

Right Whale RESEARCH NEWS

Anderson Cabot
Center for Ocean Life
at the New England Aquarium

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IN THIS ISSUE:

Expanded Fieldwork Efforts
in 2024

Genetics Links Calf to Its Mom

Two Days, One Call to Action

2024 Calving Season Update

North Atlantic Right Whale Consortium
Releases Its Annual Report Card

Tracking Right Whale Injuries to
Inform the Ongoing Unusual
Mortality Event

Notable Winter Aggregation in
the Great South Channel

Taking Flight

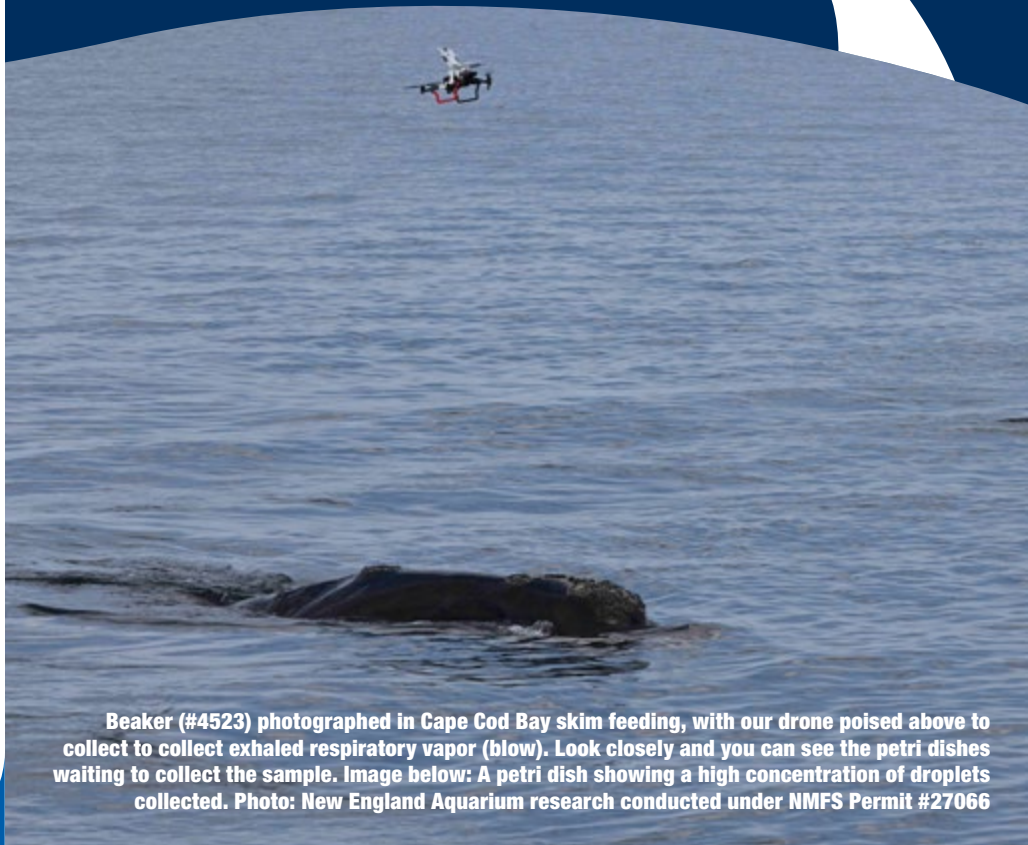
In Case You Missed It

Inspiring the Next Generation
of Scientists

Mortality and Entanglement Report

Sponsored Whale Update

Give the Gift of Endangered
Species Conservation



Beaker (#4523) photographed in Cape Cod Bay skim feeding, with our drone poised above to collect to collect exhaled respiratory vapor (blow). Look closely and you can see the petri dishes waiting to collect the sample. Image below: A petri dish showing a high concentration of droplets collected. Photo: New England Aquarium research conducted under NMFS Permit #27066

