

Thanks

For all of you who gave the new year a jump-start by responding to the Center's new "Friends" letter and program, many thanks. The mailing has raised over \$30,000 to date, and garnered a response from almost 13 percent of our donor database. With Friends like you, we can accomplish so much, and will repay your kindness and generosity by dispensing with meaningless renewal reminders and sending you more informative, engaging and exciting appeal letters that give you a reason to give.

The humpback whale program is grateful to **Benson, Young & Downs Insurance Agency**, for helping to underwrite the costs of the benefit sneak preview in Provincetown of Feodor Pitcairn's magnificent underwater documentary of a newborn humpback calf and its mother, "Voyage of a Whale." Of course, **Feo Pitcairn** is also to be thanked for his ongoing support of this program through the **Beneficia Foundation**, and for giving the Center the opportunity to premiere this marvelous film for its donors. The program also thanks the **Phillips-Green Foundation, John and Mary Pollis** and **Nicholas Skinner** for ongoing support.

MassSail thanks the **Cape Cod Five Cents Savings Bank Charitable Foundation Trust** for a gift to underwrite two Advanced Whale Sail Scholarships, and thanks to **Kingman Yacht Center** for a gift to underwrite five scholarships for students from Bourne and Falmouth High Schools.

We are grateful to the following individuals and organizations for their generous ongoing operational support: **John Lamb, Carl Nelson, and Laurence Rockefeller.**

### Coastal Campaign proceeds apace

Last November the Center launched its Coastal Campaign, a \$3.5 million capital fund and endowment drive.

The chief goal was to execute an ambitious, three-phase renovation of a surplus public school building in the heart of Provincetown to provide the Center's science, rescue and education staff with new offices and lab space, and to fund an a first-ever endowment for programs. To date, the campaign has raised \$2,428,500 in both donations and pledges.

Members of the science, research and education programs have settled into the Marine Lab located at 5 Holway Avenue, and for several months construction crews and scientists shared working space.

Energy conservation is a major goal for Phase II, which will wind down in late May. Since January, exterior walls and doors have been replaced, insulation was added, along with energy-efficient windows. The exterior was shingled and painted. Sun shields designed to cool the lab in summer were installed. The antiquated heating system was removed and an efficient propane system was installed in its place.

Later in 2006, Phase III plans will include a new first-ever insulated roof with an R factor of 25 (the existing roof had next to zero insulation). A feasibility study of solar panels is currently underway. Extensive landscaping including the creation of a memorial garden, and hooking up the Marine Lab to the town sewer system, will also be undertaken as part of Phase III.

The Center is most grateful to the following individuals for their recent contributions and pledges to the campaign: Center directors **Katharine Bachman, John Burman, Roslyn Garfield, Thomas Niles, Alix Ritchie**, its new Chair, **Robert Ross**, and **John Whelan**.

Thanks also to the **Grace W. Allsop Foundation, Doug Dick, Ed and Anne Fitzgerald, the Perkel Family Fund, the Pegasus Foundation, and John and Mary Pollis** for their generous support and pledges to the Coastal Campaign.

We are also grateful to the estate of **Michael B. Rice** for a bequest to benefit the Library at the Marine Lab.

For information and a prospectus, call Theresa Barbo, director of communications, at (508) 487-3622 x103, or contact her by email at [ccsmedia@coastalstudies.org](mailto:ccsmedia@coastalstudies.org). ■

## COASTWATCH

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COVER PHOTO: *Amy and Marc Costa aboard RV Good Fortune on her launch day in Rock Harbor on Cape Cod Bay.*  
PHOTO J. YOUNG

