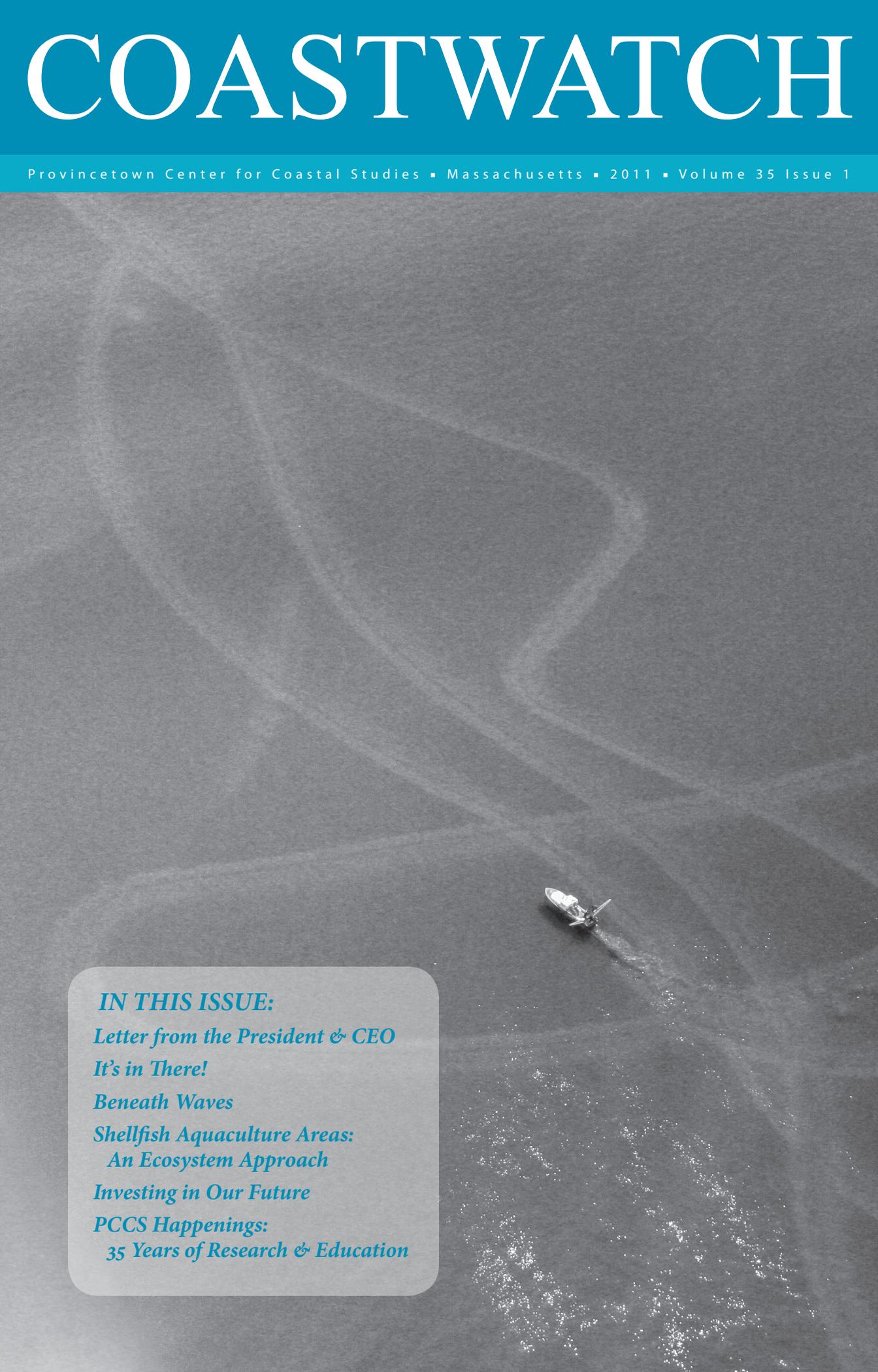


# COASTWATCH

Provincetown Center for Coastal Studies ■ Massachusetts ■ 2011 ■ Volume 35 Issue 1



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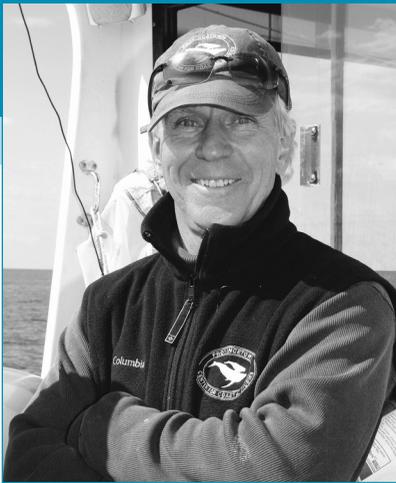
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## LETTER FROM THE PRESIDENT & CEO

**T**he Provincetown Center for Coastal Studies is grateful for your continued commitment and support. Throughout 2011, PCCS will celebrate its 35<sup>th</sup> Anniversary, and we hope that you will join us at one, or all of our celebratory events. In honor of our 35<sup>th</sup> Anniversary, Truro Vineyards developed two wines – Right White and Right Red – a portion of the proceeds from each bottle sold will be donated to PCCS in support of right whales and other marine mammals. The launch of these special wines is on May 21<sup>st</sup> and we hope that you will join us for this very special occasion. More details

on the “Wine & Whales” event and other 35<sup>th</sup> Anniversary celebrations including the Gala, on October 9<sup>th</sup> can be found on our PCCS Happenings page in this issue.

