

# HEALTHY OCEANS : HEALTHY PLANET

ANNUAL REPORT 2008

# Greetings

## A MESSAGE FROM THE PRESIDENT



As this annual report is headed to press there are unprecedented global economic shifts taking place that threaten the financial stability and vitality of public and private institutions and individuals worldwide. Research organizations are no exception, and we face a daily struggle to meet our mission while tightening our belts to ride out the storm. The oceans support the world's economy in many ways – as a food source and transportation corridor, to name just two – and science has long been considered an engine for economic growth. Hubbs-SeaWorld Research Institute's 'Healthy Oceans – Healthy Planet' philosophy and its focus on scientific discovery could not be more timely or relevant, and I invite you to read this snapshot of our achievements for 2007-2008.

From tropical seas to the Antarctic pack ice, our scientists conducted research on marine animals and the habitats they depend upon as part of international and interdisciplinary research teams. Closer to home, we initiated an offshore aquaculture demonstration project in the Southern California Bight, just south of the US-Mexico border, testing two local fish species as culture candidates and evaluating water and sediment quality in the vicinity of our net pens. In Florida, the National Oceanic and Atmospheric Administration appointed one of our scientists as on-site coordinator in the investigation of an unusually large number of dolphin strandings in 2008.

The passing this year of Dr. Clark Hubbs, long-time friend, trustee and co-chair of our Board's Science Committee, brought home to all of us the importance of the Hubbs family's legacy of scientific excellence and integrity – a legacy that continues to inspire and guide us in our fifth decade as a research organization.

Hubbs-SeaWorld Research Institute, with help from our dedicated family of supporters, is continuing to address critical issues facing our ocean and coastal resources. Together, I know we are up to the challenge of continuing our mission: "to return to the sea some measure of the benefits derived from it."



Don Kent  
President

## A MESSAGE FROM THE CHAIRMAN



When my father, Milt Shedd, founded the Institute, he had a belief that it was our responsibility to help ensure the future health and well-being of our oceans. His charge, that we "*return to the sea some measure of the benefits derived from it*," has guided the Hubbs-SeaWorld Research Institute for over four decades and is as relevant and compelling today as it was in 1963.

I have been involved with the Institute for nearly my entire life and have served as a member of the Board of Trustees for the last 15 years. Our scientists' outstanding track record of results continues to improve the health of our oceans on a daily basis and never fails to impress and amaze me.

Despite an economic downturn, and in the face of shrinking federal and state funding, the Institute experienced a very productive and successful year, thanks to the hard work of its scientists, administrators and support team, and to the generous contributions of people like you. We added new post-doctoral associates, broke ground on our new research facility in Florida, launched an offshore aquaculture demonstration project and much more that you will read about in this report.

My father's belief holds true to this day—it is up to us to acknowledge the many gifts we receive from the sea by giving something back. We can do this by supporting this great organization. I encourage you to be engaged in our mission and to join us in supporting these amazing scientists as they seek solutions to the challenges facing our coastal and ocean ecosystems. Together we can preserve a legacy for our children and grandchildren, ensuring that they share the same sense of wonder and joy that we feel when we experience the ocean, whether it be watching a school of dolphins cavort in the surf, enjoying a delicious fresh fish dinner with friends, helping our child or grandchild catch that first fish or learning more about the fascinating creatures who live in the sea.



Bill Shedd  
Chairman

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Milton C. Shedd (deceased)

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Clark Hubbs, *Ph.D.* (deceased)

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J.B. Kump

Karen Terra

# Scientists

Our researchers are the heart of the Hubbs-SeaWorld Research Institute. Individually and collectively, our scientists are the foundation of the Institute's creativity, scientific accomplishments, and world-wide reputation.

They are responsible for:

- developing and implementing the research and conservation initiatives of the Institute.
- mentoring young scientists and students.
- interacting with the public, policy makers and the broader scientific community.
- generating revenues through grants and contracts that are essential to the continued existence of the Institute.

