



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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When "Soft" Money is Hard to Find

By: Philip Hamilton and Scott Kraus

People often ask us where we get the funding to conduct this important research on right whales. The majority of our funds come from grants and contracts. This is called "soft" money because it is not as dependable as a salary from an institution. Over the years, these grants and contracts have come from a variety of sources, but the largest and most consistent source has been federal dollars granted to us through the National Marine Fisheries Service (NMFS), a department of the National Oceanic and Atmospheric Administration (NOAA). The NMFS is mandated under the Marine Mammal Protection Act and the Endangered Species Act to monitor and manage endangered marine animals, such as right whales. For many years, NMFS has financially supported the North Atlantic Right Whale Catalog, which is the primary tool used to monitor this population. Over the past six years NMFS has also supported supplementary work in several research areas including our Bay of Fundy surveys, some offshore (such as Great South Channel and Roseway Basin) surveys, and aerial surveys in the calving ground off Florida and Georgia.

Recent governmental budget cuts have drastically reduced the amount of funds available from the federal government for this research. The Catalog and the southeastern aerial surveys will likely continue, but many of our other right whale research initiatives have lost their funding. Research programs on scarring from entanglement and ship strikes, assessment of body condition and health, the collection of skin

samples for genetic analyses, and collection of feces for health and hormone analyses, will all cease by the end of 2006. The offshore and Bay of Fundy surveys, which allow us to collect photographs and samples for a multitude of studies, will end after September 2006. The loss of this latter component is by far the most distressing as we have had an unbroken data collection record in the Bay of Fundy since 1979. Such a long time series of data is extremely rare and profoundly valuable.

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Mortality Update

By: Heather M. Pettis

In the Right Whale Research Office here at the New England Aquarium, we often talk about how nice it would be *not* to have to write mortality updates for the biannual newsletter. However, the sad and unfortunate reality for this population is that rarely do we have a six-month stretch without at least one mortality event. The past 6 months are no exception.

On January 10th, 2006, the Florida Wildlife Commission (FWC) received a phone call from a local fisherman reporting a dead whale floating just northeast of the St. John's River, in the critical calving habitat near Jacksonville, FL. The New England Aquarium right whale survey team flew to the reported location to determine whether the carcass was that of a right whale. Unfortunately, it was identified as a right whale calf and the aerial team noticed that the flukes of the animal were completely severed, which immediately suggested that a ship strike might have been the

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When “Soft” Money is Hard to Find

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Because the priorities of the federal government have recently shifted away from ocean and environmental issues, we are now attempting to broaden our base of potential funding sources. Recent support from foundations and corporations has been heartening, and we hope to engage additional organizations concerned about the future of the right whales and our oceans. In the meantime, we thank all of the readers of this newsletter, especially those who sponsor a right whale, for your long-term commitment to this species – what you may consider a small contribution really has a large impact at a time like this! ●

Philip Hamilton, Research Scientist

Philip Hamilton began his whale research career in 1986 at the 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 used his dog “Bob” to help locate and retrieve floating right whale scat, which is analyzed for a myriad of factors.

Scott Kraus, Vice President for Research

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.

Mortality Update

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cause of death. The NEAq aerial survey team documented no other right whales in the near vicinity. The Coast Guard was dispatched and they towed the whale to a site in the St. Johns River where it was hauled up onto a beach for a full necropsy (animal autopsy). During the necropsy researchers identified the calf as a male and found four massive propeller lacerations along the right side of the animal, including one that caused the amputation of the flukes. With this information, researchers concluded that the cause of death for this calf was a ship strike resulting in major lacerations and trauma. As a result of this strike, a petition was submitted to the US Coast Guard requesting them to issue an emergency safety zone for ships to slow their speed when approaching the port of Jacksonville. The Coast Guard denied this request stating that it was not in their purview to take this sort of action and noting that regulation of ship traffic to protect right whales was in a rulemaking process.

Following the necropsy, the race was on to figure out to which mom this dead calf belonged. It took nine days to do so, but with the assistance of all of the survey crews working in the southeast U.S., we determined that right whale #1243, *Magic*, had most likely been the unfortunate calf’s mother. There had been several sightings of *Magic* with her tiny calf tucked in close beside her, most recently on January 5th. At that time, the calf was looking and behaving normally. But on January 19th, *Magic* was seen swimming alone, no calf in sight. Despite her loss, we are hopeful that *Magic* will return to the calving ground in the near future to give birth again.