PCCS is exploring new ways to conduct scientific research by integrating programs. This integration allows PCCS to bring a unique perspective to various projects and paint a more complete picture, leading to questions answered through a multi-disciplinary approach, utilizing all of the applicable resources at PCCS. The benefits of this approach can be found in the preliminary results discussed in an article about a study conducted by the Department of Marine Geology and the Department of Ecology, here at PCCS.

Conservation biology is at the core of the Center’s work, but the founders started this organization to also serve as an educational resource. Our educational programs are reaching more audiences than ever before, and engaging local schools in and outside of the classroom as you will read in the article, *Investing In Our Future*. Inspiring young students during developmental years is important to the preservation of marine and coastal ecosystems in the future. PCCS hopes that by engaging youth, we will inspire them to become responsible stewards of our global ecosystem.

The next 35 years will bring even more challenges and we will need your support and participation as we work diligently for ocean and coastal conservation and protection. Thank you for your continued support and I hope to see you at one of our 35<sup>th</sup> Anniversary celebratory events.

*Richard Delaney*  
Richard Delaney, President and CEO

## COASTWATCH

is a publication of the  
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Cover Photo: This image taken during a routine eelgrass survey conducted by PCCS scientists and LightHawk documents the scarring produced by an actively fishing hydraulic clammer off of Great Island, Wellfleet. Of particular concern is the long-term damage to eelgrass habitat. Although this method of fishing is banned in areas that support eelgrass, the scars left are evidence that it does occur. The impacts to bottom habitats and the persistence of the scars will continue to be monitored by PCCS through aerial and underwater surveys.

The use of hydraulic clamming is controversial because of the potential damage it can cause to sensitive bottom habitat. As the dredge moves along the bottom, hydraulic jets cut into the bottom, loosening up the sediments and allowing for the extraction of clams. This leaves a trench, or scar, the width of which conforms to the width of the dredge. Depending on the substrate type, the scars can persist anywhere from a few hours to several years.

From left to right,  
Dr. Amy Costa,  
Captain Marc Costa,  
and Karen Stamieszkin  
study Cape Cod Bay's  
water quality on a  
wintery New England  
day.



## It's in There

Many activities of humankind impact our environment. Every cleanser that we use, chemical we apply, medicine we take, or cosmetic or fragrance that we use eventually affects our coastal waters. These types of contaminants, consisting of thousands of different types of chemical compounds, are often grouped together and referred to by a number of acronyms describing different combinations of substances: PPCPs (pharmaceuticals and personal care products), CECs (contaminants of emerging concern), OWCs (organic wastewater contaminants), or PHACs (pharmaceutically active compounds).

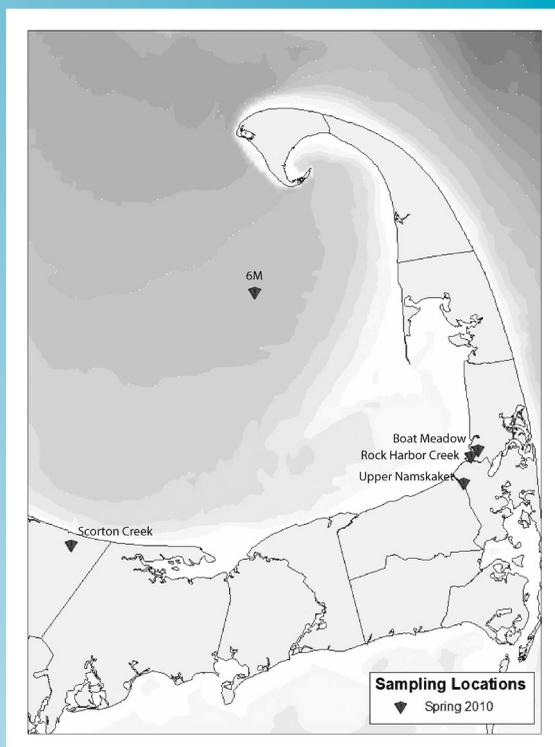
Previous studies have shown the prevalence of these types of contaminants in our waters. One of the first nationwide studies was carried out by the United States Geological Survey (USGS) in 1999-2000. In this study, USGS conducted a reconnaissance of the presence of CECs in 139 streams across 30 states. The results of this study found that 80 percent of the streams contained at least one of the chemicals. In 2001, USGS tested for the presence of CECs in groundwater and drinking water from 25 states. Again, the results showed that the majority of samples (96 percent) had detectable levels of at least one of the chemicals.