## SENIOR RESEARCH SCIENTISTS

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Brent S. Stewart, *Ph.D., J.D.*  
Graham Worthy, *Ph.D.*  
Pamela K. Yochem, *D.V.M., Ph.D.*

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Richard F. Ford, *Ph.D.*  
Don Hunsaker, II, *Ph.D.*

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Hendrik Nollens, *D.V.M., Ph.D.*  
Judy St. Leger, *D.V.M., DACVP*

## POSTDOCTORAL RESEARCH ASSOCIATES

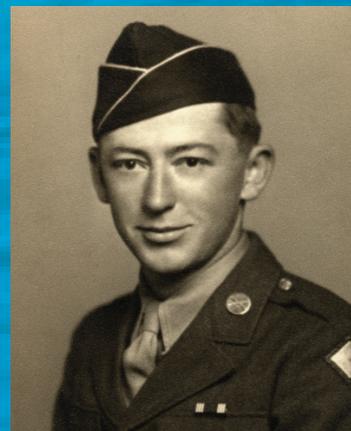
Kristen Gruenthal, *Ph.D.*  
Martha Keller, *D.V.M., M.S.*  
Rebecca Rivera, *Ph.D.*

## RESEARCH SCIENTISTS

Wendy Noke Durden, *M.S.*  
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Michael Shane, *M.S.*  
Jeff Smiley, *M.S.*  
Megan Stolen, *M.S.*  
Paula Sylvia, *M.S., M.B.A.*

# In Memoriam

Last year the Institute said good-bye to a long time friend and trustee, Dr. Clark Hubbs. We were honored to have him serve as a Trustee of the Institute for more than 23 years. His active involvement offered an historic perspective to the legacy of the Institute and the core values of his father, Dr. Carl L. Hubbs and his mother, Laura C. Hubbs. He will be missed by us all.



# Milestones 2008

## PHYSIOLOGY AND OCEAN HEALTH



Stranded dolphin

Dozens of dead and dying bottlenose dolphins along the coast of central Florida prompted NOAA (National Oceanic and Atmospheric Administration) to declare an Unusual Mortality Event in 2008. Hubbs-SeaWorld Research Institute (HSWRI) assisted NOAA with on-site coordination of the national response to the die-off, including research into the possible cause(s) of the stranding event. Although studies are on-going, infectious disease is high on the list. HSWRI scientists often provide training in marine mammal stranding response and research and in 2008 NOAA requested our assistance with a workshop in the Bahamas for local scientists.

HSWRI also responded to several unusual strandings including a rare beaked whale, a fin whale, a bottlenose dolphin female and her successfully disentangled calf, a melon-headed whale, and a dolphin that had been marked several decades previously by HSWRI biologists. Our scientists also have developed a protocol for validating data collected by U.S. marine mammal stranding networks, making it possible for investigators to compare data in time and space. The NOAA Prescott program provides core funding, with matching funds provided by the Hubbs Florida Ocean Fund and additional support from Brevard Tourism Council.

A new contract from the Department of Defense is supporting research on marine mammal viruses at our California laboratory. This program (a collaboration among HSWRI, SeaWorld San Diego, the University of Florida and the U.S. Navy Marine Mammal Program) has already resulted in the discovery of one new marine virus: a parainfluenza virus in dolphins that is closely related to those causing respiratory disease in humans and domestic animals.

Funding from the Darden Restaurant Foundation is supporting a new post-doctoral research fellowship in ocean health in Florida. This program will combine the strengths of two of our key initiatives—long term ecological research on large marine vertebrates such as bottlenose dolphins and sea turtles, and one of the most active research programs on live and dead stranded marine mammals in the southeastern U.S.

## AQUACULTURE

HSWRI launched an offshore aquaculture demonstration project (funded by NOAA National Sea Grant) and placed striped bass and California yellowtail into offshore cages for the first time ever in the eastern Pacific Ocean. Another first was the rearing and release of cultured cabezon into nearshore waters of California.

Two postdoctoral research associates, funded by grants from NOAA, joined the aquaculture team in 2008. One post-doc has initiated a fish genetics research program to address questions related to the population impacts of our marine finfish replenishment initiatives, the other is refining and expanding fish health programs at HSWRI. These programs represent the Institute's continuing commitment to aquaculture research, including its decades-long partnership with the state of California in white seabass restoration through the Ocean Resources Enhancement and Hatchery Program. In addition, leaders of the Florida Marine Fisheries Enhancement Initiative invited the Institute to help advance an important statewide project that will preserve Florida's preeminent sportfishing industry.

Research continued on potential impacts of a commercial-scale aquaculture operation in southern California. These studies will support permit applications submitted in FY2008-09 and will ensure that HSWRI meets its goal of producing ecologically-friendly seafood to support our nation's ever-growing need for high-quality protein.



