



New England
Aquarium

Protecting the blue planet

Right Whale

RESEARCH NEWS

Volume 22, Number 2
December 2013

In this issue:

Local Teens Help Right Whales

A Very Strange Field Season

Where Were the Whales
this Summer?

When Whales Can't be Found
Sponsored Whale Update

A New Sampling Technique

Update on Injury, Entanglement
and Mortality

Keeping Right Whales Safe

The Right Whale Consortium

Faraway Travels

Editor

Marilyn Marx

Contributors

Moira Brown

Marianna Hagbloom

Philip Hamilton

Kathleen Hunt

Amy Knowlton

Marilyn Marx

Heather Pettis

Monica Zani

In this newsletter all photographs of right whales in U.S. waters were taken under NMFS/NOAA permit under the authority of the Marine Mammal Protection Act and the U.S. Endangered Species Act.

Right Whale Research News is produced and published by the New England Aquarium. We welcome your comments and suggestions!

Read more about a particular aspect of our project at www.neaq.org.



Local Teens Help Right Whales

Philip Hamilton

Years ago, Paul McGuinness volunteered with the Aquarium's Right Whale Program in his spare time as he studied to get his teaching degree. Today, Paul is an innovative and enthusiastic science teacher at Cambridge Rindge and Latin High School in Cambridge, Mass. One of his many projects was starting the Marine Conservation Club (MCC), a student-run organization responsible for raising awareness about ocean issues within the school and the wider Cambridge community.

This year, students from the MCC organized an entire week of school-wide activities to raise awareness about the plight of the right whale. There were right whale games and a power point presentation in all the homerooms. They held gift wrapping events and bake sales throughout the year to raise

funds for the Right Whale Research Program, and they hosted a fundraising dinner for interested adults. They also produced a documentary video, *Against the Current: Right Whales and the Escape from Extinction*. The end result of all these projects: They raised over \$1,300 for the Right Whale Research Program while also raising awareness across the city!

On June 5, students from the MCC came to Boston to present us with a check from their fundraising. It was a great opportunity for us to meet some of the kids and celebrate their efforts. Knowing high school students with such dedication, enthusiasm and skill brings us a lot of hope for the future. And many thanks to Paul McGuinness for his passion and support of the MCC in their ambitious efforts!



The Marine Conservation Club presents Philip Hamilton and Amy Knowlton with a check from their fundraising efforts for the Aquarium's Right Whale Research Program. Marianna Hagbloom/NEAq

A Very Strange Field Season

Marianna Hagbloom

This year our research team logged our 34th consecutive field season in the Bay of Fundy (BOF), and it turned out to be a highly unusual one. With continued support from Irving Oil and the Island Foundation we conducted 12 surveys of BOF and on some of those days two other research vessels joined the search. Even given this extensive survey effort we recorded the fewest right whales in August and September since our field work there began in 1979: only five individuals! Two of the five whales were Mom **Catalog #3513**, and her calf, who took us by surprise on August 28 when they swam into a narrow body of water close to our field station in Lubec, Maine. Fortunately, the pair made it back into the Bay, but not without getting a lot of attention! These two would turn out to be the only mother/calf pair we found in BOF. The last right whale sightings of the season came early this year as well,

on September 6, when three adult males were found swimming against the tide and out of BOF. It appears that there was no food to entice them to stay.

