



Right Whale

RESEARCH NEWS

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Right Whale Research News is produced and published by the New England Aquarium. We welcome your comments and suggestions! Or, if you would like to hear more about a particular aspect of our project, please see our website.



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Aquarium**

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Old Friends

By: Marilyn Marx

One problem that develops while spending many years studying a particular species is that certain individuals become so familiar to us, they seem like old friends. Anyone who's ever heard Jane Goodall speak about the Chimpanzees of Gombe knows that she feels this way. That same feeling happens to those of us on the Right Whale Team. We see the same right whales season after season, year after year, and in all the different habitats — in the southeast U.S. with a calf, in Cape Cod Bay skim-feeding, or in the Bay of Fundy in a surface active group. By closely examining photos of their scars we can imagine the trauma they've been through — too often an entanglement or a ship strike. But sometimes the scars are mysterious, and for the whales who were already old adults when we met them more than 25 years ago, we think maybe those strange scars were from harpoons or guns, back in the days when they were still hunted. Who knows? The whales remain silent on the subject and we're left to only speculate.

When a whale we know is killed, especially a whale we've been seeing for years, it can be very sad. But worse than that, by far, is seeing one of these old whale friends badly injured or looking terribly sick. We feel awful because we know they're surely doomed, and there's nothing we can do about it. But we have to be professional; we have work to do. We go about the necessary business of recording data, taking photographs, discussing whether or not we need a skin sample. We're quieter than usual, though, without the typical laughter and enthusiasm. Then we silently watch the whale swim away, wondering if we'll ever see it again. The optimists in the group might be thinking there will be a

miraculous recovery, but the rest of us can only hope the whale isn't suffering too much.

There is a right whale that everyone wishes would live forever, and her name is legendary in right whale circles: *Admiral*. She is the most enormous right whale any of us have ever seen. When she's resting at the surface her back is so broad and flat that it looks like a dance floor, and one that would easily accommodate all the researchers who look on in awe. She was named because

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North Atlantic Right Whales Visiting *La Belle Province* of Québec

By: Yan Guilbault

It was last July 20th when I received an email from one of our collaborators in Québec about a North Atlantic right whale sighting in Chaleur Bay. The whale was identified as Catalog #1604, a female who was seen with her calf in the same area one year prior. This was good news since Moe Brown and I were a week away from leaving Boston for the Gulf of St. Lawrence to conduct one of the few right whale surveys in that area.

The Gulf of St. Lawrence is a large inland sea (250,000 km² or 96,525 mi²) 12 times the size of Massachusetts, bordered by the provinces of Québec, Newfoundland, New Brunswick and Nova Scotia in Canada. Between 1995 and 2005, 32 different right whales were photographed there by whale watch naturalists, but despite that, little is known about the presence of right whales in that region. When do they arrive in the Gulf? And when there, what

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Old Friends

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she was huge, and seemed to be the center of the action, hence, “the Admiral of the fleet”. The Provincetown Center for Coastal Studies had a different name for her—*Divine*—for a distinctive scar on her flank that reminded those researchers of a divining rod. Both names fit her well, but it’s *Admiral* that stuck.

She was first photographed in Cape Cod Bay back in 1979, and she’s been seen nearly every year since, but she’s still mysterious. Her age is unknown — she was already a big whale at that first sighting so long ago. We know she’s a female, but she’s never been seen with a calf. Is she so old that she’s past the age of reproducing? Or is she infertile? And if that is the case, then, why?

If a whale can have personality, then *Admiral* (Catalog #1027) has it in spades. Due to two distinctive behaviors we are sometimes able to identify her from a mile away. The first is a curious habit of holding her tail high in the air for minutes at a time. Although there are records of southern right whales “sailing” with their tails in the air, *Admiral* is just about the only North Atlantic right whale that does it. The second unique behavior is the way she surfaces after a long dive. Most whales come up somewhat forcefully in what we call a “first surfacing”, but *Admiral* would rocket out of the water so that her entire head and part of her body were showing. We wondered if she just held her breath as long as she could and then zoomed up to the surface so fast she couldn’t stop. If we looked in the distance and saw a fluke waving in the air, or an explosive first surfacing, we’d say, “There’s *Admiral!*” and excitedly head over to see her.

Years passed, and *Admiral* would always show up, always looking bigger and healthier than any other whale. Ten years ago we had our friend and colleague, Roxy Corbett, paint a mural of *Admiral* on the kitchen wall of our field station in Lubec, Maine. *Admiral* has been our touchstone, and we hoped she was immortal.

Then, in August 2005, a disturbing sight — *Admiral* came to the Bay of Fundy with fresh and deep entanglement wounds around her peduncle and fluke. For the first time in all the years we’d been watching her, she looked unhealthy. We thought that maybe she had just gotten free of the gear, and it would take her some time to recover. We crossed our fingers.



Taken on September 27, 2006, this image shows the deep entanglement wounds on *Admiral*'s peduncle and flukes. Photo / New England Aquarium

She was photographed by the Provincetown Center for Coastal Studies this past spring, and we saw her again in the Bay of Fundy in September. She’s hanging on, but she is certainly failing. It’s an all too familiar right whale story — the entanglement may not directly kill her, but it undoubtedly will contribute to her demise.