On January 22nd, more bad news came our way. That morning, the Coast Guard received a report of a dead whale 20 miles southeast of Jacksonville, Florida. The Florida Fish and Wildlife Research Institute (FWRI) aerial survey team confirmed the dead whale as another right whale calf and by late that

same evening, the carcass was towed in to shore for a necropsy scheduled for the following day.

During the necropsy of this second dead calf, a female, researchers observed evidence of both shark bites as well as linear and net indentations suggestive of entanglement in monofilament netting. No definitive cause of death has been established for this whale, as researchers are awaiting histology results (microscopic examination of tissues collected from the calf), although entanglement is considered to have likely played a role in its death.

The calf has been identified as the calf of right whale #1802. She was first observed with her mother on December 30th 2005 off St. Catherine’s Island, GA (68 miles north of Jacksonville, FL). In this initial sighting, the calf had shark bites on her peduncle, the part of the body forward of the flukes. The calf was



January 8, 2006: One of the last sightings of right whale #1802 together with her calf.

Photo / Florida Fish and Wildlife Research Institute



Magic's (#1243) fourth calf being hoisted out of the water. This photo shows the large propeller laceration that amputated the flukes.

Photo / Florida Fish and Wildlife Conservation Commission

observed again on January 8th off of Jacksonville, FL and in addition to shark bites, other linear scars were visible on her peduncle, possibly the result of an entanglement. The calf was last seen alive on January 11th. Based on these sightings, the calf died between January 11th and January 21st and was probably entangled for between 3 and 21 days before it died.

As a result of this mortality and the indications of entanglement, the National Marine Fisheries Service issued an emergency closure of a whiting gillnet fishery this past April. The fishery opened in the calving area in 2005. The Atlantic Large Whale Take Reduction Team (a team of fishermen, scientists, and conservation groups convened by NMFS) held a meeting and decided to shut the gillnet fishery down permanently to protect right whales.

A third calf is assumed to be dead based on photo-identification evidence. Right whale #1301 was initially sighted with her third calf on December 23, 2005, and the mother/calf pair was subsequently seen several times in January and February. But on March 19th

the FWRI aerial survey team saw #1301 without her calf. We held out some hope that the calf was simply below the surface of the water on that day and could not be photographed. However, in early April, #1301 was sighted and photographed in Cape Cod Bay by herself. Since her calf was much too young to survive without its mother, we have added it to the mortality list.

While we are glad to know that #1301 safely made the journey north through the gauntlet of east coast shipping lanes, we are saddened by the growing list of deaths. These three deaths are disheartening to those of us who care deeply about the welfare of this endangered population. As we continue to work hard to prevent deaths like these, it is our hope that there will be no need for a "Mortality Update" in future issues of *Right Whale Research News*. ●

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.

Efforts to Reduce the Likelihood of Vessel Strikes in the Calving Ground

By: Amy Knowlton

In recent years, the number of calves born on the southeast US calving ground has been relatively high, ranging from 19 to 31 calves born in each of the past six years—a bit of good news for right whales! With this influx of calves into the population, there has also been a concurrent increase of juveniles showing up in the calving ground. Some are

yearlings returning to their birthplace still with their mother, others are older juveniles forming social groups for unknown reasons. Adult males and non-calving females are seen down there as well. The calving ground during the winter months can be home to a substantial number of right whales, sometimes as many as 100 animals. But those same waters are also home to vessels of all sizes – commercial ships, military vessels, shrimp boats, and recreational vessels. Unfortunately, right whales and vessels do not always mix well and there have been a number of recent vessel strikes in the southeast US, including an 11 year old female struck and fatally injured by a 43 foot recreational vessel in March 2005, a calf killed by a large ship in January, 2006 (see *Mortality Update*), a juvenile severely injured by a moderate-sized vessel in March 2006, and another juvenile which suffered a minor injury from a small vessel during the winter of 2006 (see *A Good Winter?...*). This is only a partial list of vessel strikes on the southeast calving ground – at least a half dozen others have occurred there in the past several years.

These vessel strikes are likely accidental but are rarely reported. Of the strikes mentioned above, only the one that occurred in March 2005 was reported because the vessel itself suffered damage. The vessel was moving at over 20 knots and the captain did not see the submerged whale. Though the exact nature of most vessel strikes remains unknown, it is a serious issue and has raised concern about coastal development in the calving ground, especially along the coast of Georgia, a relatively pristine part of the southeast U.S. coast.