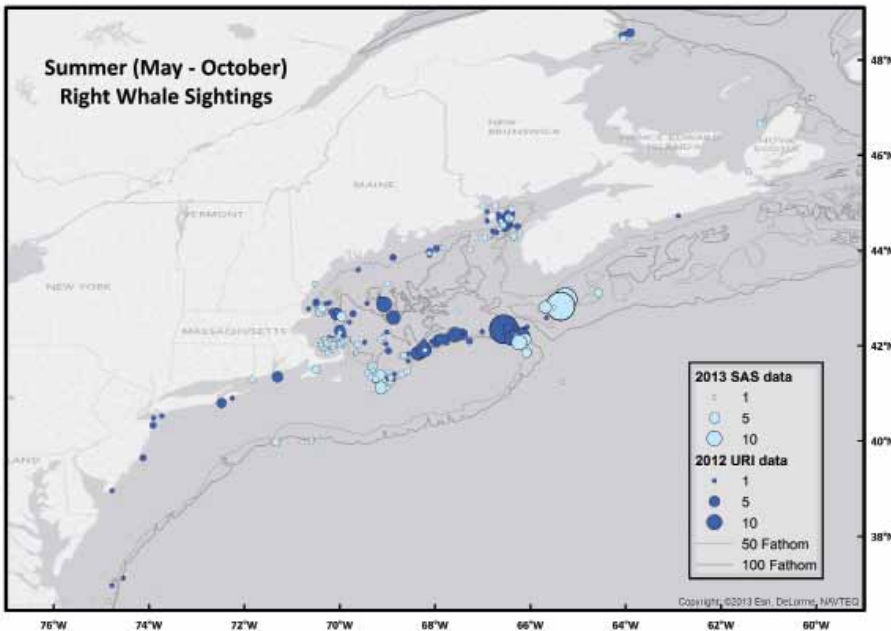
Luckily, thanks to the funding of the Canadian Whale Institute (CWI) by the Habitat Stewardship Program of Environment Canada, we were able to look for right whales in Roseway Basin (RB) and other Canadian waters with two vessel cruises and one aerial survey. These explorations proved fruitful, as we observed about 45 right whales over the course of the three trips. During our September survey we photographed about 38 whales, but the highlight was September 19, when we observed **Phoenix (Catalog #1705)** at the center of a high energy surface active group; it was a thrilling sight after such a quiet season! That day we also sighted **Catspaw (Catalog #1632)** with her fat and healthy-looking

calf—only our second mother/calf pair of the season. In a year when 20 calves were born, we were expecting to see more in these typically popular habitats. The following day took a sad turn: we sighted **Catalog #3560**, an 8-year-old female, with nasty new entanglement wounds and later found **Catalog #3946** entangled with line running through the mouth (see *Entanglement Update*).

Wrapping up this bizarre season with aerial surveys of RB and surrounding waters in late September, the team found only 10 or 11 whales in the area; the large cluster of whales seen two weeks prior had moved on. It seems that the typical feeding areas used by right whales during these months were not as suitable this year, and where the majority of this population spent the summer, we do not know.



In late August **Catalog #3513** and her calf made a surprise visit to Johnson's Bay near Lubec, Maine. This was the only mother/calf pair seen in the Bay of Fundy during the 2013 field season. Johanna Anderson/NEAq



All right whale sightings from May to October 2012 and 2013 that were reported either to the North Atlantic Right Whale Sightings database at URI or NOAA's Sighting Advisory System (SAS).

Data and map provided by NOAA/NEFSC/Christin Khan

Where Were the Whales this Summer?

Philip Hamilton

Change is the only constant, a Greek philosopher once said, and right whales have certainly been embracing that philosophy recently! For the third year in a row, a record number of right whales were observed feeding in Cape Cod Bay during the spring, but after they departed in May few large aggregations were seen in any of their usual habitats. How, one might ask, can we lose 500 right whales? It is when they change their distribution that we remember just how large the Atlantic is and just how well right whales can move throughout it. The short answer to the question in the title is: We simply don't know where the right whales were this summer. But there have been some interesting opportunistic sightings since May that provide us with some clues. During the summer, there were sightings south of the Bay of Fundy, in the Gulf of St. Lawrence, near Cape Breton, and off North Carolina, Virginia and New York. The repeated sightings off the mid-Atlantic in the summer are particularly unexpected, and most of these were far from shore on the edge of

the continental shelf. Throughout the fall, sightings of single animals have continued to trickle in from near-shore New England areas but where the majority of them are remains a mystery. The unusually distributed sightings have many of us wondering: How often do right whales use these other areas, and what do they feed on while there?

Right whales are clearly responding to a changing environment, and most climate change predictions suggest that environmental conditions will be increasingly erratic in the future. The good news is that right whales are demonstrating their ability to respond quickly. The big question is whether the feeding habitats they are now using hold abundant and high quality food. As we begin to discuss how to change our research to better locate and monitor right whales in these new habitats (at least new to us), many of us are holding our breath to see how their health and reproduction changes in the coming years. It is up to the right whales to tell us how they are faring in these changing times.