Since then, our use of CECs has continued to increase, especially pharmaceuticals. A wide range of medicines are produced and used, some in the range of thousands of tons per year. Most Americans use over the counter and prescription drugs on a daily basis. According to the U.S. Department of Health and Human Services, in 2004 almost half of all people took at least one prescription medication and one in six took three or more medications. More than 10 million women use oral contraceptives. All of these medications eventually find their way into the environment, and the potential impacts that they have on marine organisms and overall

environmental health are not well understood. Since these contaminants are being constantly introduced into the environment, albeit in low doses, of particular concern are the effects of continuous exposure and the possible combined effects of a wide variety of contaminants that are now found in detectable levels in the environment.

Cape Cod is particularly prone to the introduction and persistence of CECs due to its demographics, geology, and prevalence of septic systems. Several studies have identified a variety of contaminants that fall under the classification of CECs in groundwater on Cape Cod. Most recently, research conducted by

*Continued on Page 8*



# Beneath Waves

**B**eneath the waves of Cape Cod Bay, the mysteries and wonder of the sea floor are unveiled by the newest department at the Provincetown Center for Coastal Studies: the Department of Marine Geology.

Dr. Mark Borrelli, a coastal geologist at PCCS, directs the Seafloor Mapping Program, within the Department of Marine Geology. One of the fascinating though unexpected areas of study for Borrelli is eelgrass. Eelgrass (*Zostera marina*) are underwater meadows of grass which are vital to the health of any marine ecosystem: eelgrass beds act as a nursery for shellfish and finfish. Unfortunately, habitat degradation of eelgrass beds threatens this vital component of the bay's environmental health. Chains from boat anchors and other marine equipment dragging on the sea floor rip up and tear at eelgrass beds, causing permanent damage. Eelgrass also plays a critical role in reducing the amount of wave energy that reaches the shoreline and can reduce erosion in certain areas.

Borrelli is working closely with two PCCS colleagues: Dr. Amy Costa, director of the Cape Cod Bay Water Quality Monitoring Program, and Owen Nichols, director of the Marine Fisheries Program. Together, Borrelli, Costa and Nichols are designing a series of investigations to examine the role of eelgrass from varying perspectives and to answer the following questions:

Why does eelgrass flourish in certain places and not others? Can the Center's new sonar system be used to accurately and quantitatively document eelgrass biomass in Cape Cod Bay? What is the relationship between eelgrass and water quality in different areas of the Bay? How does the seasonality of different eelgrass life stages coincide with life stages of shellfish, juvenile finfish and other biota? What is the interaction between sediment transport and eelgrass in the Bay?

As important as the eelgrass and sediment transport project is proving to be, the opportunity that first brought Borrelli to the Center in 2009 is a three-year project to develop methods for the production of nearshore resource characterization maps in very shallow waters (1-10m) for the State of Massachusetts. The study will also build capacity at the Center to collect, process, analyze and interpret bathymetric and acoustic backscatter (sidescan sonar) imagery data in order to develop seamless onshore/offshore resource maps.

Indeed, the Marine Geology Department has taken a seat at the table in these

transformational times when private industry seeks government approval for commercial marine projects.

In the late 1990s more and more projects were being proposed on the seafloor in the state waters of Massachusetts projects including utility cables, liquefied natural gas (LNG) pipelines and of course, wind farms, which remain controversial. The next decade saw state agencies require proponents of these projects to put a percentage of project expenses into a fund to be used only to map the seafloor in state waters. The thinking was that if these projects were going to impact the seafloor, these natural resources should be mapped to better understand the impacts these projects may or may not have on the environment. These maps would serve as a vital 'baseline' data set with which to measure future impacts, both natural and anthropogenic (man-made).

A significant part of the grant included the purchase of a state-of-the-art sonar system for this and future projects. This sonar was specifically designed to map in shallow water environments and is the best technology currently available for this purpose.

As PCCS celebrates its 35th birthday, the Marine Geology Department widens the Center's relevance in Cape Cod's marine science environment.

The current project calls for the collection of bathymetric and acoustic backscatter imagery data with the newly acquired interferometric, or phase discriminating, sonar system in portions of Cape Cod Bay. These data will be used to develop resource maps that will allow local, state and federal resource managers as well as other stakeholders to better understand and manage these invaluable coastal resources. Further, scientists, modelers and other investigators will be able to expand the breadth and depth of their research with this data.