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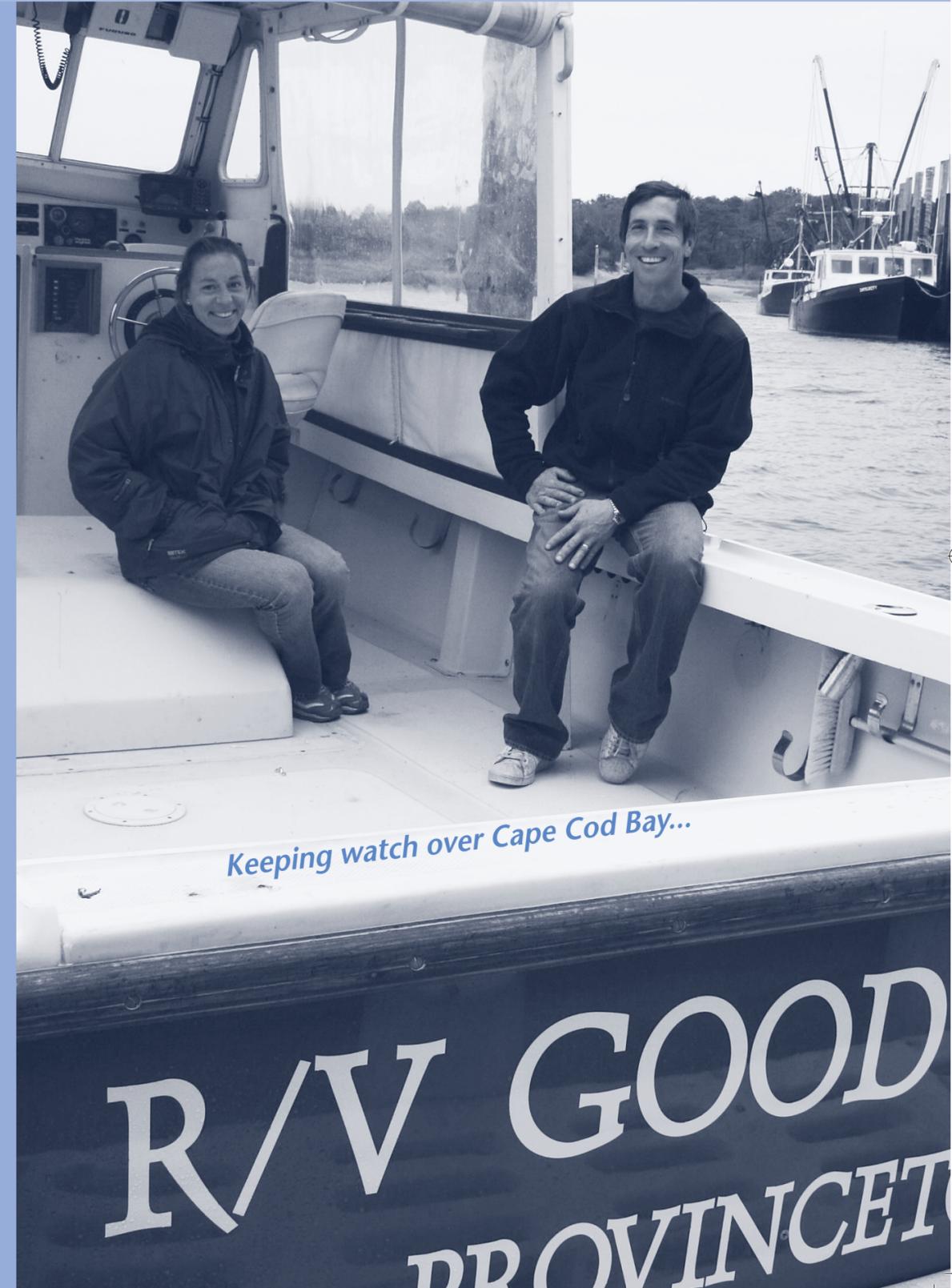
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The next time you're in Provincetown, please call for a guided tour of the Marine Lab. We would love to show you around!



# COASTWATCH

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1976-2006 ~ Thirty Years of Discovery & Commitment



## Be Worried, But Get Smart

by Peter Borrelli

While there is unanimous agreement that we should be doing everything we can locally, regionally, and nationally to decrease our use of fossil fuels, which contribute mightily to global warming, how and where to locate energy facilities of almost any kind has become a seemingly intractable problem.

Here on Cape Cod we are engaged in a heated and at times embarrassing debate over whether to build 130 wind turbines on Horseshoe Shoal in the middle of Nantucket Sound. Elsewhere in New England we have dozens of other energy projects, most of them involving the storage of liquefied natural gas (LNG), being proposed all along the coast. Much of the press and virtually all the developers of such projects have been quick to dismiss their opponents as NIMBYs. In the case of Nantucket Sound they take great glee in the fact that the Sound is in Senator Ted Kennedy's backyard, while conveniently ignoring thousands of residents and hundreds of businesses leaders who honestly believe the project will degrade their environment or businesses. Let's not forget, by the way, that various members of the Kennedy family have been stalwart defenders of the environment throughout the nation.