When Whales Can't be Found

Moira Brown and Marilyn Marx

In the late 1970s, when we first began to look for right whales, little was known of them so we started by asking professional mariners where they saw whales. Slowly over the next 34 years we pieced together a general understanding of the right whale distribution story. However, now the oceans are changing; the whales may be adapting, but researchers are in need of help again (See *Where were the...?*). With only a handful of right whale sightings in two critical habitat areas by mid-August, we notified Canadian colleagues that we were not finding right whales in their usual areas. There are lots of eyes on the water: fishermen, scientists on research vessels, whale watch naturalists, observers on seismic vessels, fisheries enforcement personnel in planes and boats—we just had to alert them to look for right whales and then let us know what they found! It was timely that a reporting system developed by Fisheries and Oceans Canada raised awareness and resulted in several confirmed sightings of right whales.

To learn if right whales were being seen far from the coastal waters of the US and Canada, we contacted a colleague in Iceland to ask if he knew of any sightings from fishing, whale watch or research vessels working in those waters. We frequently checked websites that identify vessels transmitting an AIS (Automatic Identification System) signal (www.marinetraffic.com and www.sailwx.info) and contacted a few of them to see if they had seen right whales. And we reached out to UNOLS, a consortium of oceanographic research vessels (<http://www.unols.org>) and were put in touch with their ships in the North Atlantic. Unfortunately none of the offshore vessels had any right whale sightings, but we were encouraged by their enthusiastic willingness to keep a sharp eye out. If right whales continue to shift out of their well-known habitats in response to a changing ocean these contacts may prove to be an invaluable resource in our future search efforts.

Sponsored Whale Update

Marianna Hagbloom

As curators of the right whale photo-ID catalog for the entire North Atlantic, we process up to 4,200 photographed sightings per year; as we do, we always watch for the sponsored whales so we can update you on their latest known activities.

- **Shackleton (Catalog #2440, 19-year-old male)**

The Provincetown Center for Coastal Studies (PCCS) observed **Shackleton** subsurface feeding in Cape Cod Bay throughout the month of April, and the Aquarium right whale team also saw him there on the April 15 as he was skim feeding.

A sighting from May 12, 2012 was recently identified as **Shackleton**. The Northeast Fisheries Science Center observed him skim feeding in Great South Channel. Although an older

sighting, we've included it in the sightings map (below).

- **Calvin (Catalog #2223, 21-year-old female)**

Calvin also joined the spring feast in Cape Cod Bay. PCCS saw her subsurface feeding alone on April 26, and on April 27 she and an older whale, **Velcro (Catalog #1306)**, coordinated their feeding. Two days later she was observed subsurface feeding with a different whale, **Catalog #3730**. Her last calving was in 2009 so we hope to see her with a calf in 2014.



