dive Show. Houston, TX.
<http://www.seaspace.ycg.org/>

May 18-22 Stellwagen Bank National Marine Sanctuary MIMI Fest. Activities for students aboard the 2-masted sailing ketch, MIMI. Call 508-747-1691 for more information.

May 21, 28 Fish Identification Seminars for the Great American Fish Count. UCSB Environmental Health and Safety Classroom, Santa Barbara, CA. 6-10 p.m. Call Dennis Divins at 805-893-4559 for more information.**

May 29 Santa Barbara Channel Aquarium Gala Event with Guest Speaker Dr. Sylvia Earle, Santa Barbara, CA. Call 805-962-2298 for more information.

June

June 3 Fish Identification Seminar for the Great American Fish Count, Tampa Aquarium, Tampa, FL. 6-9 p.m.. Call John Pitcairn at 813-991-5903 for more information.**

June 7-12 The Land-Water Interface: Science for a Sustainable Biosphere, St. Louis, MO. This joint meeting of the American Society of Limnology and Oceanography and the Ecological Society of America (ESA) will focus on key research at the land-water

interface of both freshwater and saltwater systems, with the goal of strengthening connections between research and management. Contact Gabriel Paal, ESA at 202-416-6181.

June 10 Fish Identification Seminar for the Great American Fish Count, John Pennekamp Coral Reef State Park, Key Largo, FL. 7-9 pm. Call Deena Wells 305-451-0312 for more information.**

June 11-12 National Oceans Conference, Monterey, CA. The Department of Commerce and the U.S. Navy will co-host this event that will include other federal agencies, ocean scientists, researchers, and legislators. The conference was conceived as a way to underscore the importance of the oceans to a vast range of vital U.S. interests, and to enhance public awareness of our nation's dependence on the ocean. Contact Lori Arguelles, NOAA at 202-482-5647.

June 11-14 3rd Annual Clean Oceans Conference, Maui, HI. The theme of this conference is the International Year of the Ocean, and focuses on Sustainable Fisheries through use of marine protected areas, improved ocean resources management, and local community involvement. Email sos@aloha.net for more information.

June 16 Fish Identification Seminar for the Great American Fish Count. Patagonia store, La Arcada Court, 1118 State Street, Santa Barbara, CA. 6:30-9:30 p.m. **

June 19 Fish Identification Seminar for the Great American Fish Count. Pacific Grove Natural History Museum, Pacific Grove, CA. 7-9 p.m. Contact Kip Evans at 408-647-4217 for more information.**

June 20 Grand Opening of Long Beach Aquarium of the Pacific, Long Beach, CA. For more information call 562-437-FISH.

June 26-28 SCUBA '98 Dive Show. Long Beach, CA. Call 310-792-2333 for more information.

June 29, July 3 Fish Identification Seminars for the Great American Fish Count. Long Beach Aquarium of the Pacific, Long Beach, CA. 7-9 p.m. Call Suzie Exner at 562-951-1621 for more information. **





July

July 2, 10 Fish Identification Seminars for the Great American Fish Count held throughout Florida. Call Deena Wells at 305-451-0312 for more information.**

July 1-14 Participate in the Great American Fish Count. Call 800-8ocean0 or email GAFC@yahoo.com for more information.

July 11-19 National Clean Boating Week. Contact Carrie Katsumata at 213-266-7566 for more information.

July 12-15 Coastal Society 16th Annual Meeting. Williamsburg, VA. Minding the Coast: It's Everybody's Business. Contact Maurice Lynch at 804-684-7151 for more information.

July 31 Florida Keys National Marine Sanctuary Celebration. Call 305-852-7717 for more information.

August

August 3-7 National Marine Educators Association 22nd Annual Conference. Humacao, Puerto Rico. Call 787-834-4726 for more information.

August 15-16 Border's Book Store Year of the Ocean Event. Waikē, HI. Sponsored by the Hawaiian Islands Humpback Whale National Marine Sanctuary with marine artist and authors. Contact Carol Carey at 800-831-4888 for times and information.