More recently there was a proposal to build a giant LNG facility on Outer Brewster Island in Boston Harbor, an island that only ten years ago was made part of the Boston Harbor Islands National Park. To move forward the proposal would have required the state to lease the island to the developer. Legislative hearings were held and try as they may to act responsibly in response to the state's energy crisis, as a matter of public policy the proposal was simply laughable.

Even the staunchest opponents of these projects are mindful of the fact that New England is, as one legislative analyst has put it, "at the end of the pipelines." The region lacks sufficient generating capacity to support its economy, and some of the existing fossil-fuel burning power plants rank among the filthiest in the nation. Wind energy would provide additional capacity, help clean our air, and make a tiny but symbolically important contribution toward reducing global warming. So, who would not be in favor of wind energy development? Nobody in his right mind. Then why the stand-off?

Blaming this all on NIMBYs is one of those absolute truths you should not believe. Of course, we all have a backyard of some sort and we care very much what happens in it. We conserve what we know and care about. The problem, as a growing chorus of scientists, political leaders, and energy industry representatives has said, is that we have failed as a nation and as a region to establish a comprehensive ocean policy. Until and unless this happens, we will be divided on how to use and protect our oceans---sometimes for the right reasons, sometimes for the wrong ones, but divided and confused nevertheless.

Last year the Center participated in a collaborative effort sponsored by the Massachusetts Technology Collaborative, U.S. Department of Energy, and General Electric to define a framework for offshore wind energy development. At the

outset the participants, who included a representative cross-section of interested parties, agreed that *we need a plan*. The context of the discussions was that slightly more than half the country's identified offshore wind potential is located off the New England and Mid-Atlantic coasts. Most of this potential lies in what is considered from the standpoint of current technology as deep water (greater than 30 meters). There are few viable shallow water sites such as Nantucket Sound. Or to put it another way, *the future of wind energy development in New England and the Mid-Atlantic is not dependent on what happens in Nantucket Sound*. Were the project approved today it would undoubtedly embolden investors, but *the future lies offshore*.

Moving forward is not as difficult as it might first appear. What I have found encouraging is that many of those on the "development side" of the table are desperate for a rational, comprehensive plan buttressed by comprehensive and consistent public policies. A good example of what no one wants can be found here in Massachusetts. We have a state energy policy that encourages alternate energy development but no ocean policy for locating facilities. Catch 22.

I recently attended a meeting of labor leaders eager to see wind become a major part of the state's energy portfolio. How difficult can it be to site these things, they asked. What is called for is ocean zoning. The group working on the frameworks for offshore development, which by the way has been spearheaded by the visionary Greg Watson of the Massachusetts Technology Collaborative, spelled it all out. Among the things we must do on a statewide and regional basis are:

- Identify site characteristics that would be promising or discouraging to offshore wind development;
- Document existing uses, including Marine Protected Areas (MPAs) and sensitive habitat types,

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## Center launches Cape Cod Bay Ocean Sanctuary and Monitoring program

What do a nutrient auto-analyzer, a muffle furnace, a scallop drag and a snorkel all have in common? They are all on the list of essential equipment and materials for the Center's new Cape Cod Bay Ocean Sanctuary and Monitoring Program, beginning this month with water quality and eelgrass bed monitoring at 21 inshore and 8 offshore stations throughout the entirety of Cape Cod Bay (see chart). Another program for red tide sampling is in the planning and funding stages (see related article).

Although Cape Cod Bay was designated as a state ocean sanctuary over 30 years ago by the Massachusetts legislature, no public or private organization has ever assumed responsibility for the well-being of the entire bay ecosystem. Therefore, the Center's initiative will be the first time the bay's overall health, based on several crucial physical, chemical and biological indicators, will be analyzed by qualified scientists.

"We don't know what's in the bay, not on a regular year-round basis, nor have we done sampling before that takes into consideration both inshore and offshore locations," said Amy Costa, an associate scientist at the Center who will serve as the program's principal investigator. Marc Costa, the Center's marine operations director, will plan and coordinate all of the program's monitoring cruises as well as captain its primary research vessel, the R/V *Good Fortune*.