Crabeater seal female and pup

## ECOLOGY

Loggerhead sea turtle nests in central Florida were near a 19-year low this year. Studies of the ecology and physiology of these long-lived and ancient reptiles have been conducted collaboratively with the University of Central Florida in the Archie Carr National Wildlife Refuge and it is only through these long term commitments to research and conservation that important trends can be detected.

HSWRI was called upon to provide expert advice and assessment of the impact of the *Cosco Busan* oil spill in San Francisco Bay (November 2007) on marine mammals and seabirds.

New information on the breeding biology of crabeater seals was discovered during a research expedition to the Antarctic from September through early November 2007, funded by the National Science Foundation. Changes in ice cover at both poles are being used as indices of climate change and the cruise provided important data needed to interpret ice measurements taken by satellites.

In collaboration with colleagues in Western Australia, Kenya and the Maldives, HSWRI is studying the migratory behavior of whale sharks in several ocean basins, with 30 sharks tagged in 2008 from February through June. This project, funded in part by grants from the SeaWorld Busch Gardens Conservation Fund, BHP Billiton, Project AWARE and Kerzner Marine Foundation, is the largest of its kind in the world.

A NOAA-funded study on the post-release movements and survival of stranded seals was completed in 2008. This collaborative effort between HSWRI and SeaWorld San Diego mapped seal behavior relative to environmental parameters such as water temperature and productivity. Additional funding was provided by Boeing.



Striped bass



Polar bear participating in hearing study

### BIOACOUSTICS

The first-ever behavioral study of polar bear hearing sensitivity was conducted by a collaborative team of scientists and trainers from HSWRI, SeaWorld San Diego, and CRES (Conservation and Research for Endangered Species) at the San Diego Zoo and SeaWorld San Diego. The results of this study, funded in part by Polar Bears International, were presented this year at the largest conference ever convened by the Acoustical Society of America, in Paris, France. The presentation led to a news report in *Science* magazine and a BBC News story.

The HSWRI bioacoustics team traveled to Prudhoe Bay, Alaska for a feasibility study to measure noise levels in polar bear dens. Increased development in the arctic is expected to bring humans and bears in closer proximity in coming years. HSWRI is a national leader in the discovery of solutions to prevent or mitigate noise-related human-animal conflicts.

An important milestone for the HSWRI Bioacoustics Program is the completion of long term ecological studies on two southern California military bases, Miramar and Pendleton. The Department of Defense-sponsored research provided resource managers with vital information on the relative importance of natural factors (such as rainfall) and human activities (such as helicopter over-flights) on the ecology of threatened and endangered birds.



Dr. Pam Yochem shows children how to track animals

### OCEAN SCIENCE LITERACY

The monthly public Hubbs Science Lecture Series in California will celebrate its 10th year in 2009. In 2008 HSWRI scientists involved K-12 students and educators as interns or volunteers in many projects and addressed educators at the National Science Teachers Association meeting and the Southwestern Marine Educators meeting. Education and outreach initiatives, including internships, workshops, lectures and ocean-themed curricula, have been developed with the SeaWorld Education Department, university collaborators including University of Central Florida and Scripps Institution of Oceanography, and other science partners including San Diego Natural History Museum, Marine Technology Society, NASA, San Diego Zoo/CRES, National Science Foundation, and NOAA.



Coconut Point laboratory under renovation

### FACILITIES EXPANSION

HSWRI began renovations of its Coconut Point property in Brevard County, Fla. in 2008. The facility will act as a field station for sea turtle and marine mammal research along the Florida central coast and intracoastal waterways, as well as a base of operations for HSWRI's stranded animal rescue and research program. It will contain laboratory space, offices for 10-15 scientists and administrative staff, and an apartment for a visiting scientist. Its vessel dock is already in use to support studies of free-ranging animals within the Indian River Lagoon. With federal and state construction funding, HSWRI is on schedule to complete renovations in early 2009.