In March 2005, the state of Georgia's Coastal Marshlands Protection Committee issued a permit to a developer to allow the construction of Cumberland Harbour. This development would include 900-1,200 homes on the coast as well as two marinas capable of providing dock space for 296 vessels, dry storage for 400 boats, and docking for transient and long-term large vessels. Ironically,

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just four days after the permit was issued, the strike of the 11-year-old female occurred off the coast of Cumberland Island.

Before the project could move forward, the state of Georgia mandated a routine biological assessment be completed due to the potential effects on endangered species. The developer's assessment dismissed any potential threat to right whales from boat interactions on the unsupported theory that the majority of vessels that would use the marina would be smaller vessels that "need to remain inshore due to rough seas" during the winter. And larger transient vessels utilizing the marinas would "normally traverse the Intercoastal Waterway" (rather than the ocean) during that time of year. Clearly this was a misguided assessment – recreational vessels both large and small are frequently documented in open water during aerial surveys and these vessels have caused problems for right whales.

The proposed development is of great concern to many local Georgia environmental groups, for right whales and other endangered species as well as the marshlands. A coalition of groups (the Center for a Sustainable Coast, Georgia River Network, and Satilla Riverwatch Alliance) decided to take the Coastal Marshlands Protection Committee to court to oppose the permit that was given to the developer. With the legal support of the Southeast Environmental Law Center, this case went to trial in November 2005. I was asked to provide written and oral testimony about the incidence of vessel strikes to right whales in the southeast U.S. Aside from reporting the data, I expressed my concern about continuing to develop the coastline and increase small vessel traffic without having any strategy in place to educate small vessel operators and/or to develop regulatory measures to reduce their potential impact on the most vulnerable segment of the right whale population.

On February 6, 2006, Judge Malihi from the Office of State Administrative Hearings, State of Georgia, issued his

decision. He remanded the Cumberland Harbour permit back to the Coastal Marshlands Protection Committee. Of particular concern was the portion of the permit addressing potential effects on right whales. He ruled that the permit issued by the Committee did not include finalized or adequate measures to protect right whales, manatees, and sea turtles. The Court stated:

"The biological assessment has yet to provide what education or enforcement measures will be taken, or the consequences of violation. Therefore, this Court cannot determine whether Respondent [the Committee] properly considered the public interest test in ensuring that there is no unreasonable interference with the conservation of the animals. The incomplete protective measures do not provide adequate basis for this Court to conduct its review."

The court's decision was considered positive news for right whales and the need to develop protective measures was brought to the forefront. However, currently, the developer and the state of Georgia's Coastal Marshlands Protection Committee is submitting an appeal to the judge's orders. As this saga unfolds, we will continue bring you updates in future editions of *Right Whale Research News*. ●

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.

16th Biennial Conference on the Biology of Marine Mammals

By: Yan Guilbault

The 16th Biennial Conference on the Biology of Marine Mammals, commonly referred to as "the Biennial", was held in San Diego from December 12 to 16, 2005. As the name suggests, this international conference occurs every two years in different locations. With more than 2,000 participants, 312 spoken presentations, 887 posters and 14 workshops, it is one of the largest conferences on marine mammal science in the world.

Six researchers from the New England Aquarium right whale office flew from Boston to the much warmer California coast to attend to the Conference. For some of us, it was a first-time experience in the somewhat overwhelming world of international scientific conferences. For others who have attended many such meetings, it was just business as usual. The agenda for the five-day long event included oral presentations and poster sessions, and covered the biology and conservation of different species of seals, walrus, dolphins and whales, as well as polar bears and sea otters.

The New England Aquarium Right Whale Project participated with two posters and one oral presentation. Philip Hamilton's poster, "DIGITS, Digital Image Gathering and Information Tracking System: Software to Process, Match and Track Digital Images and Data for Individual Identification Studies" gave an overview of the software we are presently using to process right whale images. The poster also explained how the software could be adapted to other mammal projects that use photo identification and cataloging. More information on DIGITS can be found at <http://www.neaq.org/rwcatalog>. Another poster, "Observation of a Birth of a North Atlantic Right Whale (*Eubalaena glacialis*)" by Monica Zani, displayed photos documenting this never-before

observed event. Monica is currently working on publishing this story in a peer reviewed scientific journal and we will share more details of the event at that time. Dr. Roz Rolland gave an oral presentation entitled "Determining Reproductive Status of Right Whales (*Eubalaena glacialis*) Using Fecal Hormone Metabolites". She explained that by measuring levels of reproductive hormones in scat samples, researchers can determine if the whale is a male or a female, immature or reproductively active, and whether it is lactating or pregnant. More information on this topic can be found in *Right Whale Research News*, Volume 14, Number 2, Nov. 2005. Other presentations and posters by scientists in the right whale community covered genetics, necropsy results, population dynamics and ship strike and entanglement mitigation.