Everything dies. We lose friends and family members and it’s heartbreaking. But for those of us who have worked for years on this Project, these whales are friends too. And *Admiral* is one of the dearest. We may never see her again, but she will always live on in our hearts... ●

Marilyn Marx, Assistant Scientist

Marilyn began her work with right whales in 1985 at the Center for Coastal Studies in Provincetown, Massachusetts. In 1994 Marilyn joined the Right Whale Research Project at NEAq, where her main area of expertise is the individual identification of right whales. She has been an observer aboard vessel surveys for marine mammals throughout the Gulf of Maine and the Bay of Fundy, and has flown many aerial surveys. She has participated in large whale research projects in Iceland, New Zealand, Norway, the Dominican Republic and Canada. She holds a B.A. from the University of Wisconsin.

North Atlantic Right Whales Visiting *La Belle Province* of Québec

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areas do they frequent? How long do they stay? These are important questions, especially since the summer habitat of one third of the North Atlantic right whale population remains unknown.

The team arrived on July 28th at the town of Chandler in Québec, our new homeport for the next two weeks. This mission, a partnership between the New England Aquarium and the Canadian Whale Institute, had for its main objective to search for right whales at the mouth of Chaleur Bay and along the southern coast of Gaspé Peninsula in the Gulf of St. Lawrence, where most of the past right whale sightings have occurred.

After a few days on land, we quickly realized that weather was going to be against us. Even though our track lines were fairly close to shore, a major weather system created some strong wind and a significant swell in Chaleur Bay, which made surveying more challenging. We managed to get a couple of days on the water in our trustworthy research vessel *Shelagh*, a modified 46-foot lobster boat, but weren’t lucky enough to find any right whales.

During the third day of surveys, our first and only right whale was spotted. The whale was well photographed and matched to *Crabscar* (Catalog #1155), an old male first seen in 1981 in the Great South Channel, a deep-water area east of Cape Cod (see *The Great South Channel*). *Crabscar*'s sighting history is rather interesting and fairly unique. Since 1981, he was consistently sighted every couple of years until he disappeared from 1994 until 2002. After 2002, he has only been seen in the Great South Channel and the Gulf of St. Lawrence.

Besides right whales, we encountered a few other cetaceans including minke, fin, humpback and blue whales. We also observed seabirds in great number. In fact, the second largest northern gannet colony in the world, with over 60,000 birds, is actually found in Chaleur Bay on Bonaventure Island. The birds get



Annie Lussier and Yan Guilbault of the New England Aquarium stand watch for right whales aboard the R/V Shelagh. The team looked for right whales in the rarely surveyed Chaleur Bay in the Gulf of St. Lawrence.

Photo / Moira Brown and the Canadian Whale Institute

their food on Miscou Bank, 35 miles south of the island, and transit back and forth during the day to feed their chicks.

A secondary component of our project was to develop a network of trained observers to collect right whale sighting data and images throughout the summer and autumn. Coastal communities play a significant role in the recovery of the endangered right whales and without their contributions it would be more difficult to implement conservation measures. In the Gulf of St. Lawrence region, we worked with Jean-François Blouin from *Centre d'Études et de Protection de la Baleine Noire du Saint-Laurent* to coordinate the observers and submit their sighting information to the North Atlantic Right Whale Catalog at the end of their field seasons. We have received information on 13 right whale sightings in the Gulf of St. Lawrence from this past summer, including six with accompanying photos. Every sighting in that region is highly valuable because it gives researchers more insight into some of the puzzling mysteries that remain about right whale migration and habitat use patterns. ●

Yan Guilbault, Assistant Scientist

In 2003, Yan earned a B.S. in Biology from McGill University, Quebec, Canada. Shortly thereafter, he began working seasonally with the Right Whale Project in the Bay of Fundy and Florida. He recently moved from Montreal and joined the research lab full time. He is currently maintaining the North Atlantic Right Whale Consortium website as well as processing and cataloging photographs.

Bay of Fundy and Roseway Basin Field Seasons August – September 2006

By: Lisa Conger

As all summer field seasons bring around the familiar, they also inherently bring about new memories unique to that particular year. We researchers pack up our lives and move to the easternmost point of the United States - Lubec, Maine - which has been home to our fieldwork since Scott Kraus started the Right Whale Project in 1980. That is the familiar. There's the same beautiful landscape, same twenty-plus foot tides roaring through the narrows between Lubec and Campobello Island, same reliable research vessel (*Nereid*), same rambling house in the middle of town that serves as the field station, many of the same friendly local faces there to welcome us and fill us in on the happenings since we were there last. But this year also brought a host of new guests and happenings that will set the 2006 summer apart from others.



A large surface active group (SAG) photographed while surveying the Roseway Basin Conservation Zone, south of Nova Scotia. Photo / New England Aquarium

During the first few weeks of the season, members of the Right Whale Team worked diligently to ready our newest boat, the *R/V Galatea*, for a journey to Nova Scotia. The *Galatea* and half of the team would leave Lubec to work out of Cape Sable Island (CSI), Nova Scotia, in order to monitor right whale activity in Roseway Basin, located 30 - 50 miles south of Nova Scotia. On August 23rd, five members of the team set out for the 10-hour cruise to CSI. They hit the ground running, and surveyed the western portion of the Roseway Basin Conservation Zone during two of the next three days, finding some lone right whales as well as one large 20-30 animal surface active group (SAG).