August 28-30 "Youth Celebrating the Year of the Ocean" Victoria, British Columbia. For more information email Beth Bornhold at czcyc98@eos.ubc.ca

September

September 4-8 North American Association for Environmental Education 27th Annual Conference. Atlanta Georgia. Call 937-676-2514 for more information.

September 11 Santa Barbara Underwater Film Festival presents Hans and Lotte Hass, Ernest Brooks II, Al Giddings, Zale Parry and Stan Waterman. Arlington Theater, Santa Barbara, CA. 7 p.m. Tickets \$20, \$25 and \$50. Call 805-963-4408 for ticket reservations.

September 19 International Coastal Cleanup Day. Contact 800-Coast4U for information.

September 22-28 Sea Life Week. Bali, Tulamben Bay, Indonesia. <http://www.mimpi.com>

September 24-27 Channel Islands National Marine Sanctuary/Sea Center Annual Photo Workshop with Professional Photographer Tom Campbell aboard the Dive Vessel *Vision*, Santa Barbara, CA. Call 805-963-1067 for more information.

October

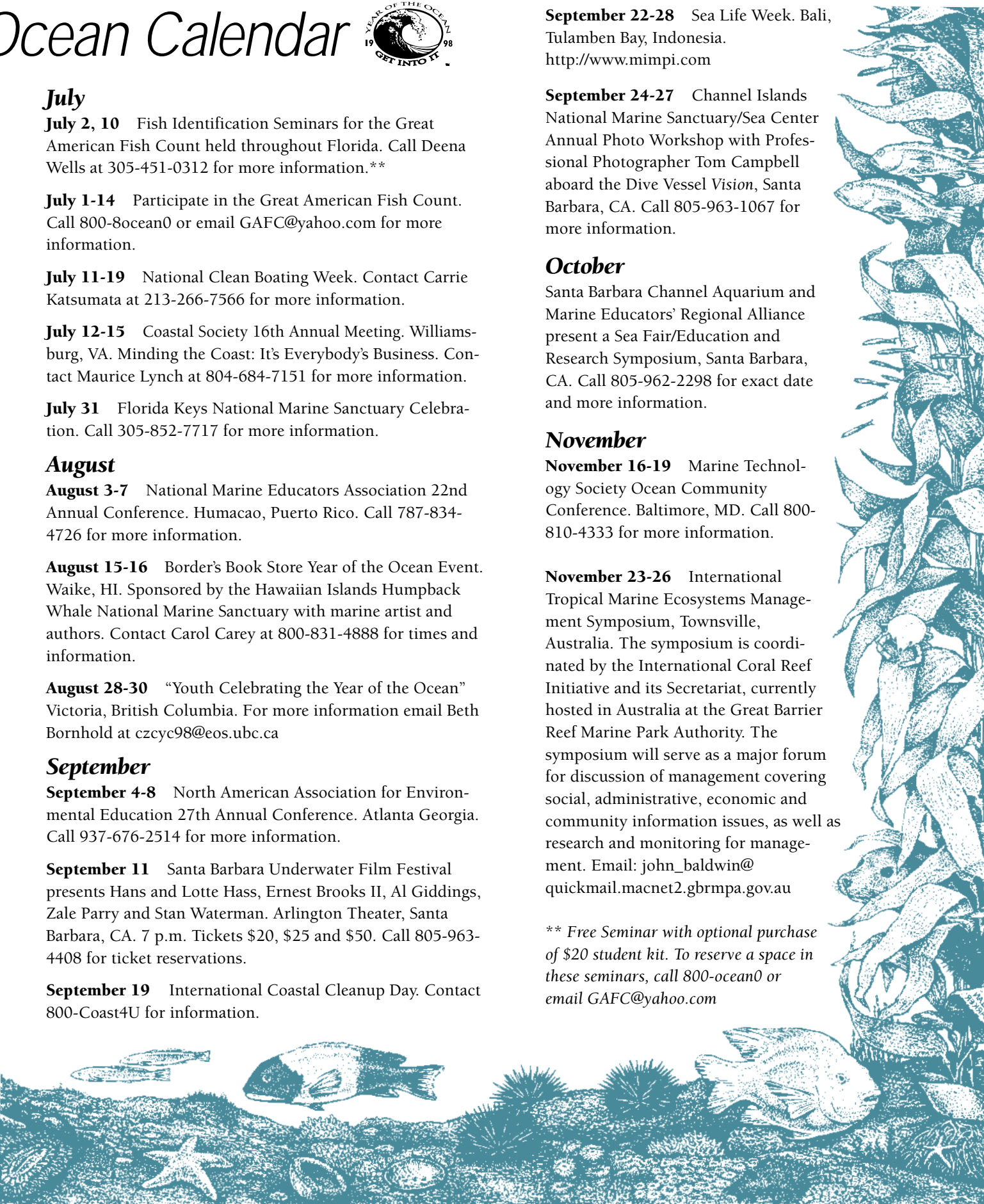
Santa Barbara Channel Aquarium and Marine Educators' Regional Alliance present a Sea Fair/Education and Research Symposium, Santa Barbara, CA. Call 805-962-2298 for exact date and more information.