Shackleton in Cape Cod Bay in early April.
PCCS, NOAA/NMFS Permit #14603

- **Piper (Catalog #2320, adult female first sighted in 1993)**

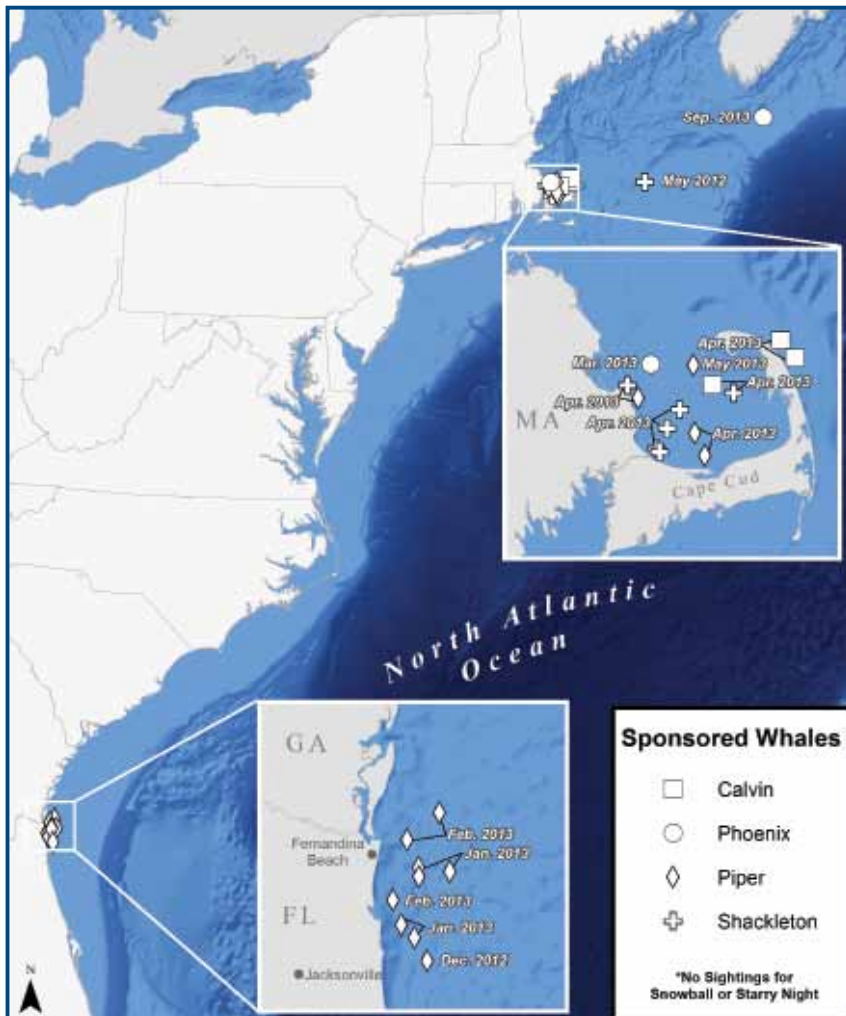
Piper successfully brought her third calf from the calving grounds in the Southeast U.S. to Cape Cod Bay! PCCS watched as both whales had dinner on April 15—**Piper** was subsurface feeding and the calf was nursing. On April 18, the Aquarium team found her skim feeding, and PCCS again saw her feeding in late April and on May 1. We hope **Piper** was able to consume lots of calories to keep nursing her healthy calf!

- **Phoenix (Catalog #1705, 26-year-old female)**

On September 19, **Phoenix** was spotted by Aquarium observers on a Roseway Basin survey for the Canadian Whale Institute. She was the focal female in a surface active group of about 15 other whales! We noticed that her skin looked greyer than usual although we did not detect any injuries. Her last calving was in 2012.

- **Snowball (Catalog #1131, adult male first sighted in 1979) and Starry Night (Catalog #1028, adult male first sighted in 1980)** haven't made any appearances recently, but we hope to have updates for these two in our next newsletter.

Many thanks to all of you who sponsor a right whale—your generous contributions to our program help us be successful in our research and conservation efforts!



Sponsored whale sightings December 2012 through September 2013. The May 2012 sighting of Shackleton is also included. Map: Brooke Wikgren/NEAQ

A New Sampling Technique


Kathleen Hunt

Right whale research fans may recall that in 2011 we began a new research project to see if we could detect hormones in samples of respiratory vapor from North Atlantic right whales (See *Other Research...* in *RWRN Dec 2011*). My colleagues Scott Kraus and Rosalind Rolland and I mounted a 32-foot carbon-fiber pole on our research vessel, *Callisto*, attached wads of nylon fabric to the end of the pole, and spent much of the 2011 Bay of Fundy field season trying to position the nylon over whales' blowholes to capture droplets of respiratory vapor (blow). We're pleased to announce that the project was a great success. That season we managed to get 55 blow samples from free-swimming right whales. All of the samples turned out to

be from individually known right whales, which greatly assisted us in interpreting the hormone results and really illustrates the value of working with such a well-studied population. After many months of lab work, I found that many hormones are indeed present and detectable in right whale blow, including testosterone, estrogen, progesterone, cortisol (a "stress hormone") and even thyroid hormones.

We believe this blow-sampling approach could be a revolutionary new way to study the physiology and health of large whales. This year we published two peer-reviewed papers from this study, and I'm delighted to announce that we've also just landed a major follow-up grant from the U.S. Office of Naval Research to further refine and

develop hormone analysis techniques for right whales. The new grant will focus mostly on blow hormones, but also has funds to continue and expand our long-running fecal hormone database as well. It was quite a coup to land this three-year grant in such a difficult federal funding climate. Perhaps best of all, the grant has provided us with funds to hire Elizabeth Burgess, a post-doctoral researcher who has just moved to Boston from Australia to focus full-time on whale hormone analyses. Liz has years of experience studying a variety of marine wildlife, from dolphins to sea turtles, and has just finished her Ph.D. on dugong hormones. We're delighted to welcome her to the Aquarium's right whale team!



