

Blue Ocean Society for Marine Conservation

A 501(c)(3) non-profit organization dedicated to inspiring passion in people to conserve the marine environment, through education & research in New England.

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Dedicated volunteers are crucial to our work. Thanks to all who have helped at our programs and in our office. Special thanks to 'regulars' **Michael Toepfer, Susan Scott, Robert Lindsay, Chris Carr, and Amy Warren** for all your help this Fall!

This newsletter was printed with grant funding from NOAA's Community-based Marine Debris Prevention and Removal Grants Program and under the Coastal Zone Management Act by NOAA's Office of Ocean and Coastal Resource Management in conjunction with the New Hampshire Coastal Program.



Searching for Marine Debris

By Jennifer Kennedy



How much derelict fishing gear is in the Gulf of Maine, and what is its impact on marine life? This is one question that we're trying to answer with our Marine Debris to Energy Project.

We made some headway in answering that question this summer in a project that involved the unique combination of a historic sailing vessel and the more modern technology of side scan sonar.

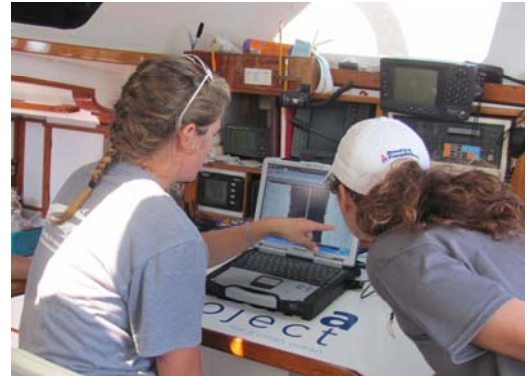
Derelict gear is fishing

gear that can no longer be retrieved because the buoys connecting the gear to the ocean surface have been lost. Surface buoys can be lost for a variety of

reasons, including weather and storm surge, and interactions with vessels.

Why do we care about

derelict gear? Derelict gear may threaten habitat, marine creatures, boaters, divers and fishermen



Summer intern Anna Neumann and Rachael Miller of the Rozalia Project search for marine debris on sonar images.

The Whale You May Never See

By Dianna Schulte



Many people have never, and will never, see a right whale. Many people have never even heard of a right whale. "Did you say *white whale*?"

I'm not surprised that these 60-ton animals have gone under the radar of so many people. With less than 500 individuals in their population, the North Atlantic right whale is the hidden jewel of the oceans.

During the past two summers, many fortunate whale watchers have been treated to distant views of

these rare creatures.

For reasons not completely understood, dozens of right whales, who usually spend their summers feeding in the Bay of Fundy, were found near our "home" whale watching grounds of Jeffreys Ledge, which is about 20 miles east of Portsmouth, NH. Although we are not allowed to approach this critically endangered species closer than 500 yards, seeing the unmistakable V-shaped spout high in the air and the smooth black flukes entering the water on the horizon always sends shivers down my spine. Shivers, not because of the rarity or beauty of

the sighting, but because I know this species may be extinct in less than 200 years.

Right whales got their common name due to the fact that they were considered to be the *right* whale to hunt. They moved slowly, floated when killed, and yielded about 7,000 gallons of oil after their 8-inch thick blubber was rendered. The oil was used to heat homes, illuminate lamps, and for cooking (imagine whale-margarine!). The 8-foot long baleen inside of the whale's mouth was also extremely valuable. The income from those 400-500

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baleen plates from just one whale would pay for the entire whaling trip. Everything else was profit! Baleen plates were used in women's corsets, combs, umbrellas and furniture.

Because of these attributes, North Atlantic right whales were highly prized and have been hunted for over one thousand years. In New England, right whale hunting occurred primarily in the late 1600's through the early 1700's, but small-scale hunting continued through the early 1900's. In 1935, right whales received protection from the League of Nations. At that point, scientists believe the population was less than 100 individuals.

So, with over 75 years of protection, why hasn't the North Atlantic right whale population grown more significantly? History tells us that their pre-whaling population was over 10,000, and maybe even up to 50,000. Right whales, along with all large whales, face many other threats, most of which are man-made. We see some of these threats every day we venture out on a whale watching trip: boats and buoys.