November

November 16-19 Marine Technology Society Ocean Community Conference. Baltimore, MD. Call 800-810-4333 for more information.

November 23-26 International Tropical Marine Ecosystems Management Symposium, Townsville, Australia. The symposium is coordinated by the International Coral Reef Initiative and its Secretariat, currently hosted in Australia at the Great Barrier Reef Marine Park Authority. The symposium will serve as a major forum for discussion of management covering social, administrative, economic and community information issues, as well as research and monitoring for management. Email: john_baldwin@quickmail.macnet2.gbrmpa.gov.au

*** Free Seminar with optional purchase of \$20 student kit. To reserve a space in these seminars, call 800-ocean0 or email GAFC@yahoo.com*



Great Barrier Reef: A Beacon of Hope

By Don Alcock

The world's coral reefs, especially those near shallow coasts and dense populations, are in serious decline. Damaged or destroyed coral reefs can be found in more than 93 countries, with reefs in Southeast Asia, East Africa and the Caribbean seemingly at the greatest risk. By contrast, Australia's prized asset, the Great Barrier Reef, remains relatively healthy and is fast becoming a beacon of hope for coral reefs around the world.

Under the management of the Great Barrier Reef Marine Park Authority (GBRMPA), this huge reef system—more than 350,000 square kilometers along the north Queensland coast—attracts more than 1.5 million visitors annually and sustains a \$250 million fishing industry and, at six times the size, a \$1.5 billion tourism market. In many ways, the Great Barrier Reef (GBR) World Heritage Area, comparable in size to half of Texas, maintains itself well. Most of its 3,000 or so individual reef structures are considerable distances offshore and not easily accessible (it takes one to two hours to reach them by boat). The mainland population, mostly in towns adjacent to the Reef's southern half, is relatively small. Moreover, the Reef is continually flushed by major ocean currents and buffeted by strong winds. For these reasons, the Reef has built-in protection from over-exploitation of its rich resources.

Australia's coral reef scientists and managers enjoy an enviable reputation as world leaders in marine research, education and protected area management. From the creation in the 1970s of the world's largest multiple-use marine park to the development in the 1990s of the vision-

ary 25-year Strategic Plan for the Great Barrier Reef World Heritage Area, Australia has pioneered balanced, innovative policies for the Reef region's conservation and sustainable use.

Since 1975, the GBRMPA has pioneered multiple-use zoning for marine protected areas, separating potentially conflicting activities such as tourism and commercial fishing. Through extensive public consultation with users and interest groups, the Authority developed regional zoning plans which now form the basis for local management plans on reefs and around islands.

The 25-Year Strategic Plan for the GBR was a milestone in integrated planning. In a joint decision-making process, federal, state and local governments collaborated with Aboriginal and Torres Strait Islanders, the tourism industry, commercial and recreational fishing interests, conservationists and scientists to produce a shared vision and set of 5-year objectives. The plan is helping address the serious matters of reef-related food production, jobs, recreation, cultural heritage and the conservation of the GBR.