Expanded Fieldwork Efforts in 2024

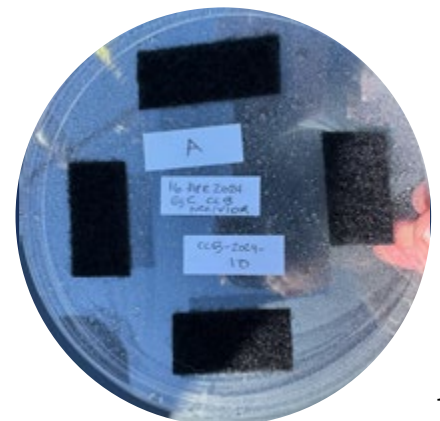
The Right Whale Research Team at the Anderson Cabot Center for Ocean Life at the New England Aquarium has three field efforts in the works for 2024. Two have already taken place in Cape Cod Bay in Massachusetts this spring, and another will take place in the southern Gulf of St. Lawrence, Canada, this summer. Every time we are at sea, we are ready to collect photographs of any right whales we encounter. These photos are essential for monitoring population status and individual health. But this year, we're adding a few more tools to our toolbox.

We continued our collaboration with Woods Hole Oceanographic Institution on their efforts to collect photogrammetry images and exhaled respiratory vapor (blow) samples for microbiome studies with drones and also initiated a new field effort in Cape Cod Bay on a locally chartered lobster fishing vessel. Our primary goal for this new work was to use our drones to collect blow samples for hormone studies to measure stress levels, pregnancy status,

and other physiological metrics. We are working closely with colleagues in the Anderson Cabot Center, as well as scientists from National Oceanic and Atmospheric Administration's (NOAA) Northeast Fisheries Science Center (see story [Taking Flight](#), about the development of our drone program). Time didn't allow us to trial our new drone-based photogrammetry system, which is used for making precise length and girth measurements of whales and, in tandem with other collaborators collecting photogrammetry data, allows for in-depth studies about growth, body condition, and more.

In the Gulf of St. Lawrence, where we will be for six weeks this summer starting in mid-June, our main goal will be to collect vessel-based photographs of all right whales in the area. We will also use our drone systems to collect blow and photogrammetry data where possible. This field effort is being carried out in collaboration with our colleagues at the Canadian Whale Institute. Much of our

time at sea will be spent aboard a snow crab fishing vessel, which is not only an excellent platform, but provides a fantastic opportunity to work closely with and learn from the local fishing community members who remain actively engaged in right whale conservation. All in all, these busy but productive spring and summer field seasons will help inform both new and ongoing efforts to monitor and study right whales. —Hansen Johnson





Genetics Links Calf to Its Mom

In our spring 2023 newsletter (**Vol 32, Number 1**), we reported on the sad event of a days-old right whale calf seen swimming alone in Beaufort Inlet, North Carolina, on January 3, and later found dead under a pier. All the known mothers of the year were seen with their calves afterward, so the calf's mother was unknown. Dr. Tim Frasier's genetics team at St. Mary's University in Halifax, Nova Scotia, Canada stepped in to help. They reviewed the genetics of all 120 adult females who have been sampled and thought to be alive in 2023 and determined that whale **#3194** was the only female whose genotype was consistent with her being the potential mother of the calf; all other genetically sampled adult females could be excluded. Not all adult females were sampled, so they could not be 100 percent certain, but they calculated a confidence in the maternity assignment of 87-88 percent. But that confidence calculation did not include the fact that the calf's mitochondrial genetics, 100 percent of which is passed from mother to calf, matched **#3194** and that **#3194** was seen repeatedly on the calving grounds

off the southeastern US that year. All the information combined allowed us to link the two as mother and son in our database and catalog the calf as **#5394**.

Such maternity assessments are helpful in understanding reproduction in this species and which individual females are less successful in raising calves to weaning age. But this case is unusual because **#3194** has never been seen with a calf! Born in 1997 to **#1412**, (Iceland), one of the most enigmatic females in the population due to her infrequent sightings, **#3194** reached the age of 26 without ever being seen with a calf. We have a few other non-calving females in the population, including one who is 44 years old. Whether these females are not able to get pregnant, are not able to bring their calves to term, or lose calves shortly after an undetected birth remains a mystery. Thanks to the team at St. Mary's, we now can link this lone calf to its mother, **#3194**.

—Philip Hamilton

Photo: #3194 taken February 15, 2023 off the coast of Florida by the Northeast Fisheries Science Center under permit NEFSC 21371-04.