The majority of the state's waters have been mapped over the last several years by the United States Geological Survey (USGS). The deeper waters (>10m) were the first to be mapped. Sonar systems send out a signal from near the surface and the signal increases in size as it moves away from the source. This allows deeper areas to be mapped more quickly. Also there is less of a concern for weather conditions,

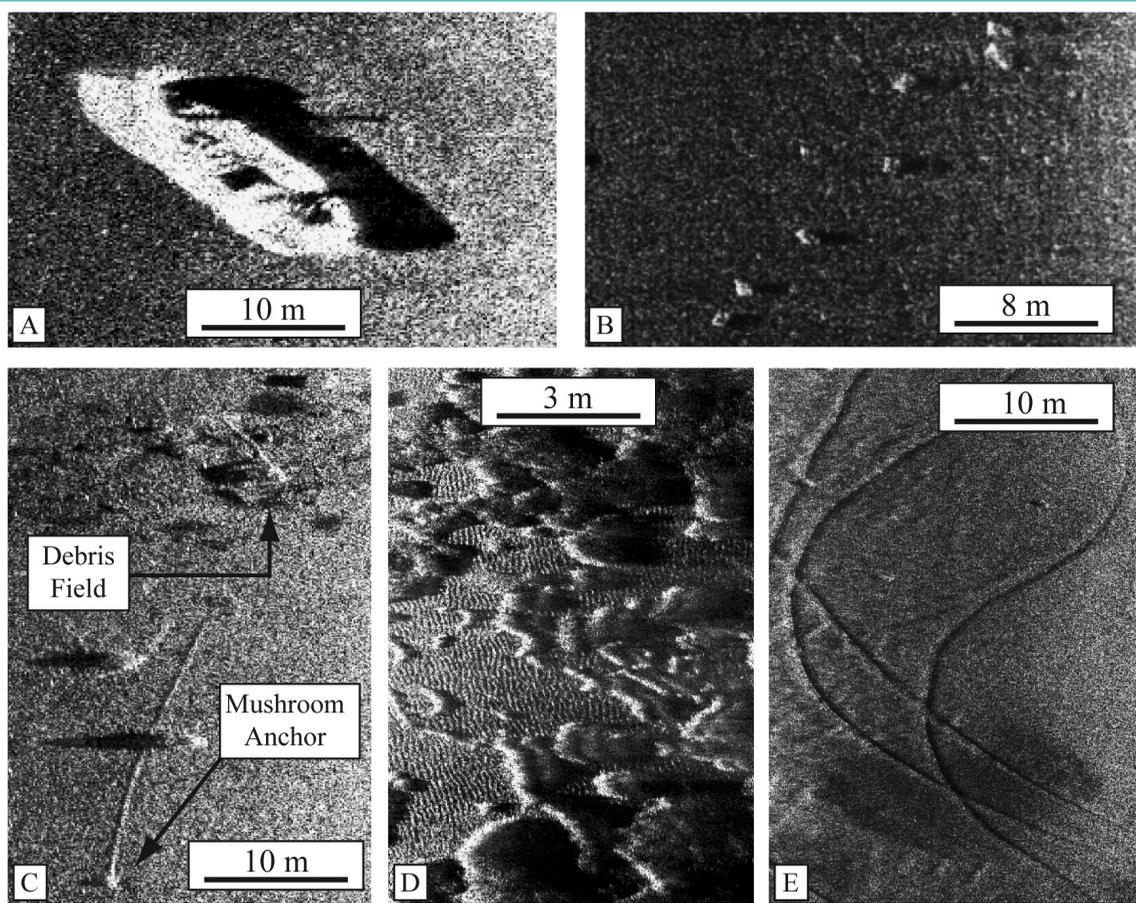
navigation hazards and location in the tidal cycle. Mapping in the nearshore is labor intensive. It is very sensitive to wind conditions, more than a 10-15 knot wind and it's too choppy, also it is not advisable to work after dark. There are myriad navigation hazards working in Cape Cod Bay in 10 meters of water! Many locations cannot be mapped at low tide; think of Billingsgate Shoal. These shallow water areas of the state have been left unmapped until now and the Center is at the forefront of this effort.

The nearshore is best-studied, perhaps more so than other environments, by teams of interdisciplinary scientists. Coastal areas are ecologically critical to every life stage of shellfish, most finfish and other biota. All of which are inextricably linked to the existing aquatic vegetation as well as the sediment transport processes at work in the nearshore.

Last year, 2010, was the first full field season. Many problems were overcome. Getting a cutting edge sonar system with multiple components working smoothly is no small task. Also, the project was plagued with engine

problems on the newly acquired R/V *Bluefin*. And the wind is often not kind on the outer Cape! However, a successful first season has passed. Successful because of problems solved, lessons learned and most importantly, data collected. More than 300 miles of survey lines were collected with over 15 square miles of seafloor mapped off of Provincetown, Truro and Wellfleet. The data was processed and analyzed this past winter and initial results are encouraging.

This project has benefited enormously from the efforts of two graduate students interning with the department; Ashley Norton from the University of Delaware and Taylor Brown from the University of Massachusetts, Boston. Ashley and Taylor began in June of 2010, and spent the summer on the boat collecting data. They then returned to their respective campuses to resume class work and process data from the summer and fall field season. When their classes are over they will return to the Center and do it all over again! We are lucky to have them, they worked tirelessly last summer and were always eager to learn and do more.