Here in Australia, as we embark on International Year of the Ocean, scientists, managers and industry groups are facing up to our own challenge to keep the Barrier Reef "great" on behalf of future generations. Even with the Marine Park Authority's monitoring program, its requirement for marine park permits and fishing licenses as well as other government controls, parts of the Reef remain threatened by natural and human forces.

As reef planners, our main task is to fairly allocate uses among increasingly competitive sectors, while also sustain-

ing the region's rich natural resources. We are continually tested to think up innovative policies. Multi-disciplinary marine science is being called on to provide timely information for better planning decisions. But in the end our best management strategy is public education and support. As Abraham Lincoln once said: "With public sentiment nothing can fail; without it, nothing can succeed."

Don Alcock is communication and extension program leader for the Great Barrier Reef Research Centre based in Townsville, Queensland. Previously, he was manager for eight years of GBRMPA's education branch.



Low Isles coral cay, Great Barrier Reef, Australia.

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El Niño Research Update

By Matt Pickett

Research at CINMS continues to track and study effects and potential impacts of this winter's El Niño storms:

Kelp Mapping Study: Last fall, loaded with state-of-the-art cameras, computers, and satellite positioning equipment, a NOAA research jet flew high over the Channel Islands to take precise, high resolution photographs of the Sanctuary's kelp forests. After digitally processing these, we plan, in the fall, to take a set of post-El Niño images. By comparing these two sets of images, the Sanctuary hopes to quantify damage to the forests from both warm water and storms brought by El Niño.

Plumes and Blooms: Researchers from UCSB have been working in partnership with CINMS to determine the impacts on the marine environment of El Niño storm runoff in the Santa Barbara Channel and Sanctuary waters. The study is part of an ongoing UCSB study known as *Plumes and Blooms: Studying the Color of the Santa Barbara Channel*. During February, El Niño-generated storms resulted in nearly two-thirds of the Santa Barbara Channel being inundated with freshwater, terrestrial sediments, agricultural runoff, and other debris. The runoff creates a visible pattern of nutrient-rich brown sediment plumes which, in turn, produce green marine algal blooms. Utilizing the sanctuary's research aircraft NOAA

64 and the Research Vessel *Ballena* in combination with satellite imagery, scientists are studying the size and effects of various river plumes. The plume visible in early February reached all the way to Anacapa, Santa Cruz and Santa Rosa islands. The researchers are working to verify data collected by the SeaWiFS (Sea-Viewing Wide-Field-of-View-Sensor) satellite. Built by Raytheon Remote Sensing in Santa Barbara, the SeaWiFS is an ocean color imaging sensor consisting of an eight-channel, visible near-infrared scanning radiometer. The device collects full global images of the Earth's ocean every 48 hours. SeaWiFS data will indicate the levels of phytoplankton and chlorophyll in the oceans, surface currents and various atmospheric aerosols above the water.

Aerial Survey Program: Survey flights are being conducted weekly (weather permitting) to collect data on marine mammal distribution and abundance. Researchers hope to use the data to determine any changes in the marine mammal population as a result of this year's El Niño. Data on vessel traffic in the Channel are also being collected to determine use patterns in the Sanctuary.

LCDR Matthew Pickett is pilot of the joint patrol aircraft shared by CINMS and the Monterey Bay National Marine Sanctuary.

Sanctuary Waves

Week of the Whale

CINMS, the Santa Barbara Museum of Natural History (SBMNH) and the Santa Barbara Beachside Business Association celebrated the northbound migration of the Gray whales with an evening kickoff reception and 4th annual Whale Festival in early February. The festival was followed by a "Week of the Whale" celebration on the grounds of SBMNH, which included a whale discovery center and whale natural history films presented by local filmmakers.