Ship strikes and entanglements in fishing gear are two of the top known causes of right whale mortality. Due to their build, right whales are slow and buoyant (remember all that blubber?) and may not be able to physically avoid a fast-moving vessel. When feeding, a right whale swims along with its mouth open, allowing those long baleen plates to filter the copepods (zooplankton) from the water. This creates additional drag, slowing the whale further. And what happens when the whale then encounters a rope or net? That gear becomes tangled around the baleen, the head and the body of the whale. While an entanglement is rarely immediately lethal, an entangled whale may suffer for months or years while the gear inhibits the whale's ability to swim, feed or dive, or causes an infection.



This NOAA image shows the heads of two right whales.

Other, less obvious, threats may also be involved in the slow recovery of this species including noise pollution, food competition, climate change and ocean acidification to name a few. But the real reason may be in the whales themselves.

With a population reduced to so few individuals, genetic diversity in right whales is low. If two whales who are closely related, or have similar genes, attempt to mate, the pregnancy will be unsuccessful. Reproductive females can produce one calf every three years once they are mature at an age of 9 years old. Each year, the number of females who are available to calve (are at least 9 years old and have not calved in the previous two years) is substantially greater than the number of females who actually calve.

Even with all these hindrances, the north Atlantic right whale population has been increasing, slowly but surely, over the past decade. Efforts to protect these whales from ship strikes and entanglements are strong and genetic analyses continue to teach us more about the population structure. Humans caused the near-extinction of this species, and made a lot of money by doing so. Now it is time for us to give back to the whales and ensure they are here for future generations of whale watchers to see and appreciate.

To learn more about right whales and the efforts to bring them back, pick up *The Urban Whale*, by S. D. Kraus and R. M. Rolland, 2007, Harvard University Press, Cambridge, Massachusetts.

How Your Support Helps Right Whales

Due to their critically endangered status, we are not permitted to approach right whales to collect detailed data and images. However, our experienced research associates have trained eyes and can identify this rare species from a mile away. Here's how your support of our research helps these endangered animals.

- **Spotting a right whale-** Reporting our sightings of right whales to NOAA's Sighting Advisory System (<http://www.nefsc.noaa.gov/psb/surveys/SAS.html>) can lead to voluntary vessel speed restrictions in the area of the sighting. Ship strikes are one of the leading causes of mortality in right whales and it is believed that if ships reduce their speed, the chance of whale mortality is greatly reduced.
- **Sharing our data-** In 2007, the shipping lane into Boston Harbor was shifted slightly to redirect large ship traffic across an area of the Stellwagen Bank National Marine Sanctuary where endangered whales were not seen as frequently as in other areas. Blue Ocean Society provided the study with our sightings data for humpback, fin and right whales. By shifting the shipping lanes, scientists at SBNMS determined the chance of a right whale being struck by a large ship was reduced by 58%, and the chance that any baleen whale being struck was reduced by 81%.
- **Assisting injured whales-** In the past 2 years, we have suspected 2 right whales were entangled and were able to call for temporary permission to further investigate. These events allowed us to obtain detailed data and images which were useful in the disentanglement effort by qualified responders.

Kids CAN Protect Marine Life!

By Willy Jones, age 11



This summer, a bunch of kids from Pennsylvania saved some whales and other marine life.

When Maria Wilson, the executive director of the [Waverly Community House](#) near my home in Pennsylvania, found out I was a junior intern for Blue Ocean Society for Marine Conservation, she asked me to do a presentation during the summer Comm Camp program, where kids from grades K-7 have fun during the summer.

I was part of Wild Seas and Skies week, and my main idea was to show kids how litter can affect marine life. A major threat to whales, dolphins, fish, turtles and manatees is fishing line. If an animal gets tangled up in fishing line, they only have a small chance of surviving.