After that initial busy start, though, the CSI crew was stuck on shore for 7 days by a spell of bad weather. Unfortunately, that stretch of days spent indoors was abruptly broken by the discovery of a dead right whale off of the coast of Yarmouth, Nova Scotia. The CSI team helped with everything from hauling the whale ashore to assisting with the necropsy (see *Right Whales Fight to Survive in Our "Backyard"*).

A few days before the team was to head back to Lubec, the winds and seas on Roseway calmed, so they decided to stay a bit longer to take advantage of the good weather. Four out of the next five days provided calm seas and high densities of right whales in the eastern portion of the Roseway Basin Conservation Zone. The CSI crew returned to Lubec on September 20th having photographed over 100 individual right whales!

Meanwhile, back in Lubec, the remaining members of the team hosted a stream of visiting researchers, colleagues, and a team from National Geographic magazine, which included the accomplished writer Doug Chadwick and photographer Brian Skerry. National Geographic will publish an article on right whales of all oceans sometime in 2008. We were also honored to host Lindy Johnson, who has worked diligently for years as a NOAA lawyer with expertise in International Marine Law to guide conservation measures for right whales through the International Maritime Organization. Also on the guest roster was Roxy Corbett, who, in addition to being an accomplished artist, worked on the Right Whale Project in the 80s and 90s. She came for a visit this past summer and was gracious enough to repaint her 1996 mural of *Admiral* (Catalog #1027) on our new kitchen wall (see *Old Friends*).

We continued to have stretches of good weather and many right whale sightings in the Bay of Fundy through the end of September. As the month came to a close, we began to haul boats out of the water and shut down the field station. When all was said and done, we saw at least twelve of the nineteen calves born last winter and at least 150 individual right whales between the Bay of Fundy and Roseway Basin.

As funding is increasingly sparse (see *Right Whale Research News* Volume 15, Number 1, June 2006 for more information), members of the right whale research community are struggling to sustain these very important long-term studies of the rarest large whale on earth. At this time we are unsure of our future but we certainly hope we will be sending you an update from the Bay of Fundy next year. ●

Lisa Conger, Associate Scientist

Lisa has worked at the New England Aquarium since 1992, studying the North Atlantic Right Whale. She spent eight years flying aerial surveys for right whales off of the coast of Georgia and Florida. Lisa has also worked in the waters of the Bay of Fundy, studying right whales, for the past fifteen years and runs the summer field station in Lubec, Maine.

Sponsored Whale Update

By: Kerry Lagueux

Thank you for sponsoring a right whale, your support helps us continue our mission to protect this critically endangered species. We hope you enjoy keeping track of your whales over the year and will continue in years to come. We have paid close attention to your sponsored whales in the past few months and have some breaking news to report. We have also included a map of the sponsored whales sighted over the past season to help visualize their movements.

In the past few months, we have identified four of the six sponsored whales: *Calvin* (Catalog #2223), *Necklace* (Catalog #1152), *Piper* (Catalog #2320), and *Snowball* (Catalog #1131). As we reported in the spring newsletter, *Piper* was a first-time mom in 2006, so we were excited when our friends from the Provincetown Center for Coastal Studies (PCCS) reported a sighting of *Piper* and her calf. The pair safely made the 1,000-mile journey up the coast from Florida, and was first sighted just east of Cape Cod on April 12th. They were seen again, on April 14th, in the zooplankton-rich waters of Cape Cod Bay. We were also informed by PCCS that our frisky friend *Calvin* was back enjoying herself in Cape Cod Bay. *Calvin* was seen four times during the month of April, from the 10th to the 27th, almost staying a whole month within Massachusetts state waters. *Necklace* was also very active around Cape Cod. He was seen at the end of March and beginning of April involved in a surface active group (SAG), as well as feeding.

NEAq saw *Necklace* five times between August and September in the Bay of Fundy Conservation Area. On one occasion Dr. Susan Parks (our colleague from Pennsylvania State University who researches the acoustic communications made by right whales and their associated behaviors), joined the team for a day on the *R/V Nereid* to record right whale sounds. At one point during

that day *Necklace* was observed “head pushing”, a behavior that resembles a forceful nodding of the head. Simultaneously, Dr. Parks, monitoring the hydrophone (an underwater microphone), heard *Necklace* produce a “gunshot” sound. This amazing sound is described as a “brief broadband sound...[which sounds] like a rifle being fired.” (*Parks, S.E., Hamilton, P.K., Kraus, S.D., Tyack, P.L. 2005. The Gunshot sound produced by male North Atlantic right whales (Eubalaena glacialis) and its potential function in reproductive advertisement. Marine Mammal Science, 21(3), 458-475*). This acoustic behavior and associated head push have been correlated with reproductive activity, either to let female whales know that a male is in the area or as a deterrent to other males. To hear gunshot sounds or other right whale vocalizations visit this site: <http://www.dosits.org/gallery/marinemm/9.htm>

We didn't see *Calvin* herself in the Bay of Fundy this year, but we were thrilled to see her calf from 2005. *Calvin's* calf looked healthy and was seen flippering (slapping a flipper on the surface of the water). This yearling seemed to be doing just fine on it's own.

A small part of the team left the Lubec field station and took *R/V Galatea* to survey Roseway Basin, south of Nova Scotia (see *Bay of Fundy and Roseway Basin Field Season*). Roseway Basin has been described as the singles bar for right whales because the whales spend most of their time socializing in this area. We saw two of our sponsored whales during these surveys: *Calvin* and *Snowball*. It was *Snowball's* first sighting



Necklace was seen several times in the Bay of Fundy last summer. Photo / New England Aquarium

of the season, and the crew aboard *Galatea* recognized him immediately when they saw the circular white scar above his left lip, for which he is named.