The program's major objective is to develop a set of parameters that can be used as indicators of the condition of Cape Cod Bay. But it will also provide baseline data on nutrient concentrations throughout the ecosystem and perhaps most importantly from a longterm standpoint, recruit the general public as active participants in maintaining the health of this important and cherished body of water.

This is the time and the bay is the place because development on the

Cape and South Shore continues to skyrocket and the inevitable results—pollutants, habitat degradation, eutrophication, and more—continue to creep relentlessly into the embayment. Eutrophication, which is simply a term for unnaturally high levels of plant growth, has been linked to a number of different harmful processes in coastal waters and has already become evident in certain parts of the bay.

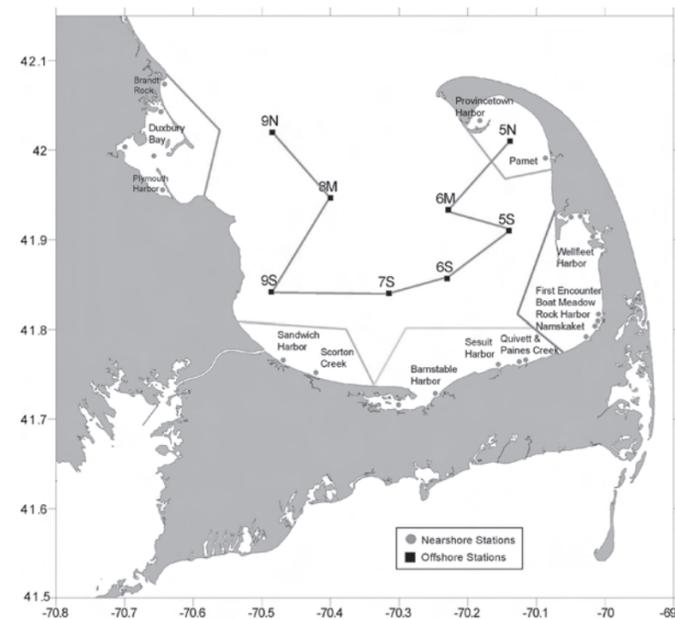
Key to the study will be a mapping of the spatial and temporal variability in nutrient fluxes in the bay, focusing specifically on nitrogen and phosphorous. Excessive nutrient input is behind most major problems affecting coastal ecosystems and nutrient analysis, which is where the auto-analyzer comes in, is a highly effective way to monitor the nutrient levels in the bay. Nutrient levels act as an early warning system, thereby enabling scientists to detect and/or predict potential problem areas in a timely fashion.

The second major component of the program involves an unprecedented

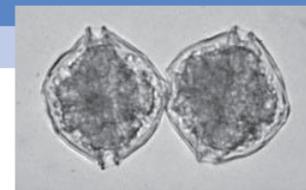
study of the bay's eelgrass beds. Eelgrass (*Zostera marina*) is extremely important biologically, acting as a refuge and nursery for juvenile fish and shellfish. But eelgrass is in decline because of outright and widespread physical disturbances to the fragile beds, such as dredging, construction, and shellfishing, but most notably, eutrophication.

The final piece of the program will be an ever-broadening initiative to engage and recruit the public to become personally involved in protecting the bay and promoting management policies that will ensure its conservation for decades to come. The Center will shortly be recruiting and training volunteers who are interested in participating in the program as citizen scientists.

Your interest, awareness and input are crucial to the success of this program, which we are convinced will make a difference to the future health of Cape Cod Bay. Please contact Amy Costa at 508-487-3622, ext. 122, or [acosta@coastalstudies.org](mailto:acosta@coastalstudies.org) for more information about how you can help. ■



## Center prepares for early detection of red tide



*Alexandrium fundyense* cells

Last spring, coastal New England experienced the worst red tide outbreak in decades. Red tide, which serves as the common name for many species of algae, is most often used in regard to a highly toxic species called *Alexandrium fundyense*, which can profoundly impact the harvesting of widely popular shellfish such as soft- and hardshell clams and oysters. When these shellfish ingest the algae in its concentrated form, they become unsafe for human consumption, resulting in a condition known as paralytic shellfish poisoning (PSP).