So, at Comm Camp, we recycled empty tennis ball cans into containers where anglers can put their used fishing line to keep it out of the environment. It was actually really easy to do. The first thing I did was to collect the empty containers. I put a box at two local tennis centers, [Birchwood Tennis and Fitness Center](#) and [Scranton Tennis Club](#) and the players were so glad to help. I collected about 90 cans in just a few weeks.

I learned about the project from Blue Ocean Society for Marine Conservation, which had asked for volunteers to put the cans together



Fishing line recycling containers created by kids during the Comm Camp at the Waverly Community House in Pennsylvania

in connection with their [Marine Debris to Energy Project](#) and the [Stow It - Don't Throw It Project](#), which is a youth-driven effort to recycle used tennis ball cans.

Blue Ocean Society gave me some stickers and a flyer to put into the cans, and the Stow It - Don't Throw It project provided other stickers and materials to tell anglers why they should recycle their line. Even here in Pennsylvania, we have birds that are tied up with the line, and boat engines can get ruined if a line gets tangled up in the propeller. Unfortunately, Pennsylvania doesn't have an organized fishing line recycling program in place - yet. Hopefully that will change. But one is in place in New Hampshire, so we can help that one.

I brought all the tennis ball cans to the Comm Camp, and after talking to the kids about how awesome whales are, and how litter can hurt them, they all wanted to make the cans to help protect marine life.

The Comm Camp kids did their own drawings of marine life to put into the cans as a way to thank the anglers for recycling the fishing line. They were colorful drawings

that I hope will show the anglers that all kids care about the environment.

To make the recycling cans, first we ripped off the labels on the tennis cans - that was fun. Then I gave them each a Blue Ocean for Marine Conservation sticker to put inside the cans. That was pretty fun too, and the kids did it just great, even the little kids. We rolled up our drawings and the Blue Ocean Society information flyer like treasure maps and put them inside the cans. Then, we attached the lid with a zip tie to make sure it wouldn't blow into the water.

Blue Ocean Society will take the cans and give them to anglers in New England to help keep the fishing line off the beaches and out of the water. The anglers in New England will see that Pennsylvania kids care about whales and other marine life, because we do!

The kids were so proud to do this project, and they did it really well. They all tried their best and the cans looked awesome when we were done. It is an easy project to do, and fun too! Best of all, the kids knew they were helping to protect marine life and that they could make a difference. I am so proud of all the kids who saved some whales.

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themselves who must replace the lost gear. While derelict gear is considered marine debris, its exact impact on the environment and marine life is understudied. We do know that whales and other marine life get entangled in fishing gear, but since the gear is not marked, it is often difficult to determine if the gear was derelict or active, and even what kind of gear (e.g., lobster, gill net) it is.

How can side scan sonar help?

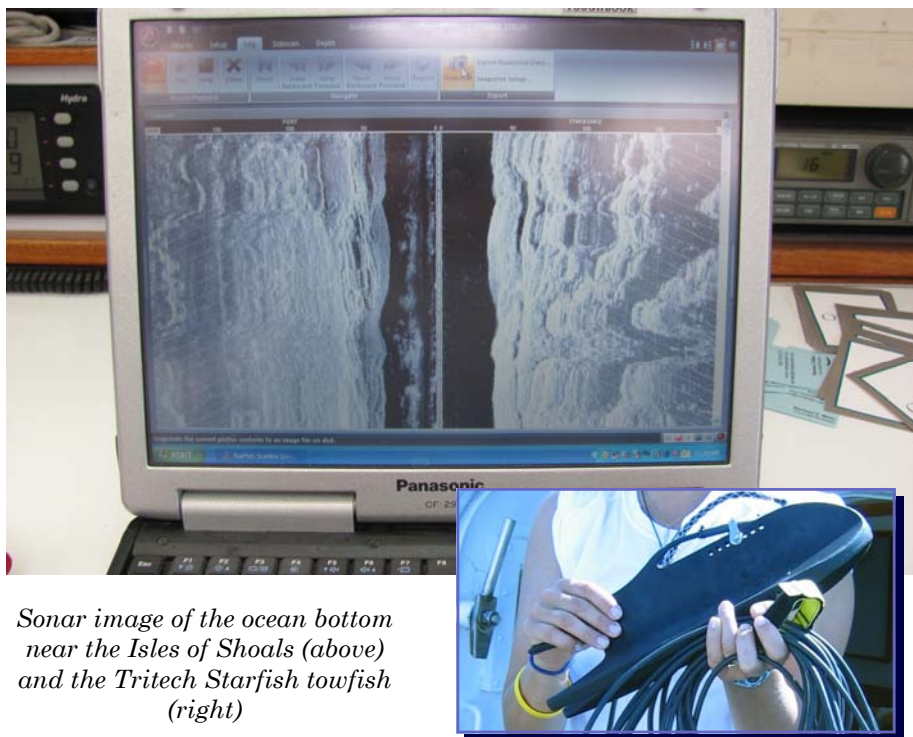
Side scan sonar is one, relatively inexpensive technique that has been used in several areas to study the ocean bottom, although our project is the first to use it to look specifically for derelict fishing gear in New Hampshire waters.