We did not identify *Starry Night* (Catalog #1028) or *Shackleton* (Catalog #2440) in the field this past summer. However, with over 3,000 sightings and over 10,700 images being submitted to the Catalog each year, keeping up with matches can be difficult. Often times we match the whales from a given field season several months after the season is completed. Keep checking back to see if we were able to identify even more sponsored whale sightings. Thanks again for your continued support! ●

Kerry Lagueux, Associate Scientist

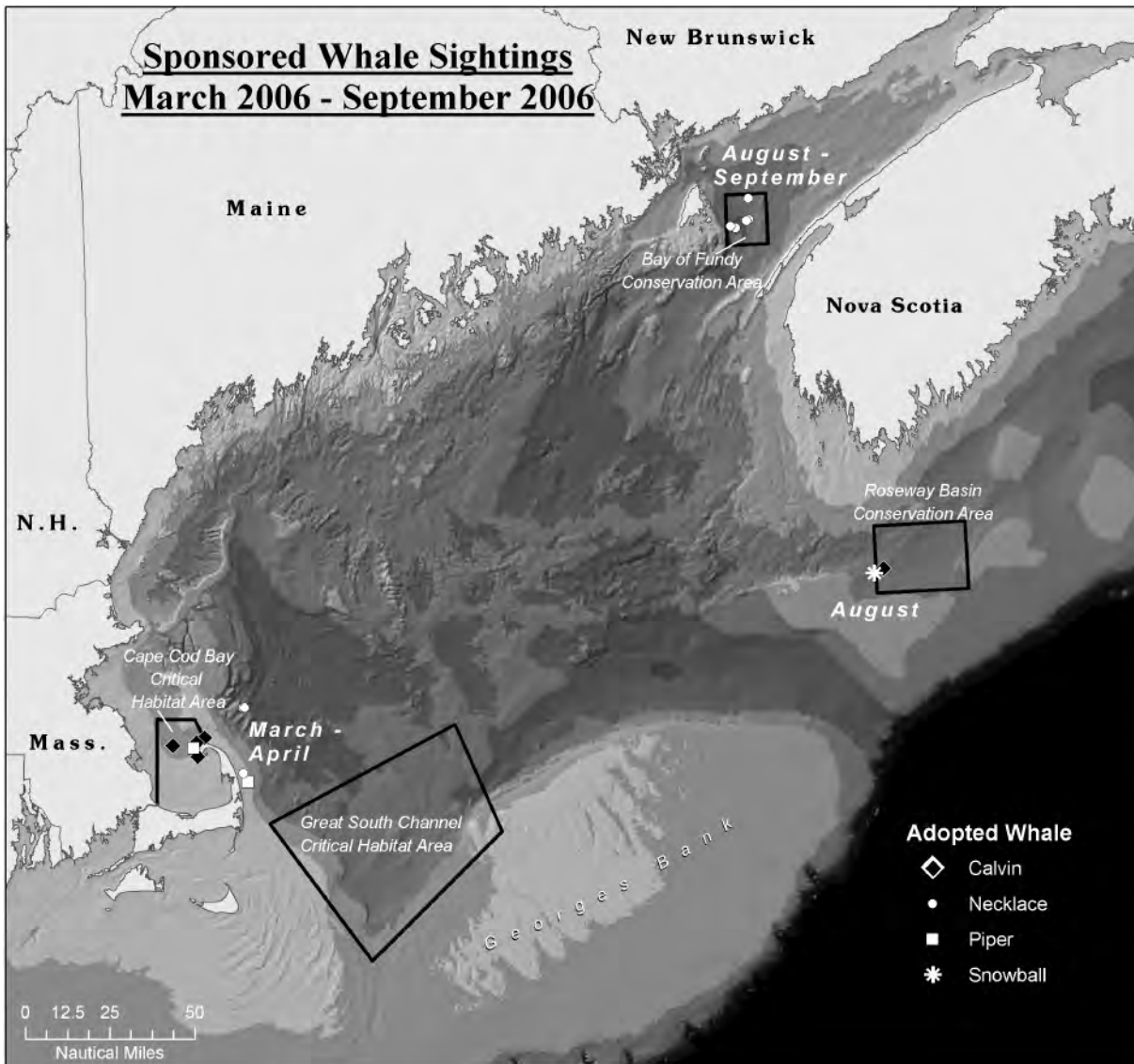
Kerry joined the Right Whale Research Project in August of 2004 as a GIS analyst. His research interests include species-habitat relationships, habitat modeling, and integrating GIS technology into conservation. Currently, he is analyzing right whale locations relative to oceanographic variables. His past research ranged from modeling Chinook salmon habitats in the Pacific Northwest to analyzing elk distributions in Wind Cave National Park. Kerry has B.A. in Geography from San Diego State University and a M.S. in Geography from Western Washington University.

Sponsorship Notice: The cost of sponsoring a right whale will be increasing to **\$45** beginning January 2007. Your tax-deductible donation directly supports the research and data analysis costs of the Right Whale Research Project at the New England Aquarium.