JASON Project

During March, CINMS partnered with the Monterey Bay National Marine Sanctuary to oversee dive operations for the JASON Project IX: *Oceans of the World and Beyond*, an international educational program on the oceans which was broadcast to more than 10 million schoolchildren worldwide. For two weeks, the JASON Project broadcast seven hours of educational programming six days a week to 23 primary sites and over 100 additional sites and classrooms. The Sanctuary's R/V *Ballena* served as a diving platform for scientists who described in live broadcasts the importance of kelp forest habitats. This year's JASON project was a part-

nership of NOAA, the JASON Foundation and EDS Corp., representing a unique public, private and nonprofit alliance to bring this interactive educational opportunity to classrooms nationwide.

Santa Barbara Channel Aquarium

CINMS Manager Ed Cassano is participating in monthly meetings of the Science and Education Advisory Panel for the proposed Santa Barbara Channel Aquarium. The group is developing an educational vision statement, teacher questionnaire, and identifying how the Aquarium will support and enhance existing marine educational programs in the community.

Weather Kiosk

CINMS is collaborating with the National Weather Service (NWS) and RAIN, a local nonprofit Internet Service Provider, to develop a prototype Weather Kiosk at Santa Barbara Harbor's fuel pier. The Kiosk will provide local mariners with access to up-to-date computerized weather information in a visual format. Weather data would be visible on a color computer terminal, and could be downloaded onto a diskette or printed out. The details of the Kiosk Project were defined at a January planning workshop hosted by the Sanctuary and attended by local commercial fishermen, boat owners, and representatives from NWS and RAIN.

"See the Ocean, Listen to the Ocean, Be in t

"Never before have responsible fishing practices been so important given that the demand for seafood isn't going down and that our renewable marine resources are finite and limited. This doesn't mean that we should take an apocalyptic view toward consumptive uses of the sea, but it means that all proponents of extractive uses, whether it's sport fishermen, commercial fishermen, or oil companies, should be more cognizant than ever of the need for rigorous conservation-oriented management."
—Mick Kronman, *Fisheries consultant; Pacific Bureau Chief, National Fisherman magazine*

"The ocean is important to me because there are so many ways to enjoy it. The most magical thing about the ocean is the dolphins, because they're intelligent and they're fun to be around. If everybody learned about the ocean, they would help protect it and protect the animals."
—Luis Rico, *Fifth grader, Roosevelt School, Santa Barbara, CA*

"The more we learn about the ocean, the better prepared we will be to protect it."
—F. Brian Rapp, *Director, Santa Barbara Museum of Natural History*

"The reason the ocean is special to me is because I get to see all the wonderful creatures that live in it."
—Christina Taylor, *Fifth grader, Roosevelt School, Santa Barbara, CA*

"Ocean policy is now being made without the benefit of knowing much about what is beneath the surface of the ocean, especially below the depths of where divers usually go, typically 100 ft. This year—The United Nations-designated International Year of the Ocean—special efforts are being initiated to develop new policies to protect healthy areas and restore damaged systems. It is critical that we work to develop an informed and motivated citizenry who understand the nature of the ocean from the standpoint of the creatures who live there, and through knowledge gained and awareness communicated, link the fate of humankind to the state of the ocean."
—Dr. Sylvia Earle, *National Geographic Explorer in Residence, Chairperson Deep Ocean Exploration and Research.*

"Did you know that the ocean controls the weather patterns? As a matter of fact, it causes the El Niño. Without the ocean we wouldn't have the unique wildlife that lives there. People should know that there is lots of trash in the ocean that could hurt animals. So pick up trash when you see it and don't litter!"
—Juli Lippire, *Fifth grader, Roosevelt School, Santa Barbara, CA*

"I think people should know that the ocean covers about 75% of the earth's mass and it holds a lot of our food."
—Matthew Navarro, *Fifth grader, Roosevelt School, Santa Barbara, CA*



Pacific Wind.

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The Ocean and You Cannot Help But Care...

Alex Chadwick



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Humpback tail at sunset. "Twilight Tail."