The Biennial is sponsored by the Society for Marine Mammalogy (SMM), a non-profit organization founded in San Francisco, California in 1981. One of the main objectives of the SMM is to promote the advancement of the marine mammal science field through publications and meetings. In addition to organizing the Biennial, the SMM also publishes a well-known scientific journal, *Marine Mammal Science*.

Overall, the 16th Biennial Conference was a great opportunity to learn more about all aspects of marine mammal research. It was also an occasion to meet other researchers, initiate new collaborations and have good Mexican food with old colleagues.

The next Biennial Conference will be held in Cape Town, South Africa in 2007. More information on the Society for Marine Mammalogy can be found at <http://www.marinemammalogy.org>. ●

Yan Guillbault, Research Assistant

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.

A Good Winter? The Good and the Bad News From the Calving Ground

By: Monica Zani

Each winter the New England Aquarium transports a small team of researchers to the town of Fernandina Beach, located on Amelia Island in northeast Florida. Although Amelia Island boasts miles of white sandy beaches, it is what lies beyond the island that keeps researchers returning each winter. Just to the east of Amelia Island are the shallow, coastal waters that make up the heart of the calving ground and the southeast critical habitat for the North Atlantic right whale.

The New England Aquarium is part of an expansive network of aerial surveys operated by government agencies and non-profit organizations that form the Early Warning System (EWS). Each day, weather permitting, from December 1st to March 31st, the EWS attempts to visually locate all right whales in the calving ground/critical habitat, which extends from South Carolina to Florida. Its purpose is to detect right whales and report the location to commercial, military and recreational vessels in an attempt to reduce the potential for ship strikes within the area.

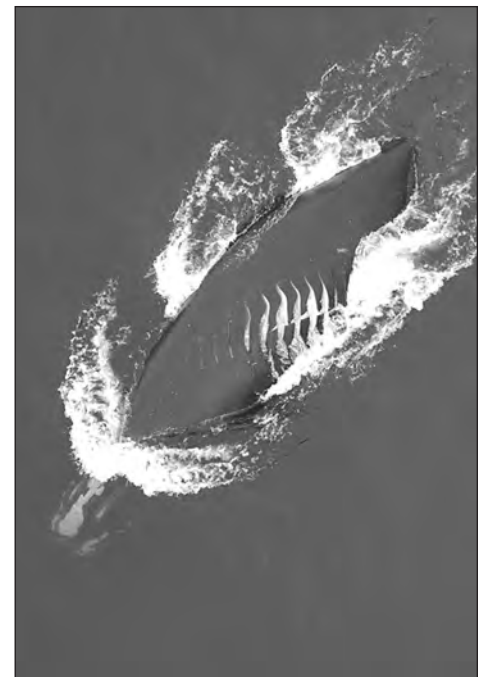
The calving ground/critical habitat of the southeast United States is a busy place. Right whales, including mothers with their newborn calves, swim in waters congested with nuclear submarines, tankers, freighters, Navy warships, commercial fishing boats, tugs and barges, dredges, and numerous private recreational vessels. It is sometimes hard to believe that they all can coexist in such a small space. Or can they?

Each spring I report to you the number of calves that are born to the struggling population of right whales. Although the anticipation for high numbers of calves is exciting, we must remember to take a close look at the

larger picture. Sadly, mortality also plays an important role in the calving season. Last year, we documented 28 calves born, but we also had to report on the death of several reproductively active females. This past winter a total of 19 calves were born, but with that comes the disheartening news that three of those calves have died (see *Mortality Update*).

The season started off with an entangled whale in early December. The whale is a young right whale that was first sighted entangled off the Georgia coast. Although disentanglement network members took action the whale was not successfully disentangled. The current status and health condition of the young right whale is unknown.

