Thanks

The Center thanks **Bayard H. Cobb**, **David Hoffenberg**, and **Nicholas Skinner** for generous ongoing support.

The Whale Rescue Program thanks the **Mary P. Dolciani Halloran Foundation** for a grant to the Whale Rescue Emergency Fund.

We would also like to take this opportunity to thank our dedicated volunteers, whose gifts are their many talents and the precious time they give us.The water quality samplers of the Cape Cod Bay Ocean Sanctuary and Monitoring Program are: **Regina Asmutis-Silva, Theresa Barbo, Carol "Krill" Carson, Bill Edwards, Joann Figueras, Karen Kramer, Val Magor, Ken Morton, Arthur Niell (Fieldwork Coordinator for Senior Environment Corps), Diana Stinson, and Aimee Teaby.**

In the administrative offices, **Gail Bliss** and **Margaret Hotz** help process gifts and respond to our supporters in donor relations. Margaret has also worked with Elderhostel, aboard whale watches, and in the Stellwagen Bank National Marine Sanctuary Exhibit. She has been with the Center for 16 years.

Mike Page (husband of executive assistant Jackie Page) is lending his programming wizardry to the creation of Stormy Mayo's habitat computer model (see related article).

COASTAL CAMPAIGN HEADS FOR THE HOME STRETCH

Since the launch of its capital campaign exactly one year ago, known as the Coastal Campaign, the Center has raised over $2.8 million of its $3.5 million goal to pay for the acquisition and renovation of a new marine lab for its science and education staff. The third phase of the project, including a new roof, is now underway.

The Center is grateful for donations from the following individuals and organizations: the **Grace W. Allsop Foundation**, whose grant will name the public auditorium; **Kathleen and Kevin Driscoll**; **John and Ann Grady**, whose gift will sponsor the naming of a memorial garden; the **Hiebert Charitable Foundation; George and Susan Krouse; Charles P. O'Connor, John and Linda Pfeffer, Walter and Jaye Phillips, Robert and Veronica Silva, Bill and Marilyn Storff, and John and Deborah Todd.**

For more information, contact Theresa Barbo at 508-487-3622 extension 103, or ccsmedia@coastalstudies.org

ICELAND RESUMES WHALING

Iceland's Fisheries Minister announced in October that the nation would once again take up whaling, with a commercial nation-wide quota of nine fin whales and 30 minke whales by the end of the season next August.

Although the action breaks a 20 year moratorium, the Fisheries Ministry insists that with an estimated population of over 25,000 fin whales in the central North Atlantic (and over 43,000 minke whales), the current policy makes for sustainable whaling. But conservation groups and several governments fear that the move adds to the growing acceptance of whaling after a worldwide ban of twenty years.

An endangered fin whale is hauled to shore in Hvalfjordur, Iceland on October 22, 2006.
© IFAW International Fund for Animal Welfare/m www.ifaw.org

COASTWATCH
is a publication of the Provincetown Center for Coastal Studies, an independent non-profit, member supported organization dedicated to research, public education and conservation programs for the marine and coastal environments.

Provincetown Center for Coastal Studies
115 Bradford Street
Provincetown, MA 02657
Tel. (508) 487-3622
Fax: (508) 487-4495
E-mail: ccs@coastalstudies.org
www.coastalstudies.org

Member Campus Provincetown

Executive Director
Peter Borrelli
Chair, Board of Directors
Robert Ross, Ed. D.
Director of Communications
Theresa Mitchell Barbo
Coastwatch Editor
Jan Young
Layout
Karen C. Kramer

Newsletter design
Shank Painter Co. Inc.

Cover Photo: *Right Whale No. 1603, a 20 year old male skim feeds through Cape Cod Bay. Right whale images taken under NOAA Fisheries permit 633-1483, under the authority of the U.S. Endangered Species and Marine Mammal Protection Acts - please request PCCS permission for use.*

Photos of Gerry E. Studds courtesy of the Gerry E. Studds Stellwagen Bank National Marine Sanctuary.