Sonar images from 2010 field season in Cape Cod Bay. A) Wreck on seafloor in Provincetown Harbor. B) Lobster pot trawl. C) Derelict gear. D) Eelgrass beds. Please note sand ripple detail, approximately 1 foot spacing. E) Marks on seafloor likely made by hydraulic jet-clamming. Note darker circular area near bottom of image. This suggests different grain size, and will be verified during 2011 field season with analysis of sediment grab samples.



*Seafloor habitat in ~20' of water off Truro – note the sand waves and a well known shellfish predator, the sea star.*

*Photo: John Baldwin/Ricky Macara*

# SHELLFISH AQUACULTURE AREAS: AN ECOSYSTEM APPROACH

Shellfish growers face a notoriously multi-tiered regulatory review and permitting process to use areas for marine aquaculture.

But help is on the way, especially for resource managers who assist future shellfish growers.

In a new twist that merges scientific research with local knowledge, the Provincetown Center for Coastal Studies is helping towns find suitable sites to develop aquaculture areas.

Owen Nichols, director of the marine fisheries research program, is working on this research project. “I sought out input from local shellfishermen, growers, and resource managers as to what kinds of research they thought would help with development and management of sustainable aquaculture and harvest in local waters, said Nichols.

“Mapping waters for community aquaculture development areas (ADAs) was one of the ideas I heard most often,” Nichols explained.

In direct response to the ideas posed by the local community, PCCS is providing technical support to the towns of Provincetown and Truro in order to identify ADAs large enough to contain multiple grow-out sites for use by individual farmers.

The project team includes Owen Nichols, retired Eastham Natural Resource Officer and shellfish expert Henry Lind, shellfish grower and diver John Baldwin, Provincetown/

Truro Shellfish Constable Tony Jackett, PCCS Coastal Geologist, Mark Borrelli, and Truro Shellfish Committee member Parker Small, Jr. “Mapping efforts,” Nichols says, “incorporate publicly available habitat type data and management boundaries, as well as local knowledge of human use and shellfish abundance.”

Massachusetts regulations define an aquaculture-suitable site as an area free of eelgrass with no existing high abundance of *wild* shellfish. The project team also considers suitable areas that have minimal conflicts with existing human uses such as lobster and recreational fishing etc.

According to Nichols, existing data are complemented by a habitat classification approach using acoustic backscatter and bathymetric data collected with an interferometric sonar system. “Combined with sustainable aquaculture site selection criteria and the biological requirements of potential species to be grown, these data are used to identify suitable sites for subtidal ADAs in town waters,” Nichols clarified.

*Continued on Page 8*



*Surf clam collected off Provincetown.  
Photo: Owen Nichols*



*Jesse Mechling explains the diversity of Cape Cod's coastal and marine ecosystems during a field expedition.*

## INVESTING IN OUR FUTURE

**W**hen marine education director **Jesse Mechling** arrived at the Provincetown Center for Coastal Studies last January, one of his first priorities was to work with local schools to increase their knowledge and passion for the marine environment.

"I wanted to bring PCCS research into local schools using a curriculum based program that would not only provide a interesting field experience for local kids, but also assist teachers in their preparation for standardized testing," said Mechling. PCCS works on a plethora of interesting research topics, but Mechling chose to focus on water quality because he believes that the best way to understand all of the incredible creatures that swim in our waters, is to understand the water quality parameters that make Cape Cod such a productive ecosystem.

By March 2010, Mechling had been approved to pilot the program for three area schools, Eastham Elementary School, Nauset Regional Middle School and Veterans Memorial Elementary School. "I spent a number of weeks developing a curriculum using the Massachusetts State Standards and working with the local teachers," he explained. Mechling received a small grant from the Cape Cod Foundation which allowed him to purchase high quality water testing equipment.

The pilot program was up and running by June. Mechling visited two fifth grade classes at Eastham Elementary, two sixth grade classes at Nauset Regional Middle School and the combined fifth and sixth grades at Veterans Memorial Elementary. The pilot program, Mechling clarified, "consisted of two classroom visits where I talked to the kids about what type of creatures inhabit the waters around the Cape, the issue of water quality on the Cape and what impacts poor water quality can have on regional ecosystems."

To begin the program, Mechling gave each class a survey about water quality and the marine environment. The survey tests the children's general knowledge of the marine environment and will serve as an evaluation to expand the program. Mechling tells the students that they are headed on a field expedition, rather than a field trip. "A field expedition is a trip with a purpose, rather than just an opportunity to get out of class," he explained. All classes traveled to Cape Cod Bay for water quality testing and exploration. "In addition to testing the sites, the students performed plankton tows and looked at the numerous creatures they found in the ecosystem," he added.

Mechling hopes to expand the program and make it available to schools throughout the Outer Cape. In addition to the original three schools that participated in the pilot program, Mechling contacted the elementary schools in Truro, Brewster, Orleans and Wellfleet. So far three of the four have signed on for the program. Mechling will be working with participating schools this spring. To meet his goals, he has applied for a National Oceanic and Atmospheric (NOAA) Bay Watershed Experience Grant. "If awarded," Mechling says "the grant would help bring all fifth and sixth graders throughout the Outer Cape on at least three field expeditions a year, with up to seven classroom visits." Through water quality education, children will also learn more about plankton, food webs, whales and ecosystems, he added.