In addition to the three deaths and the entanglement in the southeast, three young whales were struck by unknown vessels. Two of the whales were photo-documented this winter by right whale aerial survey teams and the images show extensive propeller wounds extending across their backs. The third whale was a calf photographed in Texas by personnel at the University of Texas



The NEAq aerial survey team documented this young whale with large propeller marks across its back. Photo / New England Aquarium



The 2006 New England Aquarium EWS aerial survey team with their twin engine Cessna Skymaster 337: (from left to right) Project Manager/Co-Investigator Monica Zani, and observers Jessica Taylor, Peter Nilsson, Brenna Kraus, Meredith Montgomery. Photo / New England Aquarium

also with propeller cuts across the back. The current status of these whales is unknown.

On a brighter note, five of the 19 females that gave birth this winter were first-time moms! We are always glad when non-calving females become part of the reproductive cohort. One of those five new moms was an 11 year old named “Boomerang”. *Boomerang* (#2503) was named for the boomerang shaped scar on the underside of her tail. She was first sighted with her calf in early December off the coast of St. Augustine, Florida, which is relatively far south compared to most sightings at that time of year. The next sighting of the mother/calf pair was not until January 16, 2006 in Corpus Christi Bay, Texas! Although a handful of right whales have been documented in the Gulf of Mexico, *Boomerang’s* trip has earned her and her calf the record for the westernmost sighting of any North Atlantic right whale! The pair was seen only once more, on February 27, off Long Boat Key, FL. We are hoping she and her calf made it back to the east coast and are headed north.

While the bad news from the season is disheartening, we are glad to know that some of the mother/calf pairs have already made the long trip up the coast and have been photographed in Cape Cod Bay. We look forward to seeing how big the calves have grown when we are out in the Great South Channel later this spring. ●

Monica Zani, Assistant Scientist

Monica came to the Aquarium in 1993 as a naturalist in the marine education boat programs. In 1999 she began working as a whale watch captain. She became involved in the right whale project as an aerial observer in 2000 and began working full time in 2002. Monica is currently the co-investigator and project manager for the southeast aerial surveys.

A New Home for Right Whale Researchers

By: Lindsay Hall

Since the beginning of the Right Whale Research project in the early 1980’s, this group of scientists has inhabited many spaces. While an old house in Lubec, ME, various condos of Fernandina Beach, FL, and chartered fishing boats become our homes for a week here or a month there, we’ve always come back to our office in Boston, MA between field seasons. However, this “office” has moved around, too, over the years. Beginning with a dusty room surrounded by loud printing presses on all sides, Scott Kraus, founder of the Right Whale Research Project and now the Vice President of Research for NEAq, would find himself scrambling to dust off the few slides of right whales that became the foundation for the photo-identification catalog. As the number of whales identified in the Catalog grew, so did the number of slides and data folders and

the number of researchers needed to keep up. Sometimes we moved to a different office for more space, but other times the building we were in changed hands (and thus, tenants).

But for almost 10 years the right whale researchers could be found on the 4th floor of the old Grain Exchange building on Milk Street, directly across the street from the main NEAq building. Eight of us had our desks in one large room where we could see and hear each other with ease. Three others had offices, one of which doubled as a storage closet. And another three could not fit in that space and were located elsewhere in the building. It was not unusual to notice a computer tower sitting precariously on top of boxes, or over flowing filing cabinets. Despite the crowded quarters, it was a rare occasion to hear someone complain about our space. We were all used to it and quite at home there.

While we truly enjoyed being located near other NEAq departments and staff in the Milk Street building, it became very clear that we were outgrowing our space. In October 2005 it was announced that we would be moving across the street to a building adjacent the NEAq IMAX theatre. We were slow to start the packing process, but eventually we “put it in high gear” and packed up the 25 years of slides, reports, data files and more. It took some culling to fit everything into the boxes. But, for the researchers who just joined the Project in the past few years, it was also a learning experience as we uncovered items such as the first printed Right Whale Catalog, consisting of several yellowed pages and no more than 20 numbered whales with a handful of sightings each.

On Friday January 20, 2006 we left the Milk Street building and on Monday we walked into our new offices. It was a huge change but we are now (almost!) completely unpacked and settled in. Some have offices equipped with new furniture and motion sensor lights, while others have large cubicles equipped with locking cabinets and drawers. Several

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Right Whale

SPONSORSHIP FORM

Thank you!

For your generous support of our right whale research project. We have spent the past six months wrapping up data from the last field season and updating our catalog files of individual animals. 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!



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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* 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?