Non-profit
U.S. Postage
PAID
Marshfield
MA
Permit No. 51

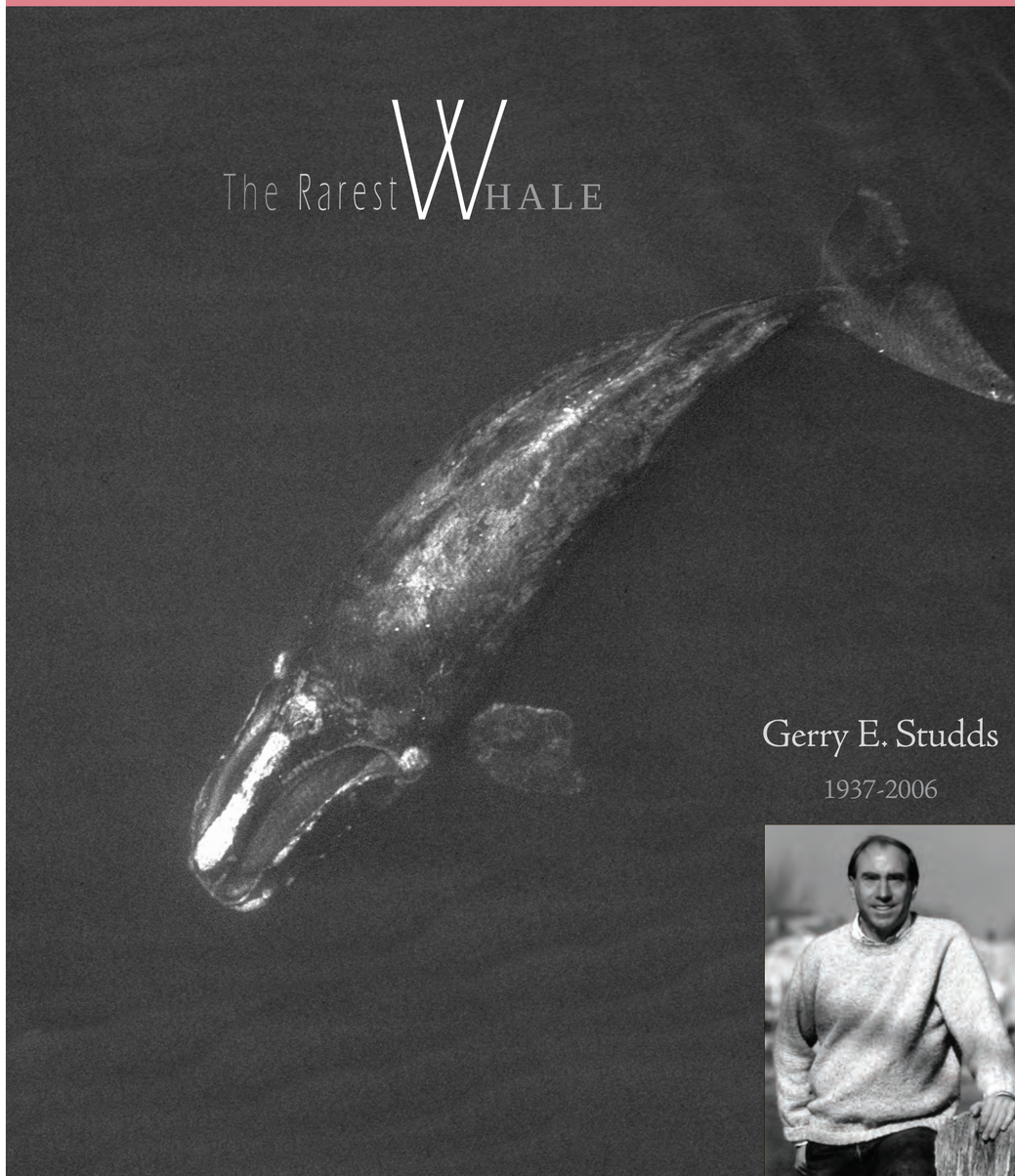
Provincetown Center for Coastal Studies
115 Bradford Street
Provincetown, MA 02657

Provincetown Center for Coastal Studies
30 Years of Discovery and Connection

COASTWATCH

Provincetown Center for Coastal Studies • Massachusetts • 2006 • Volume 30 Issue 4

The Rarest WHALE



Gerry E. Studds

1937-2006

North Atlantic right whales struggle to survive a new century

Gerry E. Studds

1937-2006

Ocean Steward

by Peter Borrelli

I did not personally know Gerry Studds until the end of his brilliant congressional career, but I became an instant admirer and have attempted to advance the ocean ethic embodied in his legislative legacy ever since.

Studds retired from the House in 1996, two years after the Republicans assumed the majority and Newt Gingrich rashly abolished the Merchant Marine and Fisheries Committee that Studds had masterfully chaired. I say masterfully because Gerry Studds was both a visionary and a tactful politician. As a representative of the Bay State and a congressional district that included Cape Cod and the Islands and the Massachusetts shoreline from Quincy to the Cape Cod Canal, he knew the importance of protecting the nation's fisheries from exploitation and mismanagement, of protecting endangered species and special places, and of supporting the men and women whose lives are built around the sea.