Nylon fabric at the end of a pole captures right whale respiratory vapor. Collecting the vapor is a new way to study the physiology of free-swimming whales. Amy Knowlton/NEAq

Update on Injury, Entanglement and Mortality

Monica Zani

In each newsletter we report on new injury, entanglement and mortalities that the population has suffered in the preceding six months and update the on-going cases. The following is a brief summary of all these known (documented) events.

Mortalities

One mortality event has been documented since our last newsletter (and the only one in 2013). In August several charter/sport-fishing boats off the coast of North Carolina documented and reported a dead right whale. At the time the whale's fresh carcass was being fed upon by numerous tiger sharks and thus great video footage was obtained. The whale was matched to **Patti (Catalog #1311)**, an adult male of unknown age. The whale's carcass was never retrieved due to the distance from shore (approximately 80 miles) and the already extensive shark scavenging at the time of the report. The video obtained did show an entanglement through the mouth but without a necropsy the cause of death cannot be conclusively determined. However, it is likely that the entanglement at least played a role in **Patti's** demise.

Injury

- **Catalog #3705** (6-year-old female): Sighted in April 2013 in Cape Cod Bay with a partially severed fluke lobe due to a vessel strike. The whale had been seen less than six weeks prior without the injury.

Entanglements

Two new right whale entanglements have been documented in the last six months.

- **Catalog #3123** (12-year-old female): Sighted in July off Virginia with an entanglement through the mouth and a considerable amount of trailing gear. Fortunately, she was disentangled the very same day. She was re-sighted five days later, which provided good documentation of the extensive entanglement scarring on the peduncle and fluke but she appeared thin and she has not been re-sighted so her fate is uncertain.
- **Catalog #3946** (4-year-old female): Sighted in September on Roseway Basin (south of Nova Scotia, Canada) with an entanglement through the mouth but little trailing gear. Unfortunately, disentanglement attempts were unsuccessful. The whale has yet to be re-sighted. Prior to her entanglement she was seen throughout the spring in Cape Cod Bay with fairly fresh scars from a previous entanglement.

Previously Entangled Whales

- **Kingfisher (Catalog #3346, 10-year-old male)**: Our longest persistent entanglement case, **Kingfisher** has had a flipper entangled since 2004. He was photographed in September in the Bay of Fundy and appeared to be in good condition, but chronic flipper entanglements have proven fatal for several right whales. We remain concerned about **Kingfisher's** long-term prognosis.

Previously Entangled Whales With No Current Update

Entanglements are documented every year, and not all cases can be resolved through disentanglement. Often we don't have any updates on previous cases because the whale has not been re-sighted. To our knowledge these entanglements may still persist or, in some cases, the whale may have died offshore. Currently there are **eight** such entanglement cases from the past five years. If these whales are not sighted for six years, we presume they are dead.



Catalog #3946 on Roseway Basin in September with an entanglement through the mouth. Two buoys (one white, one orange) on the left side of the whale can be seen. Kelsey Howe/Canadian Whale Institute/NEAq

Keeping Right Whales Safe

Amy Knowlton

For the past three decades, Aquarium scientists have been carefully monitoring the North Atlantic right whale population and reporting on two of the primary human-related impacts: entanglement and vessel strikes. Our work and the work of many of our colleagues has been used to help the National Marine Fisheries Service (NMFS), a federal agency responsible for conserving endangered marine species, to develop important protective regulatory measures. During the summer of 2013, two proposed rules were promulgated by NMFS and we submitted comments on both. The first proposed rule was to extend the existing ship speed rule in perpetuity. This rule, developed by NMFS and implemented in December 2008, requires ships to slow to 10 knots near port entrances and certain high-use right whale areas on a seasonal basis when right whales are present (see *Slowing down and...in RWRN May 2013*). When the rule was under review by the White House in 2008, they required a sunset clause of five years be included so that its effectiveness could be assessed. Because no ship-struck right whales

have been found in actively managed zones since the rule's implementation, NMFS and the right whale community are hopeful that a Final Rule will pass through the rulemaking process intact before the December 8, 2013 sunset date.