Cape Cod – and Cape Cod Bay–provide unique living classrooms through which our coastal and marine ecosystems converge. Much depends on the grant application, but Mechling is determined to find funding for the program and continue to reach local students providing them with an amazing opportunity to learn about the ecosystems that surround them through field experience.

## Aquaculture

*continued from page 6*

“Potential ADAs are surveyed to ground-truth the mapping approach and assess existing shellfish abundance,” he said, adding “Diver transects are conducted to identify bottom type, sediment characteristics, and vegetation and benthic quadrant sampling is used to estimate shellfish density.” These data are incorporated into the site selection process, which includes ongoing discussion with stakeholders regarding ADA permitting and use. In this case, stakeholders refer specifically to Truro and Provincetown residents, town, state and federal resource managers.

**Follow the science:** Preliminary mapping of a potential ADA straddling the boundary between Provincetown and Truro has been completed. According to Nichols, mapping was conducted using a Geographic Information System (GIS). Local knowledge of other human uses such as lobster and recreational fishing, management boundaries, ideal grow-out conditions, and existing shellfish abundance were incorporated using an interactive process by employing the GIS software during group and individual meetings with participants and stakeholders.

Nichols says, “Information on eelgrass distribution and bathymetry was used to delineate a 50-acre ADA site, consisting of two 25-acre sites abutting one another across the town line and following the 20’ depth contour.” Nichols explains, “Acoustic backscatter data indicated no eelgrass and a smooth, sandy bottom,” he said. “The results of the dive surveys corroborated the sonar data,

indicating no eelgrass.” Nichols said. “The only shellfish species encountered was the surf clam; abundance at all stations was at or below one organism per square meter.” He added. “Additional dive surveys may be conducted to assess storm impacts on the site, based on evidence of a dynamic environment in the eastern section of the site indicated by sand waves” he said.

Results of the preliminary mapping were presented at the Northeast Aquaculture Conference and Expo in December 2010, generating valuable feedback from conference participants, including growers and state and federal managers. Outreach has been conducted by all project participants in order to assess the potential utilization of an ADA by local growers and gather local knowledge incorporated into the mapping process.

All preliminary data gathering and mapping necessary to delineate a potential ADA have been completed. Pending approval of the shellfish committees of each town, final maps will be drafted and submitted to each town’s Board of Selectmen. Should the towns choose to proceed, the project team will continue to provide technical support during this process. If the towns complete the permitting process and sites within the ADA become available to the public, the project team will work with the towns’ Shellfish Committees and regional aquaculture and extension experts to provide an educational forum for prospective growers to learn more about subtidal aquaculture techniques.

## It’s In There

*continued from page 3*

the Silent Spring Institute documented the presence of a number of these emerging contaminants in ponds and public wells on the Cape. The Provincetown Center for Coastal Studies is interested in determining if these contaminants make their way into our embayments and estuaries and, ultimately, into Cape Cod Bay.

Similar to the ponds and wells investigated in the Silent Spring Institute study, groundwater is also the primary source of freshwater to Cape Cod Bay. In fact, much of the groundwater on the Cape discharges not into bodies of fresh surface water, as is common in other watersheds in Massachusetts, but rather directly into coastal waters and embayments. Therefore, this suggests that levels of CECs in the coastal waters of the Cape could be even higher than those measured in the ponds and public wells on the Cape.

To address this issue, in the spring of 2010 the Provincetown Center for Coastal Studies conducted preliminary research on levels of CECs in Cape Cod Bay and several of the creeks and embayments that drained into the bay. The goal of this study was to determine if there are detectable levels of CECs in Cape Cod Bay and its embayments. Six samples were collected from five sites (see map for sampling locations). In collaboration with researchers from University of Massachusetts Boston, each of these samples tested for carbamazepine, sulfamethoxazole, and trimethoprim. Carbamazepine is classified as an anticonvulsant/

mood stabilizer. Trimethoprim and sulfamethoxazole are antibiotics. These compounds were chosen, not for their particular purposes, but because their chemical composition is such that they are resistant to natural degradation processes and so will tend to remain in the environment a very long time.

Four of the five sites had a detectable level of at least one of the contaminants.

	Concentration (ppb) in aqueous phase 500mL		
	Sulfamethoxazole	Carbamazepine	Trimethoprim
6M_depth	76.5	Na	Na
6M_surface	21.3	Na	Na
Rock Harbor Creek	Na	1000	Na
Scorton Creek	Na	5426	Na
Upper Namskaket	Na	250	Na
Boat Meadow	Na	Na	Na

As a result of this research, we now know that there are detectable levels of CECs in the majority of the locations tested. We would like to expand on these initial results, testing for additional contaminants at multiple sights over a longer period of time. This more detailed spatio-temporal data will help identify the sources of the CECs and how best to minimize the environmental impacts of these contaminants.