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(an adult female)



Shackleton

(a young male)



Necklace

(an adult male)



Snowball

(an adult male)



Piper

(an adult female)



Starry Night

(an adult male)



A New Home for Right Whale Researchers

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cubicles now serve as computer and slide table stations for matching slides of right whales to more recent digital photographs. And we have a large storage space/closet that does not double as someone's office! The wall colors are vibrant, our desk chairs are brand new, and, best of all, we have a spectacular view of Boston Harbor. We've come a long way since Scott's first dusty office and the three-page North Atlantic Right Whale Catalog. ●

Lindsay Hall, Research Assistant

Lindsay earned a B.S. in Biology from Allegheny College in 2002. She has worked as a research assistant at Duke University Marine Lab and as an aerial and shipboard observer on marine mammal surveys. She joined NEAq as an aerial observer in 2002. Lindsay is currently the right whale project's Data Coordinator. She also works on processing and cataloging contributed photographs of right whales, organizing NEAq field season data, and right whale education and outreach projects. She is the editor of Right Whale Research News.

The Skinny on Skin

By: Philip Hamilton and Marilyn Marx

We have been tracking this population of North Atlantic right whales through photo-identification for over 25 years now and during that time we have detected some interesting, and often disturbing trends. One change was detected in the late 1990's when many of the whales showed up with white lesions and/or blisters on their skin. Because this seemed to coincide with



A photo of a right whale's back showing "blister lesions".

Photo / Provincetown Center for Coastal Studies

decreased reproduction and poor body condition, we were very concerned that the presence of lesions was a sign of disease in the population. So, using our detailed database which includes the age and sex of many of the whales, we sat down to determine how unusual this actually was, and whether certain whales were more susceptible to this condition than others. The results of this first detailed analysis of skin lesions in this species were recently published (Hamilton, P.K. and Marx, M.K. 2005. Skin Lesions on North Atlantic Right Whales: Categories, Prevalence and Change in Occurrence in the 1990s. *Diseases of Aquatic Organisms* 68(1): 71-82). Here is a brief summary of the paper:

All images of North Atlantic right whales from the photo-identification catalog were analyzed for the presence of skin lesions, which were categorized as white lesions or blister lesions. Of 439 whales photo-analyzed between 1980 and 2002, white lesions were detected on 227 individuals (51.7%) and blister lesions were found on 76 whales (17.3%). The majority of white lesions (72.8%) were detected in the Bay of Fundy where their prevalence increased dramatically in the 1990s (peaking at 40% and 41% of all identified whales in 1997 and 1999 respectively). This correlation between whale density and white lesions in the Bay of Fundy suggested that this lesion type may be the result of a contagious agent, though the data on mother/calf pairs did not indicate transmission from mother to calf. Environmental variables such as salinity may also play a role in the occurrence of white lesions. Blister lesions appeared at low levels throughout the population over the study period. Both lesion types appeared equally on males and females, adults and juveniles. One white lesion type appeared on entangled whales whose survival was questionable. Because we've only obtained one tissue sample of a lesion, the cause/origin and tissue structure of this disease is still unknown.



The white areas on this whale's head (viewed from the right side) are "white lesions".

Photo / New England Aquarium

Since this analysis was done, the white lesions have become less common, but another lesion, a pancake-shaped gray lesion, appears to have become more prevalent. Similar looking lesions in other whale species, called "tattoo" lesions, have been linked to pox viruses. We are now working with Dr. Dave Rotstein, a veterinary pathologist at the NOAA Center for Marine Animal Health and the University of Tennessee to investigate the cause of these and other lesions. Using a combination of skin sampling and future analyses of the photographs of identified individuals, we hope to gain further insight into these lesions and what effect, if any, they may be having on this struggling population. ●

Philip Hamilton, Research Scientist

Philip Hamilton began his whale research career in 1986 at the 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 used his dog "Bob" to help locate and retrieve floating right whale scat, which is then analyzed for a myriad of factors.

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.