"The Year of the Ocean is a chance to celebrate the magic of the sea. But it is also an opportunity to focus attention on its health. Despite many international treaties, the ocean remains the dumping ground for land-based human activities. Partly this is due to geography and gravity, but mostly it is due to ignorance, indifference and short-sighted self-interest on the part of the human species. With our numbers increasing, our impacts on the sea increase. Industrial and agricultural runoff impoverish the coastal zone, overfishing and bycatch deplete fish populations, and global warming appears to have a negative effect on coral reefs. Scientists have observed declines in primary productivity and biodiversity, which could ultimately send a chain reaction of extinctions throughout the food web. All changes in the ocean realm affect us profoundly. During the Year of the Ocean and beyond, the Jean-Michel Cousteau Institute will be participating in the worldwide effort to understand the complex links between humanity and the sea, and through dialogue, helping to move toward creative solutions to the most pressing environmental challenges. Like any natural resource, the ocean has its limits. As an inspiration to the human imagination, it is limitless."

—Jean-Michel Cousteau, underwater explorer and environmentalist

"The most important thing any of us can do for the oceans is simply to take people there. The power and grandeur of the ocean is simply overwhelming, which we can witness again and again, among people from every place and at every age. The ocean is its own best advocate, and it is only when we forget our love for it that we begin to treat it as a waste dump, or simply a place to take from, rather than take care of. See the ocean, listen to the ocean, be in the ocean, and you cannot help but care about what happens to it."

—Alex Chadwick, environmental reporter,
National Public Radio

"The emergence of marine ecology as a form of environmental activism has made the Year of the Ocean a political milestone."

—Chris Miller, *Commercial Lobster Fisherman, Santa Cruz Island*

"The ocean has great spiritual and survival significance for the Chumash people. Since the beginning of time, the Chumash lived near the ocean and relied on the abundance of fish and shellfish. In our oral tradition, there is a correlation between the sea animals and the people and animals on the land. The needlefish is equivalent to the gopher snake, the sardine to the lizard, the lobster to the potato bug, the swordfish to man. The creatures of the sea have a spirit and they're just as valuable as land animals, including humans. We see the ocean as a powerful force and we treat it with great respect."

—Julie Tamamait-Stenslie, *Chumash descendant*

"The health of our ocean ecosystem depends on the inter-relationships between vast inland watersheds; bays, estuaries, and lagoons; nearshore ocean waters; and the deep, mysterious underwater world located far offshore. During this International Year of the Ocean, we should start working to develop governance systems that better respond to these inter-relationships and the impacts of increasing coastal populations on these important habitats."

—Brian E. Baird, *State of California Ocean Program Manager*

Feral Pigs Grunt for Grunion

By Dan Martin, Jessie Altstatt and Jack Engle

Many Southern Californians know about the amazing fish called grunion which will-ingly leave the sea to bury and fertilize their eggs under several inches of sand high up on the beach. For many coastal natives, the phrase *grunion run* evokes memories of balmy summer nights chasing slippery fish across a moonlit beach. Who could forget the thrill of grabbing a grunion and feeling it wriggle in your bare hands?

But humans, apparently, are not the only mammals which seek out these extraordinary creatures. As we discovered during a survey of Sanctuary beaches a few years ago, the feisty pigs of Santa Cruz Island also like to hunt them.

In 1994, UCSB's Marine Science Institute began a project to create a baseline inventory of coastal marine resources on and around the Northern Channel Islands. (The study was funded by the California Coastal Commission, with logistical support provided by the Channel Islands National Marine Sanctuary.) The data will provide baseline information on marine resources so that a more accurate damage assessment may be made in case of an oil spill. We targeted Santa Cruz Island for much of the survey work in part because oil dispersion models indicate that it is

especially vulnerable to potential oil spills in the channel.

In June of 1996 and 1997, we found grunion eggs on four of 13 Santa Cruz Island beaches: Christy, Smuggler's, Pozo and Prisoners'. During our 1996 trip, we discovered evidence suggesting that oil spills—which leave residues in beach sediments that may harm grunion embryos—may not be the only threat to grunion nurs-

ery grounds. At Prisoners' beach, we found fresh pig tracks and extensive rooting of the sand in the very zone where grunion had laid their eggs the night before.