Your sponsorship package will continue to include:

- An 8x10 certificate of contribution
- A 4x6 photograph of your whale
- A composite drawing of your whale with the whale's sighting history
- Right whale information sheets describing current research
- A one-year subscription to *Right Whale Research News*, a semi-annual newsletter, which includes articles on current events in the right whale research world, updates on sponsored whales, and maps showing the sponsored whale's recent sightings.

Please see the Sponsorship Form for more information on how to sponsor a right whale.



Map created by Kerry Lagueux / New England Aquarium



The New England Aquarium Trustees enjoy a lunch break on this beautiful day in the Bay of Fundy aboard the R/V Galatea. Photo / New England Aquarium

New England Aquarium Trustees Visit the Bay of Fundy

By: Scott Kraus and Lisa Conger

The Bay of Fundy summer field season has always presented a great chance for interested parties to visit and experience right whale research first hand. A variety of visitors make the trip, from family members and close friends of the NEAq Right Whale Team, to scientists from other fields of work, to film crews and journalists. This year, for the first time, the team was pleased to host a fun and informative weekend for a few of the NEAq Trustees. The group included the new Aquarium president, Bud Ris, and his wife, Margaret. The Trustees began their visit with a day out on the water, aboard the R/V Galatea. The sunny and windless day began with a curious



Who's watching who? The Trustees look on as whale #2710 and her calf curiously approach the Galatea. Photo / New England Aquarium

approach by Whale #2710 and her calf; as the boat sat motionless in the water, the whales surfaced very close by, rolling onto their sides to peer up at us. The water was stunningly clear and the vantage point from the flying bridge on Galatea gave everyone aboard an extraordinary view of one of this year's calves, born in January 2006 off the coast of Florida. The day concluded with sightings of Whale #1503 and #2503, who are mother and daughter, and both had calves in 2006! These sightings allowed the Trustees to see three generations of right whales in the Bay of Fundy...in one day! It was a perfect way to illustrate the type of valuable information that comes from such long-term research projects as ours.

The next day, the Trustees visited a local sea urchin aquaculture project, got into some of the amazing tide pools in the region to seek out new life forms (or at least unfamiliar ones), and visited the Roosevelt cottage and museum on Campobello Island. On the third day the Trustees got a grand tour of the islands around Head Harbor Passage (some with bald eagles), viewed some herring weirs, had a walk down the Eastport waterfront, and rounded off the weekend with a big lobster shindig back at the research field station in Lubec.

This is the first time that a group of NEAq Trustees have had the opportunity to visit the Lubec/BOF field station. They were able to see right whales up close, learn more about them, and talk

with the researchers about why we work so hard to study and protect the whales. We look forward to hosting more Trustee weekends in future years. ●

Scott Kraus, Vice President for Research, New England Aquarium

Kraus received his B.A. from College of the Atlantic, his M.S. in biology from the University of Massachusetts, and a Ph.D. from the University of New Hampshire. He has published over 50 scientific papers on cetacean biology and conservation, and is adjunct faculty at Univ. of Mass. at Boston and the University of Southern Maine. Kraus' recent research is increasingly focused on conservation issues faced by endangered species and habitats, and the difficulties of identifying what animals need to survive in an increasingly urban ocean.

Lisa Conger, Associate Scientist

Lisa has worked at the New England Aquarium since 1992, studying the North Atlantic Right Whale. She spent eight years flying aerial surveys for right whales off of the coast of Georgia and Florida. Lisa has also worked in the waters of the Bay of Fundy, studying right whales, for the past fifteen years and runs the summer field station in Lubec, Maine.

North Atlantic Right Whale Consortium 2006 Annual Meeting

By: Heather M. Pettis

The 2006 Annual Meeting of the North Atlantic Right Whale Consortium was held at the New Bedford Whaling Museum in New Bedford, MA, on November 8th and 9th. The Consortium was formed in 1986 and is comprised of individuals and organizations active in right whale research and management activities. The mission of the North Atlantic Right Whale Consortium is to ensure the long-term conservation and recovery of right whales in the North Atlantic. Members of the Consortium are committed to the coordination and integration of the wide variety of databases and research efforts related to right whales, and to provide the best scientific advice and recommendations for right whale conservation to relevant management groups.

This year, more than 230 individuals representing research and educational institutions; local, state, federal and provincial government agencies; shipping

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Right Whale

SPONSORSHIP FORM

Thank you!

For your generous support of our Right Whale Research Project. If your sponsorship has expired (check the bottom of your certificate), please consider an additional donation or pass this form on to an interested friend.

Thanks again for your support!

For more information visit <http://www.neaq.org/scilearn/research/rtwhale.html>



RIGHT WHALE RESEARCH

New! The new Right Whale Research t-shirt logo was designed by Daniela Weil of Simple Difference Graphics in Houston, Texas. Daniela worked on the Right Whale Research Project in the early 1990s.



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- Calvin Piper Snowball
 Necklace Shackleton Starry Night

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If yes, your name _____

If this is a surprise gift, how can we contact you if we need to?

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T-shirt color:

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Donation (in any amount) \$ _____

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Send complete form with payment to: Right Whale Research Project, New England Aquarium, Central Wharf, Boston, MA 02110-3399

To make contributions by phone, please call: 617-973-6582 or fax (Attention Right Whale Research): 617-723-9705.

* If you don't want to sponsor your whale again but do want to be kept informed about the Right Whale Research Project, you can receive the semi-annual newsletter for just \$15/year.

Whales you can sponsor

Who's Who?