Two Days, One Call to Action

Two important days are giving the New England Aquarium cause to celebrate: Massachusetts Right Whale Day and World Ocean Day. While they may be separate observances, their messages are inextricably intertwined.

It was with great anticipation that the second annual Massachusetts Right Whale Day was celebrated at the New England Aquarium on Wednesday, April 24. Hosted in partnership with the Massachusetts Division of Marine Fisheries and the Massachusetts Environmental Trust (part of the Massachusetts Executive Office of Energy and Environmental Affairs), the celebration was free and open to the public, inviting them to learn more about the Massachusetts state marine mammal and the need for its protection and recovery. Guests were able to talk with scientists from the Aquarium's Anderson Cabot Center for Ocean Life and other conservation organizations about these

extraordinary animals, the threats they face in their environment, and the efforts being made to conserve the critically endangered species. The festivities included an official commemoration with speakers ranging from right whale experts to state legislators, as well as exhibit tables from various organizations sharing right whale research and conservation topics, such as on demand fishing gear and the MET's right whale license plate program. Also present were hands-on activities for guests, and Calvin, a 42-foot inflatable right whale on the plaza! A huge thank you to everyone who attended!

The story of the North Atlantic right whale also blends seamlessly with the upcoming celebration of World Ocean Day. While the official date falls on June 8, the Aquarium will be celebrating on Saturday, June 1. There will be staffed booths, interactive exhibits, and presentations both in the Aquarium and on Central Wharf Plaza in front of the building, inspiring all visitors to connect with the fascinating marine life on our blue planet. The ocean is the lifeblood of the planet and is facing more threats than ever before. The plight of the right



New England Aquarium and Anderson Cabot Center staff posing in front of Calvin on Right Whale Day 2024.

whale is just one example of the effects human activity has on our ocean. These celebrations signal a call for action, raising awareness for the importance of a healthier ocean, and the hope that right whales will be seen along the East Coast for generations to come.

If you would like more information on the Massachusetts Environmental Trust's right whale license plate program, you can find that [here](#). For more information about the Right Whale Day celebration at the Aquarium and more information about the benefits of choosing a Massachusetts Environmental Trust plate, [visit the recent blog post about the event](#). —David Lockwood

2024 Calving Season Update

Every year, from November to April, North Atlantic right whales travel to the Southeast US calving grounds off the coasts of Florida, Georgia, and the Carolinas to give birth in the shallow, warmer waters of the South Atlantic Bight. The 2024 calving season was off to an early start when the first calf was born to **Juno (Catalog #1612)** at the end of November. Two more calves were born in early December, including to mom **Palmetto (#1970)** who stuck to her namesake and gave birth off the coast of South Carolina (the palmetto tree is on the South Carolina state flag). The initial first-time mom of the season was 17-year-old **Catalog #3780**, who was seen with her calf on New Year's Eve. By the end of the season, we had four first-time moms and 19

mom-calf pairs in total. However, the joy of 19 new calves was quickly overshadowed by loss. At just a few weeks old, **Juno's calf** was struck by a vessel and succumbed to its injuries two months later. It was seen injured on Jan 3 and dead on Mar 3. Due to unknown reasons, three other calves were presumed lost (the mothers were seen alone in the calving grounds). And most recently, 2024 mother **#1950** was found dead off the coast of Virginia. Her dependent calf is not likely to survive on its own. (See Mortality and Entanglement Report for details on **#1950** and Juno's calf.) Check out our **blog** on neaq.org for details of all the mothers this season.

At the time of printing this newsletter, five of the 14 remaining mom-calf pairs

have safely made the journey to the northern feeding grounds. **Legato (#1802)** and her calf were the first pair seen off Massachusetts in early April by the Center for Coastal Studies aerial survey team. Since then, **Wolf (#1703)**, **Swerve (#1810)**, **Limulus (#2912)**, and **Butterfly (#1425)** have all been seen with their calves!