Sponsored Whale Update

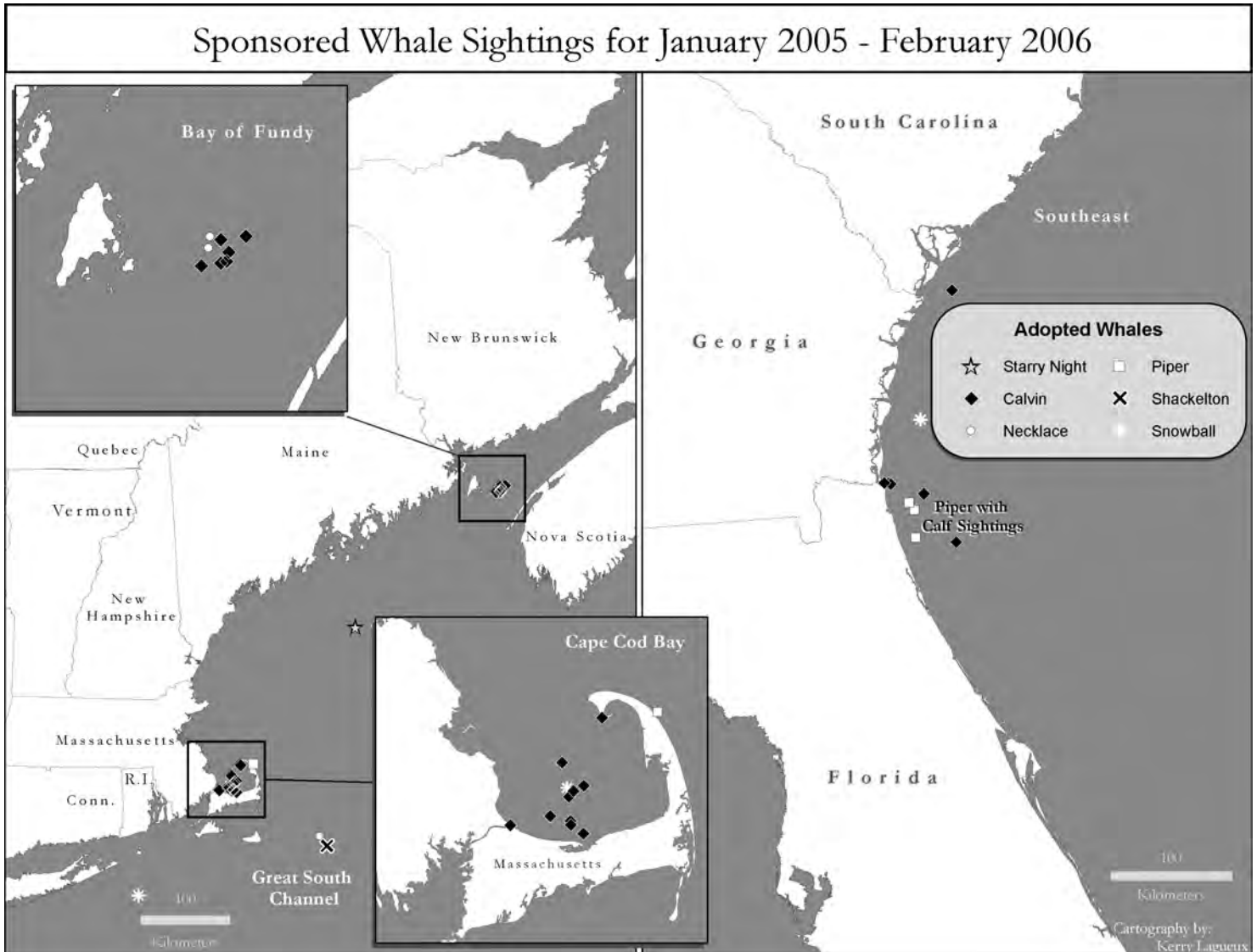
By: Kerry Lagueux

As the whales head up the coast from the winter calving grounds, our fellow researchers have arrived back in the office from another field season of trying to protect right whales from potentially hazardous shipping activities in the southeast U.S. The long process of photo-identification from this winter's field season is just beginning, but we are excited to report that *Piper* (#2320) was identified during the surveys!

Piper may be as tough as the little airplane she is named after. She has survived two entanglements in the past 12 years. The most recent entanglement was observed for over two years and was cause for concern for her long-term health, but it is a new day for *Piper*. Currently, she is free of fishing gear and she is a first-time mom this year! She was first seen with a calf on January 15, 2006 and subsequently, on January 28 and February 3, by the NEAq aerial survey team.



Piper, shown here, was seen on January 15, 2006 with her first calf. Photo / New England Aquarium





This image from the Great South Channel shows the scars that serve as a reminder of how *Shackleton* earned his name. As a calf, he ventured up the busy Delaware River, over 80 miles from the ocean!