He was a co-sponsor of the original Magnuson-Stevens Act of 1973 that extended American fishing jurisdiction to 200 miles offshore, a move that was necessitated by huge foreign factory ships making clean sweeps of U.S coastal waters. He supported passage of the Marine Mammal Protection Act and worked diligently to secure funding for marine science and the regulatory infrastructure to enforce the law. He helped create the Boston Harbor Islands National Recreation Area, fought to limit oil drilling on Georges Bank, championed the Atlantic Striped Bass Conservation Act of 1984, and authored the National Marine Sanctuaries Reauthorization and Improvement Act of 1992 in which an 842-square-mile area of Massachusetts Bay was designated as the Stellwagen Bank National Marine Sanctuary.

During this remarkably productive period of legislative history, Studds and his colleagues were laying the governmental building blocks necessary to protect, restore, and manage the marine environment. It was no easy task given more than two hundred years of exploitation under the misguided belief that the oceans were an infinitely renewable resource. Many of his colleagues represented congressional districts or stakeholders firmly committed to business as usual. It took an artful hand and persuasive voice to move them. Brick by brick, his committee laid the foundation through bipartisanship and compromise, not so much out of political necessity, but in the firm belief that the true course toward sustainability required a balance of use and protection. Today, we call this approach ecosystem based management. The principle is already embedded in such laws as the Marine Mammal Protection Act and National Marine Sanctuaries Act and there is some effort underway to incorporate it into Magnuson Stevens, thereby shifting the focus away from species-by-species management, which often overlooks the overall health of the marine environment.

When he retired from the House in 1996, Don Young of Alaska, a Republican who was at least as far to the right on the political spectrum as Gerry Studds was on the left, introduced a resolution honoring Studds' leadership and ocean stewardship by naming the Stellwagen Bank National Marine Sanctuary after him.

After leaving Congress, Studds worked as a consultant in the fields of fishing and shipbuilding and for a short time helped launch an ambitious project called the New Bedford Oceanarium. He also served on the board of directors and as a valued advisor to the Center.

Studds was understandably upset when we last spoke about the current political standoff in Congress and disinterest on the part of the administration in furthering the ocean vision first articulated in the laws he helped create. The sanctuary that bears his name has had its budget slashed. And in today's flood of email I learned that the draft management plan for the sanctuary, which is now eight years overdue, has been held up by the administration once again.

Gerry's advice to us all no doubt would be to hold our course. Protection of the marine environment is ultimately in the common good and right will prevail. ■

Habitat

—and lots of other things—matter

They have been under international protection from hunting for over 80 years. And yet, with a surviving population of only about 350, they are still so rare that should you encounter one while at sea, you are required by federal law to keep clear by at least 500 yards—the length of five football fields.

Answering the question of why the North Atlantic right whale has failed to rebound from pre-whaling levels is one that Center founder and senior scientist Charles "Stormy" Mayo has been working on for 25 years—by studying Cape Cod Bay, and exploring the relationship between the whales and their prey; the zooplankton, a tiny shrimp-like crustacean called a copepod.

Mayo and his fellow researchers in the right whale field have followed, monitored, filmed, photographed, biopsied, and listened to as many right whales as they could find over the past several decades.

One firm conclusion is that this coastal animal is most severely threatened by ship strikes and entanglements in fishing gear, which comprise the two leading causes of right whale mortality due to human activity. Whether right whales die at a greater rate due to habitat degradation or even natural causes has yet to be established.

"I saw my first right whale when I was about 16 years old, out on Stellwagen Bank with my father," said Mayo. "People knew there were some left, but nobody knew where most of them were." Based partly on historic whaling records, it had already been established that the species had been decimated by the mid-1700's, and that by the 20th century only a few hundred individuals were left in the North Atlantic.

When Mayo returned to Provincetown in the mid-1970s following graduate school, interest in the species had undergone a reawakening, thanks to the pioneering whale recordings of Woods Hole Oceanographic scientists William Watkins and William Schevill, whose work Mayo refers to as "the very foundation of all whale studies." Their 1976 journal article, "Right Whale Feeding and Baleen Rattle" established right whale presence and feeding methods in Cape Cod waters.

At the same time, there was a local story about right whales showing up off Race Point every April, which Mayo confirmed on a cruise with commercial fisherman and future founder of the Dolphin Fleet Whale Watch, Al Avellar.