Side scan sonar provides a way for us to "see" into the often murky, cold waters of the Gulf of Maine using sound. The word *sonar* is an acronym for Sound, Navigation and Ranging, and it is a technique developed by the U.S. Navy after World War II to look for explosive devices on the ocean bottom.

Side scan sonar involves towing a torpedo-shaped device, called a towfish, from a vessel. The towfish sends out pulses of sound that are reflected by the ocean bottom and any objects there. As the sound bounces back, the sonar device interprets its travel time and amplitude turns it into an image. As continuous images are stitched together, one can view what looks like a video of the ocean bottom on a computer screen.

A Famous Sailing Vessel

After I met Rachael Miller of the *Rozalia Project* (www.rozaliaproject.org) at the 5th International Marine Debris Conference in March 2011, we decided to work together on searching for derelict fishing gear in the Gulf of Maine using *Rozalia's* vessel *American Promise*. This 60-foot vessel was made famous by Dodge Morgan, who sailed it solo around the world in 1986.



Sonar image of the ocean bottom near the Isles of Shoals (above) and the Tritech Starfish towfish (right)

Subsequently, the ship served as an offshore sail training vessel at the U.S. Naval Academy. Now, its mission is not to train sailors, but to find trash. They had the equipment, we had the knowledge of local waters, so it was an ideal partnership as we started our search off the coastline of New Hampshire and the Isles of Shoals (which, as you may know, are 9 islands about 5 miles off the coastline and on the border of Maine and New Hampshire.)

The actual search process was both high- and low-tech. As we cruised slowly off the NH coastline, those of us with strong stomachs stayed in the boat's cabin as we rolled a bit and watched a "video" on a laptop screen – this video displayed whatever the Tritech Starfish side scan sonar towfish dragging behind the boat "saw" as we towed it. If we saw an 'object of interest' (e.g., a potential derelict lobster trap, or maybe even a shipwreck!), we'd take a 'snapshot' of the image on the laptop, note the waypoint electronically on a nautical chart displayed on an iPad, and, for extra backup, also on a paper data sheet. Spotters up on deck looked for active lobster buoys

– if we saw a line of traps on the sonar image and those seemed to match up to active buoys seen by the spotters, we knew not to count the traps on the bottom as derelict gear.

Over 4 days, we cruised over 20 miles along the coastline from Portsmouth to Rye, and out to the Isles of Shoals. One of my favorite parts was cruising right near White Island (where the Isles of Shoals lighthouse stands) and seeing the granite on the ocean bottom reflected on the sonar almost exactly as if I was looking at a real piece of granite (see image above).

During the week, we also held a successful "Trash Bash" (funded by the Boat U.S. Foundation) in which we talked about the project with many folks who came to tour the *American Promise*.