Photo / New England Aquarium

In the November 2005 volume of *Right Whale Research News*, we reported that *Shackleton* had not been seen since 2004. However, photo-analysis continued following the production of that newsletter and we were able to identify *Shackleton* on one day, May 20, 2005, in the Great South Channel (GSC). In addition to *Shackleton*; *Necklace* and *Piper* were also seen using the Great South Channel in the spring of 2005. *Starrynight* was seen recently traveling in the Gulf of Maine in December 2005 and will hopefully head south to the Great South Channel this spring. The GSC is about 60 nautical miles east of Cape Cod and is a hotbed for right whales during the late spring and early summer months. We hope to see many of the sponsored whales feeding and socializing out in this unique habitat during our upcoming spring surveys.

Don't forget to check out the accompanying map of the sponsored whales' locations. We saw all of the sponsored whales at least once in 2005, so be sure to look for yours. Last year *Calvin* was the most photographed sponsored whale with over 22 sightings and was seen from Florida to the Bay of Fundy!

Thank you so much for sponsoring a right whale. Your support helps us continue our mission to protect this

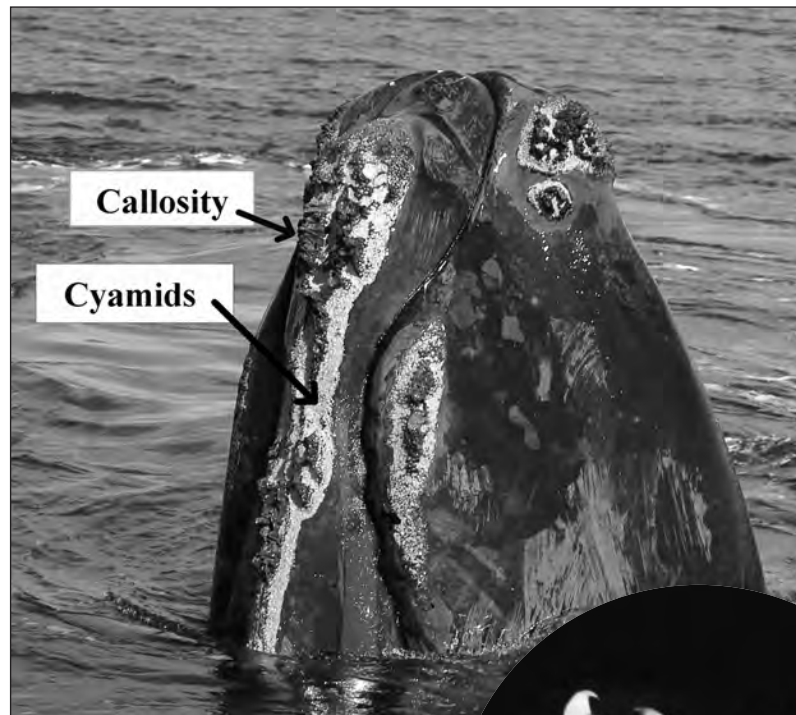
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Fun Fact Corner: Callosities and Cyamids

Many people often assume that right whales are identified using their flukes, like humpback and sperm whales.

In fact, right whales are identified by something at the other end— patterns of “callosities” on their heads. Callosities are raised tissue that appears in some of the same places humans have hair: on top of the head, above the eyes, on the lips, behind the blowholes and on the chin. Each right whale has a unique callosity pattern. The callosity tissue is

dark like the whale's skin, but it is infested with light-colored cyamids, or “whale lice”, an amphipod species that can grow to about half an inch long. They have pincers that enable them to cling tightly to the raised callosity tissue. Because the cyamids are light in color, they provide contrast against the black skin serving to define the outline of the callosity and making matching individuals to the Catalog easier for researchers. Studies indicate cyamids are feeding on the right whales dead skin – perhaps this is the whale's form of personal grooming! ●



Photos / New England Aquarium

Cyamids



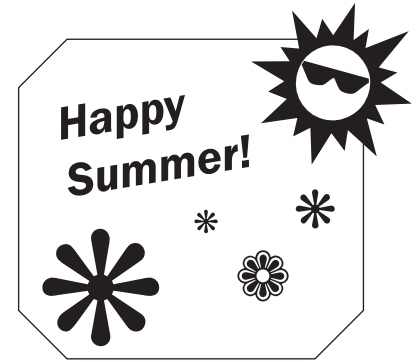
Sponsored Whale Update

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critically endangered species. We hope you enjoy following the adventures of your whales in our biannual newsletters, and will do so in years to come. As always, we will be keeping track of all the sponsored whales and will update you with the latest sightings in the next edition of *Right Whale Research News*. Stay tuned! ●

Kerry Lagueux, Associate Scientist

Kerry joined the Right Whale Research Team 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.



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 disentanglement efforts