**The Milton and Peggie Shedd Endowment Circle**

recognizes those who have contributed to our endowment fund which is designed to ensure our research programs for generations to come:

Jill and Bill Shedd  
Carol Shedd McCarren  
Terri and Frank Murru  
Peggie Shedd  
Terri and Steve Shedd

**The Carl L. and Laura C. Hubbs Legacy Circle**

recognizes contributors who are planning to leave lasting legacies through bequests and trusts:

Anonymous  
The David DeMotte Family  
Kimberley and Sheldon Fisher  
Ronnie Hunter  
Carla Laemmle  
Caroline McKeon  
Myron Noedecker  
Linda and Jack Miller  
Tammy and Dr. Graham Worthy

# Donors

We are extremely grateful to those individuals, foundations and corporations listed below who have generously supported Hubbs-SeaWorld Research Institute from **July 2007 through January 2009. Totals represent lifetime giving.**

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\*indicates current Society Member

This listing is comprised of donors who supported Hubbs-SeaWorld Research Institute from July 2007 through January 2009 and represents lifetime giving. Though we take every possible step to ensure its accuracy, with a list of this nature it is possible that an oversight has occurred. If your name has been omitted or there is an error in the listing, we apologize and ask that you contact us at 619-226-3871 or solutions@hswri.org.

**Creating a legacy that  
 "returns to the sea for an eternity"**

You can play a significant role in assuring the success of our mission through planned giving in the form of a bequest or trust. Even persons of modest means can become donors and enjoy deep personal fulfillment as well as recognition and lifetime benefits.

Your remembrance of Hubbs-SeaWorld Research Institute will provide our dedicated scientists with the necessary equipment and capital to continue to conduct vital marine research. Moreover, your bequest can help unlock some of the most mysterious questions of the sea and ensure that we conserve our oceans for future generations to enjoy.

The Trustees and staff at Hubbs-SeaWorld Research Institute respectfully request that you consider remembering the Institute and its research as you make important decisions. We believe your bequest should be looked upon as an investment in the future. Like other investments, your bequest should bring personal satisfaction.

Additionally, if you have property and/or appreciated securities that could be offered today to support our research projects, our staff would be happy to talk with you. Beyond knowing that you will "return to the sea some measure of the benefits derived from it," you may also receive significant tax benefits.

To discuss your particular interests, please call Karen Terra in California at 619-226-3881 or JB Kump in Florida at 407-370-1650. If you have already included the Institute in your estate plans, please let us know so that we may properly recognize you.

## 2008 Financial Information

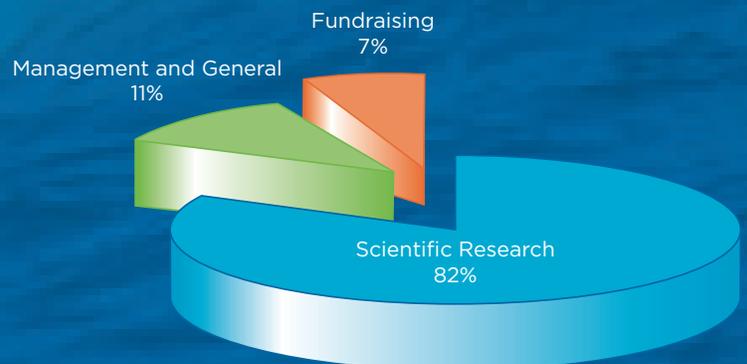
**REVENUE**

Research Contracts and Grants	\$4,719,263
Unrestricted Gifts	1,168,595
Restricted Gifts	54,500
Other Revenue	152,989
Total Support Revenue	\$6,095,347

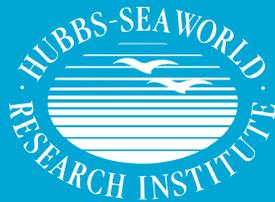
**EXPENDITURES**

Scientific Research	\$4,760,698
Management and General	667,881
Fund Raising	391,164
Total Charitable Expenses	\$5,819,743

## Charitable Expenditure Breakdown by Percentage



A copy of the audited financial statement is available upon request by calling 619-226-3870



## **HUBBS-SEAWORLD RESEARCH INSTITUTE**

### **HEADQUARTERS**

2595 Ingraham Street  
San Diego, CA 92109  
Tel: 619-226-3870  
Fax: 619-226-3944

### **LEON R. HUBBARD, JR. MARINE FISH HATCHERY**

4200 Garfield Street  
Carlsbad, CA 92008  
Tel: 760-434-9501  
Fax: 760-432-9502

### **FLORIDA RESEARCH CENTER\***

6295 Sea Harbor Drive  
Orlando, CA 32821  
Tel: 407-370-1650  
Fax: 407-370-1659

**[www.hswri.org](http://www.hswri.org)**

This annual report was made possible by a grant from Chevron Corporation.

\*A copy of the official registration and financial information may be obtained from the Florida Division of Consumer Services by calling toll-free 1-800-help-fla (435-7352) within the state. The registration number issued to HSWRI in Florida is CH10200.