As the anniversary of last year's bloom approaches, the Center's habitat studies team, headed by Dr. Stormy Mayo, has been talking to some of the nation's top experts on red tide and other harmful algal blooms (HABs) so that it can eventually offer assistance to Cape municipalities with early HABs detection.

To that end, Mayo's assistants, Dave Osterberg and Meri Ratzel, are learning how to collect, count and identify the single-celled, microscopic red tide dinoflagellate. Ratzel recently completed red tide training under Dr. Donald M. Anderson, who heads up the national office for Marine Biotoxins and Harmful Algal Blooms at Woods Hole Oceanographic Institution

(WHOI); and Osterberg has a great deal of experience in sampling practices for zooplankton, which he will translate to this new initiative in phytoplankton sampling.

Ratzel has also been talking with Harvard's Dr. Robert Edgar, of the Farlow Herbarium of Cryptogamic Botany, who is a diatom specialist. If funding can be found, the Center

## MassSail Returns for second season

Past met present in Boston Harbor this month when the 125-foot schooner *Spirit of Massachusetts* arrived to launch MassSail's Boston Community Days. MassSail, a joint venture between PCCS and the Ocean Classroom Foundation (OCF), was founded to promote public stewardship of Massachusetts' rich marine ecosystems through shipboard and dockside programs along the coastline.

In 2006, MassSail will conduct Community Days in Boston, Provincetown, Duxbury, Nantucket, Newburyport, Buzzards Bay and Hyannis. Participating schools this season include Harbor and Dearborn Middle Schools, Cleveland Middle,

team hopes to begin a regular, year-round sampling program of Cape Cod Bay in order to determine its particular phytoplankton assemblage.

WHOI scientists have found evidence that the *Alexandrium* cells are producing cysts that will sink and seed areas such as Cape Cod Bay previously void of the organism. There is concern that last year's bloom may have formed large cyst fields with the potential to cause intense red tide blooms for years to come.

To learn more about red tide outbreak, visit [www.coastalstudies.org](http://www.coastalstudies.org) and click on Links. ■

Mary Lyon, and Young Achievers Science and Math Pilot School, Fenway High School and McCormick Middle School. During these one- and two-day sails, students will receive an intense immersion in marine biology, from hoisting canvas to sampling the water column for microscopic species upon which marine life feed.

On Wednesday, June 21, OCF and PCCS will host 'Celebrate MassSail' at Fan Pier in Boston, which is designed to introduce members of the public to the crucial need for everyone to become environmental stewards if our beautiful ocean habitat is to survive. The event runs from 5:30 to 8 p.m. Among the speakers: Headmaster John Finley of the Epiphany School, whose students sailed on the Spirit last year; UMass History Professor Jonathan Chu, and Patricia Foley, president of Save the Harbor/Save the Bay, a program partner to MassSail. For information about 'Celebrate MassSail,' contact our program partner, OCF at 1-800-724-7245.

For more information on MassSail programs, including WhaleSail and Advanced Whale Sail, one- and two-week programs for high school and college students in June and July, please visit [www.masssail.org](http://www.masssail.org), or call PCCS Marine Education Director Joanne M. Jarzobski at (508) 487-3623 x108, or by email at [masssail@coastalstudies.org](mailto:masssail@coastalstudies.org). Teachers who are interested in MassSail programs are encouraged to visit [www.masssail.org](http://www.masssail.org) to review the curricula. ■

## Be Worried, But Get Smart

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migration corridors, commercial fishing areas, shipping routes, and other areas; and

- Overlay existing uses and sensitive areas with wind resources and wind development criteria to identify the areas with the least conflicts and highest wind development potential.

Much the same process could be applied to the siting of LNG facilities, cables, and underwater turbines.

If you believe the headline on the cover of the April 2 issue of *Time*, as I do, you should "Be Worried, Be Very Worried" about global warming. We need to reduce our dependency on fossil fuels, while rapidly developing sources of renewable energy in a manner that does not lead us into yet another crisis in our oceans. Unless *all* stakeholders are in agreement and working on energy development and ocean protection *concurrently* we will squander the time remaining for actions that are genuinely collective, effective and mutually beneficial to all. ■