# PCCS Happenings

**Our story began 35 years ago**, when in 1976, three like-minded scientists decided that it was no longer enough to talk and teach about the raw natural beauty of Cape Cod's ever-changing coastline and marine habitats; they wanted to seek answers to biological questions in an effort to preserve Cape Cod's land and seascape for generations. Acting on that shared vision, Dr Graham Giese, Dr Charles "Stormy" Mayo and the late Dr. Barbara Mayo, created the Provincetown Center for Coastal Studies.

*Join us as we celebrate 35 years  
of Research and Education!*

## **"The Bay," Gallery Opening**

**May 20**

On Friday, May 20th at 5:30 pm., the Elizabeth Rowley Gallery and the Provincetown Center for Coastal Studies presents "The Bay," a collection of original paintings by Lorraine Trenholm and other gallery artists inspired by Cape Cod Bay. This is the first in a series of events to celebrate the 35th Anniversary of PCCS.



*"Lone Dory on Bay Bars" Lorraine Trenholm*

Guests will enjoy the best locally-harvested seafood and specially selected wines courtesy of The Brewster Fish House. Raffle tickets will be available for purchase, and a percentage of the proceeds of all paintings sold at the opening will be donated to PCCS. The event is free and all are welcome.

Sponsored by:

Rowley Gallery



## Upcoming Events

### **Whale Week:**

### **A Celebration of the Sea July 25th – 30th**

July 25 at 9 am

#### **Beach Cleanup**

Join us for a thirty minute beach cleanup to kick off Whale Week: A Celebration of the Sea. Marine debris is a serious problem facing our oceans and coasts. It degrades coastal and marine vistas, harms wildlife, introduces toxins and chemicals into our water, destroys habitats and can directly affect human health. No Reservations necessary.

☞ Meet at the PCCS kiosk on MacMillian Pier, Provincetown.

**Free;** donations are welcome.

July 25<sup>th</sup> at 6 pm

#### **Build Your Own Boat Race**

Paddle into Whale Week and win prizes for your efforts while supporting whale research.

☞ Contact Venture Athletics to register.

☞ Launch site is adjacent to MacMillan Pier, Provincetown.

The fee is \$20 to participate in the race.

July 26th at 10 am

#### **Arts and Crafts for Kids**

Join PCCS educators for fun marine arts and crafts. The event is best suited for children ages 4 through 12 and registration is required.

The event will be held at the Hiebert Marine Lab, 5 Holway Ave., Provincetown.

**Free;** donations are welcome.

*More...*

July 26<sup>th</sup> at 2 pm

## Tidal Flats Exploration

Every twelve hours, the tides of the Outer Cape retreat to reveal an exciting world of hidden creatures. Despite their barren appearance, tidal flats are highly productive systems that support large numbers of animals. Come get your feet wet and discover the secret world of tidal flats with a PCCS naturalist. All ages welcome. No reservations necessary.

 Meet at the West End Breakwater, Provincetown.

**Free;** donations are welcome.

July 26<sup>th</sup> at 6 pm

## Naturalist Kayak Tours

Learn about the geology, history and nature of the harbor and surrounding waters while searching for sea birds and seals. Kayak to the very end of Cape Cod, Long Point, or paddle alongside the West End Breakwater. Paddling experience is not necessary, all skill levels welcome. Participants must be 15 or older. Fees apply and reservations are necessary.

 Please contact Venture Athletics Whalers Wharf, Provincetown to make a reservation.

July 27<sup>th</sup> at 10 am

## Meet Delilah

Step inside a life size right whale while learning about these amazing animals.

This event is suitable for adults and children.

 Join us at the Hiebert Marine Lab, 5 Holway Ave., Provincetown.

**Free;** donations are welcome.

July 27<sup>th</sup> at 6 pm

## Photography Sunset Tour

Celebrate the marine and coastal environment through art. Join PCCS educator and photographer, Jesse Mechling for a three hour sunset photography tour to one of his favorite Outer Cape spots. Learn techniques and ideas for capturing those classic Cape Cod images, as well as advice for creating unique landscape photographs.

 Meet at Province Lands Visitor Center in Provincetown.

**Free,** but reservations are necessary.

*More...*

## Wine & Whales

May 21

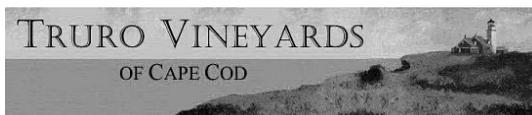
On Saturday, May 21st, the Provincetown Center for Coastal Studies and Truro Vineyards presents “Wine and Whales,” a special event to celebrate the launch of two new wines developed by Truro Vineyards in honor of the **35<sup>th</sup> Anniversary of the Provincetown Center for Coastal Studies.**

The wines—Right Red and Right White—are named for the North Atlantic right whale, one of the rarest whales in the world. A percentage of the proceeds from each bottle sold will be donated to PCCS to support right whales and other marine mammals in Cape Cod Bay and beyond.