Returning to the island a year later, we witnessed first-hand the pigs' destructive foraging behavior. Poised quietly behind a driftwood log at the edge of the beach, we waited and watched. After several hours, the grunion appeared and began to spawn. Fifteen minutes later, a pair of large swine waddled down the beach,

their snouts eagerly snapping in the surf and sand. Before the spawning run ended, the pigs had made several passes up and down the area where grunion had deposited eggs. Then the pigs trotted off into the darkness. An hour after the tide receded, the pigs returned to the same spot and began rooting through the sand, apparently gobbling



Feral pigs on Santa Cruz Island.

©A. Weimer

up fresh grunion roe with great relish.

No one is certain how pigs got to Santa Cruz Island. Local historians believe a squatter living at Prisoners' Harbor may have introduced swine there around 1852. Despite efforts to control their populations, the elusive pigs now roam freely and have become quite numerous (their numbers on the island appear to fluctuate between 1,000 and 5,000.)

Now we also have evidence that the feral pigs pose a threat to grunion reproductive efforts. Like some humans on the coastal mainland, the pigs of Santa Cruz Island apparently patrol the surf line continuously during peak spawning hours. As a result, grunion may get spooked and flee back to the safety of the waves, hampering their spawning efforts.

Oil spills remain a potential threat to grunion in the Santa Barbara Channel. But feral pigs are a fully realized one. *Run, grunion!*

Dan Martin, Jessie Altstatt and Jack Engle are biologists at the Marine Science Institute of the University of California, Santa Barbara. Jack also coordinates the Tatman Foundation's Channel Islands Research Program.



Grunion spawning.

©Shane Anderson



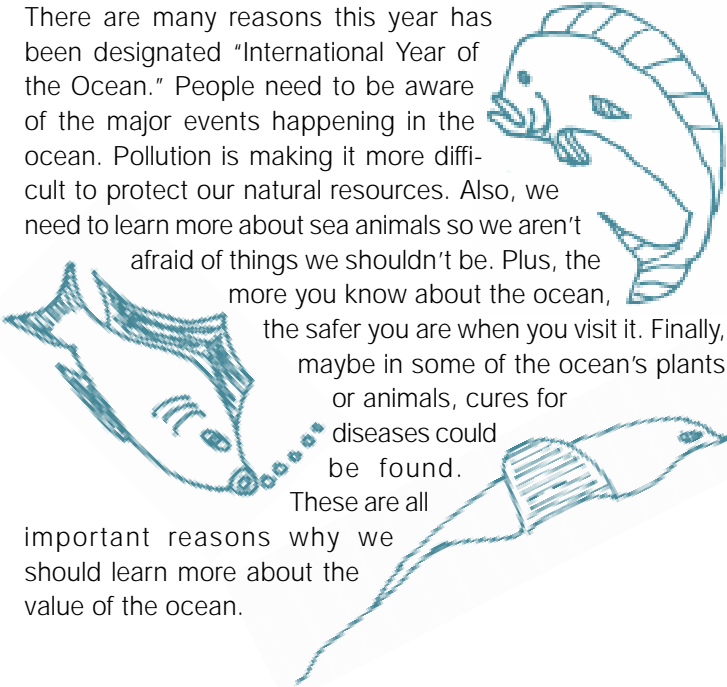
The Pod Press



Vol. 2 No. 1

The Importance of the Ocean

There are many reasons this year has been designated "International Year of the Ocean." People need to be aware of the major events happening in the ocean. Pollution is making it more difficult to protect our natural resources. Also, we need to learn more about sea animals so we aren't afraid of things we shouldn't be. Plus, the more you know about the ocean, the safer you are when you visit it. Finally, maybe in some of the ocean's plants or animals, cures for diseases could be found. These are all important reasons why we should learn more about the value of the ocean.