Calvin

(an adult female)



Shackleton

(an adult male)



Necklace

(an adult male)



Snowball

(an adult male)



Piper

(an adult female)



Starry Night

(an adult male)



North Atlantic Right Whale Consortium 2006 Annual Meeting

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and fishing industries; whale watch companies and conservation organizations were in attendance. Those of you who have kept up with Consortium activities over the last few years may have noticed that this annual event grows steadily each year (190 in 2003, 200 in 2004, and 225 in 2005). We are thrilled with the increasing support and interest in the Annual Meeting because it indicates a continued commitment to protecting this endangered species. The agenda for the two-day event included 47 presentations and covered a wide variety of topics, including population biology and distribution, acoustics, health and physiology, publicity, management updates, shipping and entanglement conflict and mitigation, and genetics. One workshop was held in conjunction with the Annual Meeting. It focused on bycatch reduction devices and brought together engineers and researchers to discuss new technologies and their potential for reducing right whale entanglements.

The New England Aquarium Right Whale Team was well represented on the Annual Meeting agenda, with seven members presenting at the meeting. Dr. Scott Kraus and Dr. Rosalind Rolland presented the upcoming release of their book "The Urban Whale". Lindsay Hall provided an update on the Identification Catalog, including a summary of births, deaths, and whales added to the catalog. Philip Hamilton reviewed features of the new digital image tracking system (DIGITS), which has been up and running for over a year. Kerry Lagueux presented his GIS work on the use of fishing vessel trip reports to identify potential conflict zones between fishing activities and right whale locations in the Gulf of Maine, and Monica Zani presented a review of vessel densities and speeds within the Southeast U.S. Right Whale Critical Habitat with the use of Automatic Identification System (AIS). Lastly, Yan Guilbault shared his summer research activities in the Gulf of St. Lawrence (see *North Atlantic Right Whales Visiting La Belle Province of Québec*).

The importance of the Annual Meeting to the right whale research community cannot be overstated. It brings together people committed to right whale conservation to share their work, form new collaborations and brainstorm innovative ways to work towards a common goal: conserving and managing the North Atlantic right whale population. And, as always, it gave everyone in attendance a renewed sense of excitement, commitment and inspiration.

Thanks to all the participants for making the Annual Meeting of the North Atlantic Right Whale Consortium a tremendous success. We would also like to extend a special thank you to the New Bedford Whaling Museum staff, whose assistance in organizing and running the meeting was much appreciated! ●

Heather M. Pettis, Associate Scientist

Heather earned her B.S. from Bates College in 1997 and her Master's in Marine Biology from Boston University's Marine Program in 2001. She joined the Right Whale Research Team full time in 2000. She currently serves as the Secretary of the North Atlantic Right Whale Consortium. In addition to her work at the Aquarium, Heather teaches biology and marine biology at a private school in New Hampshire. Her research interests include population biology and health condition of right whales and its effects on reproductive and population dynamics.

The Great South Channel

By: Philip Hamilton

As part of a three-year grant from the National Marine Fisheries Service, the Aquarium has been using our newest vessel, *R/V Galatea*, to survey the Great South Channel and Roseway Basin - two of the known "offshore" right whale habitats. These two areas often support whales that are never or rarely seen in the Bay of Fundy. Shipboard surveys in these areas are critical for getting better photographs and for collecting skin and fecal samples from these under-sampled individuals.

Great South Channel is a large, plankton-rich region east of Cape Cod.

Although there have been photographed sightings there in all months except November and December, whales are primarily found there in May and June. Unfortunately, those spring months are often filled with fog and wind, making good survey days quite rare. This year we faced a number of additional challenges: several vessel repairs and an extraordinarily rainy May. All combined, these factors delayed our first of only three days on the water until June 5th.

Even with a disappointing number of survey days, a number of interesting and important sightings were made in those three short days. Whale #1628 was sighted. This adult male was last seen in 2001. With only four sightings in the last nine years, he is one of those unusual whales that we rarely see in the well-surveyed habitats. Interestingly, he was sighted later in the year in September in the Gulf of St. Lawrence. Whale #1427 was also sighted. This whale had been entangled in fishing gear from 2002 to 2003. Although seen free of gear in the fall of 2003, he appeared to be in poor health - thin, rake marks by the blowholes, and bad skin condition (see Pettis, H.M., Rolland, R.M., Hamilton, P.K., Brault, S., Knowlton, A.R., and Kraus, S.D. 2004. Visual health assessment of North Atlantic right whales (*Eubalaena glacialis*) using photographs. *Can. J. Zool.* 82(1): 8-19). This was the first shipboard sighting since 2003, and we are happy to report that he appears to be in much better condition. Lastly, we sighted Whale #3445 on our last day out. This whale was born in 2004 and had last been seen entangled in fishing gear off the southeast and mid Atlantic coast in December 2005. There was no rope going across the body and there was no trailing gear visible. However, it was difficult to determine if there was line on the flippers, but we are hopeful that the whale has completely shed the fishing gear.