Marine Debris to Energy

This was all done as part of our Marine Debris to Energy Project, conducted in partnership with NH Sea Grant, UNH Cooperative Extension and Dr. Jenna Jambeck at the University of Georgia. The project was named because as part

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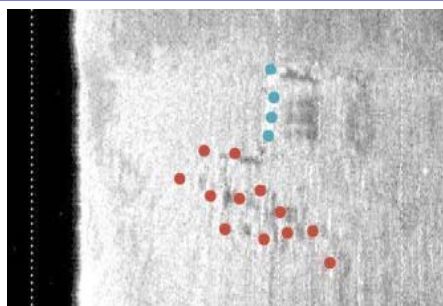
of the project, we're working to turn old fishing gear into electricity by sending it to a waste-to-energy plant at Wheelabrator Technologies. But the project is really a holistic effort to study, monitor and clean up marine debris from southern Maine to northern Massachusetts.

How Much Did We Find?

After analyzing the images, Rozalia Project counted up 1,570 *potential* derelict lobster traps over 28 miles surveyed. This is a lot of gear, but on the other hand, it wasn't in the "clumps" that we might have expected.

What's Next?

In 2012, we'll be doing more survey work, and some ground truthing to make sure that what looks like derelict gear on the sonar images is actually derelict gear. We'll also be working with local officials, fishermen, and the Rozalia Project in the first concerted effort to remove gear from New Hampshire waters. During the retrieval process, we'll also work to

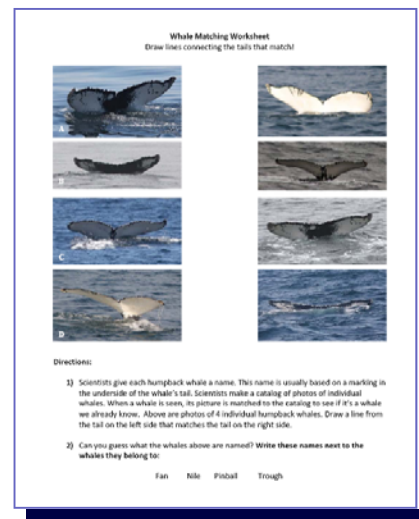


Sonar image marked to show an active trawl of traps (straight line of dots near top) and a cluster of potentially derelict traps.

document any marine life in the gear and assess the impact of the gear on the marine environment.

We are looking forward to continuing this project in 2012 with further funding from NOAA's Community-based Marine Debris Prevention and Removal Grants Program, the National Fish and Wildlife Foundation's Fishing for Energy fund, and funding from the New Hampshire Coastal Program. The sonar survey was also supported by Optima Bank, Portsmouth, NH and the Kittery Point Yacht Yard, Kittery, ME.

Lessons About Whales and Marine Debris



A whale matching worksheet from our free, new lesson plans on whales and marine debris.

Teachers and homeschoolers: check out our new lesson plans about whales and marine debris. They are chock-full of information, activities and worksheets. You can download a free copy at www.blueoceansociety.org/MarineDebris/. Comments, questions and criticism wanted: let us know what you think!

How to Get Involved

Would you like to get involved in our Marine Debris to Energy project? There are several ways you can help:

- **Always dispose of litter properly.** Bring a bag when you go on a boat or to the beach.
- **Recycle fishing line and gear:** Contact us or visit www.nhmarinedebris.org for drop-off locations.
- **Read our marine debris blog:** nhmarinedebris.blogspot.com.
- **Report litter** you see on the water and on land to help us learn about marine debris. <http://cecf1.unh.edu/debris/getforms.cfm>
- **Join a Blue Ocean Society beach cleanup**, or do your own! www.blueoceansociety.org/Research/schedule.html
- **Adopt a Beach!** 'Adopt' a beach and conduct monthly cleanups. It takes 1-2 hours per month and we'll provide all supplies! More info here: www.blueoceansociety.org/Research/Adopt_beach.html
- **Educators:** check out our lesson plans and interactive web site! www.blueoceansociety.org/MarineDebris
- Check out the **Marine Debris Tracker App:** www.marinedebris.engr.uga.edu
- **Volunteer:** We're looking for volunteers to help with several aspects of the project. Timing is flexible. E-mail jen@blueoceansociety.org for more information.

Adopt a Beach!

- Do you love walking the beach?
- Please consider "adopting" a beach for regular cleanups!