Word Search



Find: BEACH FISH PEOPLE
 DEBRIS OCEAN POLLUTION

Dear Crabby



Dear Crabby,
 How can kids help during Year of the Ocean?
 —A Puzzled Pal

- This is how you can get involved:
- get your friends together and do a beach clean-up
 - recycle
 - design posters about the ocean to hang up at your school
 - don't litter
 - choose an ocean topic for your school reports

If you have a question about the islands within the Sanctuary, please write to Dear Crabby at Santa Barbara Museum of Natural History, 2559 Puesta del Sol Rd., Santa Barbara, CA, 93105, or e-mail to: losmar@sbnature.org

Recipe for Fun

- What you need:*
- several old sponges
 - markers
 - paper
 - paint
 - scissors

- What you do:*
1. Design several small sea creatures (outline only) on the sheet of paper.
 2. Cut them out.
 3. Place them on the sponges and trace them with markers.
 4. Cut out the creatures from the sponges.
 5. Dip into paint and use in the paper to create ocean art!



This page was written by fifth grade students in the Los Marineros program at Roosevelt School, Santa Barbara, California.
 Contributors: Steven Carey, Luis Rico • Illustrations by: Jorge Jimenez

If you have comments, suggestions, or submissions for this page, please send them to the *Alolkoy* office, Channel Islands National Marine Sanctuary, 113 Harbor Way, Santa Barbara, CA 93109.



U. S. Department of Commerce
National Oceanic and Atmospheric Administration
Channel Islands National Marine Sanctuary
113 Harbor Way
Santa Barbara, CA 93109

Address Correction Requested

Alolkoy

Need more information?
Contact:

Channel Islands National Marine Sanctuary

113 Harbor Way
Santa Barbara, CA 93109
805/966-7107
Email: channel_islands@ocean.nos.noaa.gov
Web Page: <http://www.cinms.nos.noaa.gov>

Channel Islands National Park

1901 Spinnaker Drive
Ventura, CA 93001
805/658-5700
Web Page: www.nps.gov/chis/

Santa Barbara Museum of Natural History

2559 Puesta del Sol Road
Santa Barbara, CA 93105
805/682-4711
Web Page: www.sbnature.org

Sea Center

211 Stearns Wharf
Santa Barbara, CA 93101
805/962-0885
Web Page: www.sbnature.org/seacentr.htm

Things to Do, Places to Go

Underwater Film Festival

Eight local underwater cinematographers and photographers will be featured in the Santa Barbara Underwater Film Festival on **Friday, May 1** at 8 p.m., at UCSB's Campbell Hall. Two of the seven films to be screened have a Sanctuary focus: *Welcome Home to the Channel Islands* produced by Greg Sanders; and *The Giant Sea Bass of Anacapa Island*, produced by Brad Doane. Festival proceeds will benefit the Nejat Ezal Memorial Diving Scholarship Program. Tickets are available at all Santa Barbara dive shops.

Santa Barbara Harbor Festival

The 10th Annual Santa Barbara Harbor Festival will be held from 10 a.m. to 6 p.m. on **Saturday, May 9** at the Santa Barbara Yacht Harbor. Festival activities include an interdenominational blessing of the fleet, marine exhibits, complimentary harbor tours, visits to boats and yachts, children's games and entertainment, food, live music and a tour of the naval destroyer *USS Stethem*.

Dive into Fish Counting

Volunteer divers can prepare themselves for this July's Great American Fish Count (GAFC) by attending free Fish Identification Seminars. Seminars include a slide presentation introducing the most common southern California fish species, directions for conducting fish counts and survey forms. Student kits containing an underwater slate, underwater paper and a

t-shirt will also be available for \$20. Seminars will be held at UCSB's Environmental Health and Safety training classroom, Building 565, on **Thursday, May 21** and **Thursday, May 28**, 6-10 p.m., and at the Patagonia store, La Arcada Court, 1118 State Street, Santa Barbara on **Tuesday, June 16**, 6:30-9:30 p.m. To reserve a space in these seminars, call 1-800-8ocean0 or email GAFC@yahoo.com

Channel Aquarium Gala Event

On **May 29, 1998**, the Santa Barbara Channel Aquarium invites you to join with us and our supporters to honor both the oceans and Dr. Sylvia Earle. Dr. Earle, noted ocean scientist, explorer, educator and founding advisor to the Aquarium, and the 1998 National Geographic Society Explorer in Residence, will speak about the importance of greater community awareness of our ocean and the Santa Barbara Channel. For more information call (805) 962-2298.