Unfortunately, this was our last year of funding for surveys in Great South Channel. We hope to return there in future years, as it remains a fascinating area for right whale study. Of the 474 whales in the North Atlantic Right Whale

Catalog, 392 have been seen there at one time or another, but some of those have only been documented from a plane. We have much to learn from these more enigmatic whales. Often we need skin and fecal samples to answer some important questions, and those samples can only be obtained during shipboard surveys. Could some link the interrupted family lines that Dr. Tim Frasier described in a past newsletter (Volume 14, Number 2, Nov. 2005)? Do males and females have different hormone levels in the spring than in the fall? And if so, what does that tell us about their mating system? Funding and weather conditions willing, we may be able to answer some of these questions in future years. ●

Philip Hamilton, Research Scientist

Philip Hamilton began his whale research career in 1986 at the Provincetown Center for Coastal Studies in Provincetown, MA. He joined the Right Whale Project at the Aquarium in 1989 where he now manages the photo-identification catalog. In addition to right whale research, he has also participated in several humpback whale studies. He did his masters work investigating right whale associations at the University of Massachusetts at Boston. In recent years, he has been designing the DIGITS software used to manage right whale images and data.

Right Whales Fight to Survive in Our “Backyard”

By: Amy Knowlton

Unfortunately, it seems that in every newsletter we have to describe more lost or injured right whales. Since the last newsletter (Volume 15, Number 1, June 2006), we have lost two right whales to vessel strikes and three new right whales have been seen entangled.

On July 23rd, a right whale calf was found dead about 4 miles northeast of Grand Manan Island, NB in the Bay of Fundy. The whale was towed ashore to Campobello Island by Mackie Green of the Campobello Whale Rescue Team. A full necropsy (animal autopsy) was conducted by Bill McLellan and Ann Pabst from University of North Carolina, Wilmington, along with folks from the

Atlantic Veterinary College at Prince Edward Island, College of the Atlantic in Bar Harbor, ME and the New England Aquarium. The calf was a female, and at only about 8 months of age, was already 31 feet long (they are about 14 feet long at birth). She had a healthy, thick blubber layer after so many months of nursing. But on her right side, there was a series of 13 propeller cuts that extended through the blubber layer, leaving marks on several ribs. The scientists concluded that the cuts lead to her death.

Based on body condition we could determine that this young whale had been dead for at least one week. In an effort to understand as much as we can about how and where this strike occurred, we sought help from Charles Hannah and Adam Drozdowski from the Bedford Institute of Oceanography in Halifax to conduct a drift analysis of the carcass to determine approximately where in the Bay she might have been struck. We also asked James Wood at Lumatrix, Inc. to conduct an analysis of the propeller cut dimensions. Based on these two analyses, it appears this calf was struck several miles north of Grand Manan Island by a vessel approximately 40-50 feet in length (or possibly slightly larger). At this time, we do not know which of the 19 mothers of the year this calf belonged to. A skin sample was taken for genetic analysis, which may allow us to link this dead calf to her mother.

On September 3rd, the Canadian Coast Guard in Yarmouth, Nova Scotia was notified of an overturned boat about 8 miles off the coast. The Coast Guard vessel *Geliget* responded to this report and, instead of a boat, found a very decomposed whale carcass. After a phone conversation between the NEAq Right Whale Team and the boat captain, it was presumed to be a right whale. The captain was able to confirm this ID using his cell phone to take a picture that he forwarded to the Aquarium via email. The *Geliget* towed the carcass to shore at Kelly’s Cove near Yarmouth



The NEAq Right Whale Team and Yarmouth, Nova Scotia townspeople work together to haul the carcass of this dead right whale to shore. Necropsy results revealed the cause of death was shipstrike. Photo / New England Aquarium

and was met by some of our NEAq Right Whale Team who were in Nova Scotia to conduct surveys (see *Bay of Fundy and Roseway Basin Field Seasons*). After an immensely cooperative effort between the Canadian Coast Guard, the New England Aquarium crew, heavy machinery operators, and many local townspeople who came to see the activities, the whale was finally brought ashore that evening. The next day a contingent led by Michael Moore of Woods Hole Oceanographic Institution arrived via ferry from Bar Harbor, Maine and began a necropsy that afternoon. Over the next day and a half, with assistance from the New England Aquarium, Canada Department of Fisheries and Oceans, and a number of volunteers, the crew was able to strip off (or “flense”) the whale’s skin and blubber all the way down to the bone. Because the carcass was so decomposed, little could be learned from the internal organs but once the team flensed down to the skeleton, they could see that the animal had suffered a major blunt trauma, which broke many bones in the spinal column. In other words, a shipstrike killed this adult female. We again used the expertise of the team from Dalhousie University to conduct a drift analysis using an estimate that she was at least two weeks dead (due to her decomposed state). The analysis showed that the strike probably occurred on or near Roseway Basin, a critical summer habitat for right whales. In a strange twist of fate, on the same day

we received the drift analysis results, a mate aboard Maine Maritime Academy's sailing vessel *Bowdoin* sent us images of a whale carcass he'd seen and photographed back on August 24th just north of Roseway Basin. The images showed a dead right whale and we were able to confirm it as the same carcass found on September 3rd. So, these allowed us to both ground-truth the drift analysis, which was very accurate, and realize that efforts to educate students in merchant marine academies were proving invaluable to our understanding of when and where these strikes occur. Because the carcass was so decomposed, we were unable to obtain any photo-identification information, so we await genetic identification from our collaborators at Trent University in Canada.