The second proposed rule that NMFS developed is related to the entanglement problem. The goal of this rule is to reduce the number of vertical lines used in lobster gear in the Gulf of Maine and other parts of the East Coast (where the co-occurrence of fishing gear and both right and humpback whales is high), leading to fewer whale entanglements. Although we agree to the general concept of reducing the amount of rope in the water column, we believe this rule will not achieve the ultimate goal of eliminating serious entanglements. We have suggested that NMFS also consider the use of weaker ropes that would allow whales to break free from the gear before a complex and potentially serious entanglement occurs. We also noted that as climate change leads to a shift in the whales' food resources



Phoenix (Catalog #1705) lifts her head in the middle of a surface active group on Roseway Basin in September. An entanglement in 1997 left her with prominent lip scars.

KelseyHowe/Canadian Whale Inst/NEAq

and, in turn, their distribution, the use of the co-occurrence concept may not be as effective for reducing entanglement levels.

Overall, we applaud NMFS for continuing their dedicated efforts to implement well-thought-out protection measures for right whales, and we will continue to monitor and provide input on such measures going forward.

For further information, here are links to both proposed rules: <https://www.federalregister.gov/citation/78-FR-34024>
<http://www.nero.noaa.gov/regs/2013/July/13alwtrpvlapr.pdf>

The Right Whale Consortium

Heather Pettis

In 1986, a small group of right whale researchers realized that, while their individual work toward understanding and saving the North Atlantic right whale was important, pooling resources, knowledge and data would give the species the best chance of recovery and survival. As a result, the North Atlantic Right Whale Consortium was born.

Over the years the Consortium has grown to include research, academic and conservation organizations; shipping and fishing industries; whale watching companies; technical experts; U.S. and

Canadian government agencies; and state and provincial authorities, all of whom are dedicated to the Consortium's mission: to ensure the long-term conservation and recovery of right whales in the North Atlantic. The Consortium maintains a website (www.narwc.org) where you may learn more about right whales and efforts to protect them.

The Consortium holds an annual meeting in the fall at the New Bedford Whaling Museum in New Bedford, Mass. The 2013 Annual Meeting of the North Atlantic Right Whale Consortium took place November 6-7 and represented an important opportunity for researchers, managers, conservationists, industry representatives, students and others interested in issues facing right whales to come together. This year, approximately

180 people attended the annual meeting.

Presentations covered a wide variety of topics, and Aquarium researchers presented their work on the North Atlantic Right Whale Identification Catalog, distribution of right whales in the Gulf of St. Lawrence and right whale response to rope color.

The importance of the North Atlantic Right Whale Consortium Annual Meeting to the right whale research community cannot be overstated, and once again, this year's Annual Meeting was a tremendous success. As always it inspired a renewed sense of excitement and commitment to continue efforts to ensure that the North Atlantic right whale population lives on. We celebrate the Consortium's collaborative influence on all of the good work that has been done to save the North Atlantic right whale.



New England Aquarium

Central Wharf
Boston, MA 02110-3399



Faraway Travels

Amy Knowlton

In early December, six members of our team (Scott Kraus, Roz Rolland, Dan Pendleton, Moira Brown, Kathleen Hunt and I) will be heading to Dunedin, New Zealand, to attend the 20th Biennial Conference on the Biology of Marine Mammals. We will each be doing either an oral presentation or a poster on a broad range of topics and species (while right whales are our main focus, our expertise is used to investigate other species, too). We will provide more details about the presentations and the conference in our next newsletter!

Thank you!

We would like to thank all the individuals, organizations and schools that continue to support our research with annual sponsorships and donations. In these difficult economic times, with federal research budgets shrinking, your support is more critical than ever before, and we truly appreciate your generosity. Sponsorship funds are used by the New England Aquarium Right Whale Research Program to support activities that directly contribute to the conservation of North Atlantic right whales.

Your support makes our work possible!

Thank you for being a sponsor. The support of people like you is essential for our work to continue. Please renew your sponsorship today and consider purchasing gift sponsorships for friends and family. www.neaq.org/rwsponsorship

Special gifts that benefit right whale research

Your gift shopping can help fund right whale research! Check out the plush whales, T-shirts and books for sale online. www.neaq.org/rwgifts

You can also call or email to renew your sponsorship or make a purchase. 617-973-6582 or rwale@neaq.org 