Then, a local fisherman came by the Center to inform Mayo he was quite certain he had seen some right whales inside Cape Cod Bay. At the same time, Steve Chelmiski gave the Center its first research vessel and a means of searching for right whales—an old fishing boat named *Halos.*

The Center's habitat program was born. Fast forward to today, and 25 years of data show that right whales may only begin feeding when the density of zooplankton is large enough to warrant the energy needed to open their mouths to filter feed. It has been further established through computer modeling that a right whale needs to take in 6,600 organisms per cubic meter in order to "break even" (meaning, it is gaining more energy from the food than is lost by obtaining the food).

In addition, many other factors affect the efficiency of right whale feeding, including the presence of preferred species of zooplankton, which in turn are affected by environmental factors such as temperature, salinity and availability of *their* prey, including phytoplankton and other zooplankton.

Mayo is now working with

Charles "Stormy" Mayo

programmer Mike Page of Great Island Software, who is donating his services, on a computer model that will capture "a lot of the parameters an animal uses to forage. If the characteristics of the food resource and the oceanographic parameters can be pinned down, then we can begin to predict where animals will aggregate."

If scientists can eventually reliably predict when and where right whales will appear in Cape Cod Bay and throughout the Gulf of Maine, it may become possible to fine-tune shipping activities to such a degree that their harmful impact could become negligible. ■

Right whales

from above & below the waves

Owen Nichols stands in the middle of the large office housing the Center's Right Whale Aerial Survey program at the new marine lab building, organizing blue flight suits, instruments and charts for the new field season beginning in January.

The survey team will fly designated transect lines across Cape Cod Bay and the Atlantic Ocean just off the Cape's eastern shore in order to monitor the presence and movements of the rarest large whale in the world, the North Atlantic right whale. The Massachusetts Division of Marine Fisheries (DMF) funds the work, which in turn is funded by NOAA Fisheries as a key component of the state's Right Whale Conservation Plan and the execution of the Marine Mammal Protection Act and the Endangered Species Act, for which NOAA Fisheries is responsible. Cape Cod Bay is the only known habitat area within the U.S. and outside of the calving grounds off Georgia and Florida where right whales are known to congregate during winter.

Keeping track of this extremely threatened population is crucial, as the death of even one individual in the 350 or so surviving animals is a blow to the species' overall chances for survival.

Beginning in January, the team's chartered Skymaster plane will fly about 750 feet over the water, twice a week, through mid-May, while observers photograph any right whales they can find. The team, led by program director Nathalie Jaquet, will document the location and behavior of each whale, such as feeding, socializing, and nursing. Data collected during the aerial survey are entered into a database, and are used to track and monitor the population over each individual's lifetime.

"Right whales are primarily distributed along the coast, which is also where many of our shipping lanes and human activities occur ," Nichols said. "All of the human activities in their habitat seem to be pushing them closer to extinction." He is referring not only to the large amount of shipping activity within this particular habitat, but also to the severe problem of whale entanglements in fishing gear. Ship strikes and lethal entanglements comprise the two main causes of right whale fatalities due to human activity.

The program plays an important role by providing sighting data to state and federal agencies managing these two human activities, mainly through the Sighting Advisory System (SAS) for shipping and the prohibition of certain commercial fishing operations or gear in the bay from January through mid-May.

"If we can make this one habitat safer it may make the difference between extinction and survival," said Nichols. "We have proposed rerouting shipping traffic to the western side of Cape Cod Bay, but our research has also been used by the state of Massachusetts to craft fishing gear regulations," he added.

Meanwhile, Jaquet is using her past experience with acoustic monitoring of sperm whales to guide her right whale acoustic studies in Cape Cod Bay. Aboard the *R/V Shackleton*, armed with recording equipment, she is engaging in focal follows, which is the practice of following one individual whale closely and recording all the sounds it makes.

Relatively little is known as to why and when right whales vocalize. The purpose of Jaquet's study is to correlate vocalization in relation to behaviors such as feeding, foraging, resting, traveling and "SAG-ging", which stands for "surface active group," an aggregation of whales whose behavior appears sexual in nature.

Acoustic studies focus on vocalization rates and patterns, but the research may also help identify the effects of vessel disturbance on the population. Jaquet records whale sounds, while also gathering data regarding movement patterns. "This is very useful to get some understanding as to their vulnerability to ship strikes," says Jaquet.

Jaquet said, "We found out [in 2006] that when 20 right whales are present in the bay at the same time and are all feeding, no calls are heard, but hundreds of calls can be produced by very few whales during a short time when the whales are SAG-ging." She added that further acoustical research will be necessary to interpret these results. With the 2007 field season about to get underway, the answers may be within reach. ■

Nathalie Jaquet aboard R/V Shackleton