Guests will enjoy hors d'oeuvres prepared by Blackfish Restaurant and a complimentary glass of wine courtesy of Truro Vineyards. Admission also includes a free commemorative wine-glass and a raffle ticket for a chance to win one of a number of eclectic prizes. The talented musician and song writer Kami Lyle will perform throughout the afternoon.

The event will be held under the tent at Truro Vineyards, 11 Shore Road, Route 6A in Truro, from 3 to 6 pm. Admission is \$20 for non-members and \$15 for members of PCCS. All proceeds from this event support the Provincetown Center for Coastal Studies. Tickets may be purchased in advance by contacting Cathrine Macort at 508.487.3622, et. 103. Tickets will also be available at the door.

Sponsored by:



## WHALE WEEK: A Celebration of the Sea

July 25–30

As part of the 35<sup>th</sup> Anniversary Celebrations, the Provincetown Center for Coastal Studies is proud to launch the first-ever **Whale Week: A Celebration of the Sea.** Whale Week runs from July 25<sup>th</sup> through July 30<sup>th</sup> and will feature family friendly events all with a marine theme.

Paddle into Whale Week on July 25th with a **Build Your Own Paddle-Boat Race** sponsored by Venture Athletics.



The week culminates on Saturday, July 30<sup>th</sup> with a **Party on the Pier,** featuring an open air concert with **The Incredible Casuals.** Many Whale Week events are free; donations are always welcome.

## Sunset Whale Watch

July 29 & August 26

Please join us for one or both of our exclusive sunset whale watches courtesy of the Dolphin Fleet this summer, the first on **Friday, July 29th at 5:30 pm**; the second on **Friday, August 26th at 5:30 pm**.

Cruise out of beautiful Provincetown Harbor towards prime great whale habitat, Stellwagen Bank National Marine Sanctuary, to see some of the most magnificent animals in the ocean; savor a sumptuous gourmet picnic from Far Land Provisions, fine wines from Truro Vineyards and beer from the Land Ho!



Relax and delight in a beautiful summer evening in the company of fellow whale enthusiasts and Center scientists alike. PCCS members \$100 all-inclusive; non-members may join the whale watch and become first-time members for \$120 all-inclusive.

Contact Jan Young to register at: 508.487.3622, et. 104.

Sponsored by:

**Dolphin Fleet** OF PROVINCETOWN



## Gala

October 9

Join us at the newly renovated Town Hall in Provincetown on October 9<sup>th</sup> at 6 pm, for a glamorous gala to recognize the visionary founders of PCCS and announce the founding members of the Mayo-Giese Coastal Legacy Society.

Savor a gourmet dinner featuring local, sustainable produce; fine wines; celebrity speakers and live entertainment.

## Holiday Homeport Banquet

December 8

Join PCCS staff on December 8th at 6 pm, for this festive annual event at the Old Jailhouse Tavern in Orleans. Enjoy delicious hors d'oeuvres, dinner and great conversation!

All proceeds benefit the Ruth Hiebert Memorial Fellowship, which provides scholarships to women affiliated with PCCS pursuing studies in science. Admission includes a cocktail reception, dinner, eclectic raffle prizes, and cash bar.

July 28<sup>th</sup> at 11 am

## Whales of Cape Cod

This lecture will be held at the Province Lands Visitor Center in Provincetown.

**Free**; donations are welcome.

July 29<sup>th</sup> at 5:30 pm

## Sunset Whale Watch with PCCS

Board the Dolphin Fleet Whale Watch vessel and cruise out of Provincetown harbor to prime whale watching waters and learn about whales from the scientist that have been studying them for 35 years. This event is sponsored by Dolphin Fleet of Provincetown, Truro Vineyards and the Land Ho!

 Departs from MacMillan Pier.

Tickets are \$100. Price includes gourmet picnic, beverages, beer and wine. Contact Jan Young at 508.487.3622, et. 104.

July 30<sup>th</sup> at 12:30 to 3 pm

## Party on the Pier

The week culminates with a **Party on the Pier**, a concert featuring The Incredible Casuals!! Join us for food, fun and fantastic music at this free open air concert on MacMillan Pier. No registration necessary; rain date Sunday, July 31st same time, same place and same quintessential Cape Cod entertainment; The Incredible Casuals.

 For more information about Whale Week and other PCCS events, please contact Tanya Grady at 508.487.3623, et. 113 or send an email to: [tgrady@coastalstudies.org](mailto:tgrady@coastalstudies.org).



**Provincetown Center for Coastal Studies**

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Provincetown, MA 02657

*return address service requested*

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## *Leadership Support*

Dolphin Fleet of Provincetown  
GateHouse Media New England  
Land Ho!  
Northeast Sustainable Agriculture Research & Education  
(SARE) Sustainable Community Grant  
Rowley Gallery  
Truro Vineyards  
Venture Athletics  
WCAI

## *Wish List*

The Provincetown Center for Coastal Studies depends on the generosity of its members. The PCCS wish list includes needs great and small. Wish fulfillment ranges from 250 to 30,000 dollars. To learn more about our wishes, please contact our development officer Jan Young at 508.487.3622, et. 104