We're Looking for adopters for:

- Bicentennial Park
- Foss Beach
- Great Bay Farms
- Hampton Beach
- North Beach
- Peirce Island
- Rye Harbor State Park
- Seabrook Beach

Call 603-431-0260 or e-mail info@blueoceansociety.org for details!

CURRENT EVENTS

Majority of Sewage Disks Cleaned Up—But We're Still Finding Them...

We faced an unusual challenge this year after 4.3 million small white disks were accidentally discharged from a sewage treatment plant in Hooksett, NH in March 2011. The disks washed up on beaches as far north as Scarborough, Maine and as far south as East Matunuck, RI (and perhaps farther).



Volunteers and town and state beach raking crews were critical in the initial cleanup effort, and then Hooksett hired ENPRO Services, Inc. to do the major cleanup effort and track the disks over time. ENPRO reported in late September that over 4 million disks had been cleaned up and while they have stopped routinely sending crews out for disk recovery, they are continuing to monitor the location

of disks, and will use cleanup crews in response to “significant sightings of discs stemming from tidal, weather or other events.”

While we're not finding thousands of disks on the beach anymore, we are still finding them regularly. Recently, volunteers Linda Gebhart and Cathy Silver reported large numbers of disks in Hampton Beach—with over 289 picked up on the beach in one week.

This lengthy cleanup is to be expected. With the ever-changing marine environment, things don't stay in one place for long, making it difficult to find every single one of these floating plastic disks as soon as we'd like. However, with continued organized beach cleanups and the help of those just out for a walk on the beach, we will hopefully get them all eventually.

A **huge thank you** to the many volunteers who have been helping

with the cleanup effort, and to those reporting by e-mail, phone, Twitter and Facebook the number of disks that you're finding and where. Please continue to do that so we can monitor how long the disks appear on our beaches, and how far they travel!

If you find a disk:

- You can pick it up and dispose of it in the regular trash, but we suggest using gloves as a precaution, as we do for any trash.
- Report your finding to us via e-mail (info@blueoceansociety.org), phone (603-431-0260) or posting on our Facebook page. We'll communicate this info to ENPRO, or you can call them directly at 800-966-1102.

More Than 100 Dead Seals on New England Beaches

This fall, we've been following news about the surprise number of dead seals found on our local beaches. Many of our staff and volunteers also volunteer with the New England Aquarium's Marine Animal Rescue Team, and may be called to assess a live or dead marine mammal on shore. So that makes it extra interesting to us to know when seals are dying in great numbers, and of apparently unusual causes.

So far, according to a NOAA statement, 146 harbor seals have been found dead on the New England coast. This is more than 3 times the average number of strandings for this time of year. NOAA recently declared this an “unusual mortality event,” which allows them to put more funds toward determining the cause and appropriate response.

So far, the cause has largely been



Harbor seal seen from a whale watch on 7/16/11

a mystery, while we wait for lab test results of the tissues of the seals that have been examined. There has been one semi-conclusive result so far—5 of the seals tested positive

for Influenza A virus. NOAA is now trying to figure out whether Influenza A is the cause of the mortality event.

If you see a seal (alive or dead):

- Remember, they are wild animals with sharp teeth. They are also protected under the Marine Mammal Protection Act, and getting close to them could risk transmitting diseases to you or your pets. Stay at least 50 yards (150 feet) away, and keep pets away.
- Call a stranding hotline and report the sighting. Here are two:
 - ⇒ NOAA Fisheries Service's stranding hotline: 1-866-755-NOAA (6622)
 - ⇒ New England Aquarium Stranding Hotline: (617) 973-5247



SCOOP NEWS

Cute Pet Photos Wanted!



Colby (left) and Sophie (right) enjoy the beach. Photo courtesy Ellen Cheverie

You might wonder how that headline relates to our mission of protecting the marine environment. Well, several years ago, as we were doing our monthly beach cleanups, we got really tired of dodging (and picking up) piles of dog waste.

Not only is it gross to look at, but pet waste may carry diseases that are transmittable to humans and contains bacteria that can wash directly into the ocean after a snow or rainstorm. Higher bacterial amounts in the ocean can lead to beach closures.