On the entanglement front, we have had three reports of entangled right whales since June, and all were from the Bay of Fundy. Two of the three sightings were not photographed; therefore we do not know how serious the entanglements are. One of the three was seen by the New England Aquarium team on September 27th, one of our last days out for the season. We initiated a disentanglement effort for September 28th. Although the team did see the whale, relocation and disentanglement were unsuccessful, as we could not keep track of the animal amidst the large quantity of whales in the Bay. The whale appears to be a juvenile with a single loose line across the back. We do not know exactly where the line originates – from the mouth or around the flipper. Hopefully this animal will shed the gear on its own, but only time will tell.

Several previously entangled whales remain entangled and the prognosis for some of these animals is poor. We are concerned that the whales that have not been sighted in a number of years may have succumbed to chronic entanglement injuries.

Both entanglements and ship strikes continue to plague this population. Management efforts on both issues are underway in both the U.S. and Canada but the process is difficult and lengthy. We continue to document each event we see and provide information to both

governments in an attempt to assist their efforts in managing this endangered species that is struggling to survive right in our own “backyard”. ●

Amy Knowlton, Research Scientist

Amy, after graduating with a bachelors' degree in Geography from Boston University in 1982, began as a part-time volunteer on the Right Whale Project in 1983. She became full-time in 1988. Amy holds a Masters degree in Marine Policy from the University of Rhode Island with a focus on shipping regulations and protection of right whales from ship strikes. She has a strong interest in meshing science with policy to help develop effective protection measures for right whales.

Right Whales on the Web: An Update

By: Yan Guilbault, Philip Hamilton and Kerry Lagueux

In the November 2005 newsletter (Volume 14, Number 2), we described three new right whale websites: the North Atlantic Right Whale Catalog website, the Marine GIS website, and the North Atlantic Right Whale Consortium website. At that time each was in a different stage of development but now all three are finally complete. We'd like to give you an update.

The Catalog website (www.neaq.org/rwcatalog) is geared towards teaching people about right whale photo-identification and is used by budding scientists, seasoned researchers and everyone in between. It has a great deal of detailed information about how to identify individual right whales, including example images for all the features that are used during matching unidentified whales to the Catalog. Visitors to the site can now peruse photos of all whales in the North Atlantic Right Whale Catalog. The Catalog search page returns some primary images for each whale as well as a composite drawing that summarizes all of their identification features. You can see a sighting history for each whale and information on its age, sex, name, birth year, date last seen, and whether it is a known mother. Because all of these fields are tied directly to the live Catalog database being used by the researchers

on a daily basis, they are updated automatically as new information about a whale becomes available. There is also an interactive matching game that lets people try their hand at matching and gives immediate feedback about how they are doing. Right whales are odd looking beasts and this game is meant to teach people how to pick out the important identification features. Once they have gained some confidence, they can try doing a search in the actual Catalog. Lastly, we have added contact information for scientists who are interested in trying our new DIGITS software for use in other photo-ID based research projects. DIGITS (Digital Image Gathering and Information Tracking System) is a matching software that was developed by the Aquarium in conjunction with Parallax Consulting LLC with a grant from the National Science Foundation. The software is comprehensive and is available for use from the New England Aquarium.

The Marine GIS website (www.marinegis.org) has been launched, revamped, and is better than ever. With the tremendous efforts of our volunteer graphic designer, Annie Lussier, we have created a great new website that explores the geospatial world of right whales. At this website you can learn about Geographic Information Systems (GIS) and how we are using GIS in many of the projects here at the Aquarium.

Several projects are highlighted on this website. First, the Right Whale Mapping Project, which is an atlas of all right whale sightings and survey effort in the Gulf of Maine over the past 26 years. In this section, you can explore these sightings, as well as survey efforts by year, month, season, and see individual right whale movements. Another project featured on the website concerns the conservation efforts in Canadian waters and the importance of GIS to help move the shipping lanes in the Bay of Fundy and in the newly proposed “Area to be Avoided” in Roseway Basin. Next, visitors can delve into the world of remote sensing of the ocean and how we are using this technology to explore right whale arrival times in the Bay of Fundy. And last but not least, Sponsored

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Right Whales on the Web: An Update

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Whale maps can be found on this webpage, allowing sponsors to track their whale over the past few years!

This site also hosts all the GIS activities we are doing here at the New England Aquarium, so you will find many other interesting topics. Have fun exploring the animations, maps, and pictures on this site. If you have any questions

about the GIS website please send an email to Kerry Lagueux (klagueux@neaq.org).

The North Atlantic Right Whale Consortium website (<http://www.rightwhaleweb.org/>) was completed last winter but will be updated throughout the year with new scientific literature and right whale images. The images are available for educational purposes without special permission, so feel free to use them in your presentations or

school projects! Information on the different members of the Consortium, including links to their respective websites, can be found in the "Partners" section.

These three websites provide easy access to an extraordinary amount of information about right whales. Please take a few moments to visit each of them and let us know how you like them!



The New England Aquarium is proud to announce that The Fairmont Copley Plaza in Boston has joined our corporate sponsors this year with a donation to the NEAQ Right Whale Research Project. The Right Whale Team extends sincere gratitude to The Fairmont Copley Plaza for support of efforts to study and protect North Atlantic right whales.

THANK YOU!

We would like to thank all of the individuals, organizations and schools that continue to support our research with annual sponsorships and donations. Your support is critical to our work and we appreciate all of your efforts. In the last year, your generous donations have provided these important resources to our project:

- Travel to and participation in implementation team meetings responsible for the recovery of right whales under the Endangered Species Act
- Field supplies in support of field studies and continued updating of the right whale catalog
- Travel and supplies for disentangling efforts