With a grant from the **NH Department of Environmental Services**, we've been using the opportunity to educate dog owners about the importance of picking up after their pet—thus leading to cleaner beaches and better water quality. With the help of campaign creator Steven Johnson, SCOOP (the Seacoast Canine Owners Outreach Program) was born.

Darci Creative helped us come up with a logo, and with the help of **Barkin' Biscuit**, a natural dog biscuit company, we've been distributing dog biscuits and biodegradable "poop bags" to pet

owners and pet-related businesses with tags that encourage owners to pick up after their pets. We've also been working with towns and the state of New Hampshire to get out over 30 pet waste bag dispensers near beaches and parks. We've also worked with **Ryan Cultrera** of **Small Town Pictures**, who created a couple very funny video PSAs.

This Fall, we asked dog owners to submit their **cutest dog photo**, along with a caption about why SCOOP is important. It's not too late to participate! Upload a photo of your pet to our Facebook page at <http://www.facebook.com/BlueoceansocietySCOOP> and let us know why you think it's important to pick up after your pet!

Want to Help?

We're looking for volunteers to help with this project—timing is flexible and some work can be done from home. Contact us at info@blueoceansociety.org or (603) 431-0260 for details!

Free Dog Biscuits!

These businesses have helped keep our beaches cleaner by distributing free dog waste bags and biscuits. We thank them for their help!

- Eyelook Optical, Portsmouth
- Macro Polo, Portsmouth
- North Hampton Town Hall
- Ocean Valley Veterinary Hospital, Stratham, NH
- Oyster River Veterinary Hospital, Lee, NH
- Pawcassos by the Sea, North Hampton
- Pet City, Seabrook, NH
- Port City Veterinary Referral Hospital, Portsmouth, NH
- Portsmouth Newington Veterinary Referral Hospital (Veterinary Emergency Critical Care), Portsmouth, NH
- Seacoast Animal Hospital, Portsmouth
- Town and Country Animal Hospital, New Boston, NH
- Town of North Hampton
- Town of Rye
- Town of Seabrook
- Town of Somersworth
- VCA Animal Medical Center, Portsmouth



Jack Anderson

Photo courtesy Nancy Anderson

Blue Ocean Society for Marine Conservation

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Visit us online!
www.blueoceansociety.org

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Upcoming Events

- Wednesday, November 16, 2011, 5:30-7:30 PM: **Holiday Social at The Press Room**, 77 Daniel Street, Portsmouth, NH. Join us in the cozy atmosphere of The Press Room (upstairs) for great food and an update on our programs and future plans. View our slideshow of the best whale photos of 2011! All are welcome. Admission is free, with free appetizers and cash bar. Bring your friends! *This program is funded under the Coastal Zone Management Act by NOAA's Office of Ocean and Coastal Resource Management in conjunction with the New Hampshire Coastal Program.*
- November 27-December 2, 2011: **19th Biennial Conference on the Biology of Marine Mammals**, Tampa, FL. We are co-organizing a workshop for educators (register at www.blueoceansociety.org/Workshop) and will be presenting posters on our fin whale research and marine debris web site and lesson plans.
- Saturday, December 3, 10:30 AM: **Beach Cleanup** at Jenness Beach, Rye, NH
- Sunday, December 4, 12:00-4:00 PM: **Holiday Sale & Open House** at the Gov. Langdon House, 143 Pleasant Street, Portsmouth, NH. Stop in for some seasonal cheer at the Gov. John Langdon House! Historic New England and the Blue Ocean Society for Marine Conservation will be offering a selection of gift items to round out your holiday shopping. Free tours of the house, refreshments, and free gift wrapping!
- Thursday, December 8, 4:00-7:00 PM: **Holiday Sale & Open House** at the Gov. Langdon House, 143 Pleasant Street, Portsmouth (see description above.)
- Saturday, December 10, 9:00 AM: **Beach Cleanup** at North Hampton Beach, N. Hampton, NH



For More Information:

Visit www.blueoceansociety.org or www.facebook.com/BlueOceanSociety or call 603-431-0260