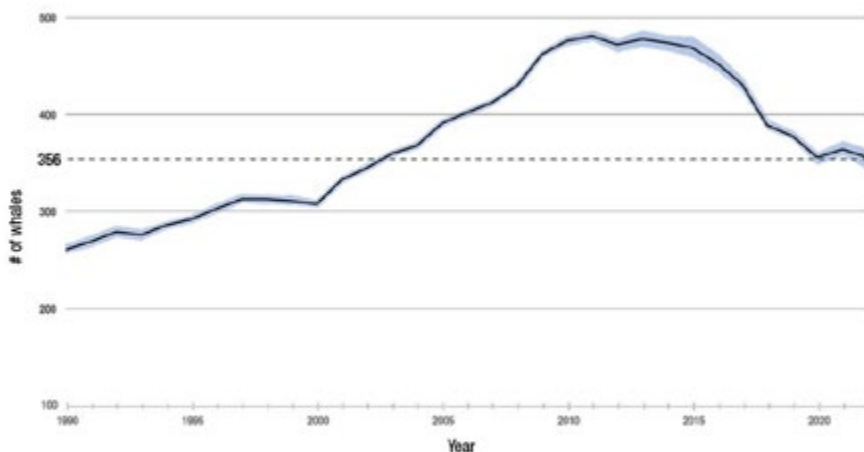
Close communication with the field teams on and over the water is an essential component to the calving season and right whale research. We would like to recognize the hard work of those field teams: Florida Fish and Wildlife Conservation Commission, Georgia Department of Natural Resources, NOAA's Northeast Fisheries Science Center, and Clearwater Marine Aquarium Research Institute. —Amy Warren



Right whale Catalog #1703 (Wolf) and her newborn calf sighted December 22, 2023, approximately 13NM off Atlantic Beach, FL. Photo: Florida Fish and Wildlife Conservation Commission NOAA permit 26919

North Atlantic Right Whale Consortium Releases Its Annual Report Card

North Atlantic Right Whales 1990-2022
as of October 2023



In February, the North Atlantic Right Whale Consortium released its **2023 Annual Report Card**, which includes the updated population estimate for the species. Shared during the Consortium's annual meeting last October, this graph shows the number of North Atlantic right whales alive from 1990-2022, with the count for 2022 at 356 (+7/-10) individuals.

The solid line represents the best estimate for the number of whales remaining, while the light blue area represents the range of uncertainty. —Heather Pettis and Philip Hamilton

— Best population estim
— Range of uncertainty



Tracking Right Whale Injuries to Inform the Ongoing Unusual Mortality Event

In 2017, NOAA Fisheries declared an Unusual Mortality Event (UME) for North Atlantic right whales after a high level of mortalities (n =17) were detected in that year. The Anderson Cabot Center for Ocean Life at the New England Aquarium team continues to work closely with the NOAA Fisheries to provide information about cases of living right whales with evidence of moderate to severe injuries from entanglement and vessel strikes or whales in poor condition. An independent review by three scientists with veterinary or right whale expertise determines which cases qualify for serious injury or morbidity categories (i.e., whale likely to die from injuries and whale not likely to die but there may be sublethal impacts, respectively). As of May 2024, the combined level of



Juno's 2024 calf seen in January with a propeller wound on its head. Photo: FWC, NOAA permit #24359

mortality, serious injury, and morbidity now tallies at 139 cases. This continued high level of mortality and injury is placing this critically endangered species at risk of extinction. This risk can only be reversed if both the US and Canadian governments strengthen protective

measures, including broader implementation of on-demand fishing gear and expanded areas of vessel speed restrictions.

—Amy Knowlton and Heather Pettis

Notable Winter Aggregation in the Great South Channel

Catalog #1326 and Caterpillar (#3503) skim feeding together in the Great South Channel. Photo: Katherine McKenna/ACCOL/NEAQ. NOAA Permit #25739

The Great South Channel is a historically important feeding habitat for right whales, primarily in the spring. However, in late January 2024 a large feeding aggregation of over 50 right whales was found east of Monomoy Island off Cape Cod in the Great South Channel by the NOAA Northeast Fishery Science Center (NEFSC) aerial survey team. Subsequent surveys of the Great South Channel by the NEFSC and New England Aquarium's aerial survey teams continued to document the presence of feeding right whales through March.

During this time, over 150 sightings of 110 individuals were documented in the Great South Channel. The majority of sightings (74 percent) were whales skim

feeding or visibly subsurface feeding. Many of these individuals were adults, including 19 reproductively active females such as **Nauset (Catalog #2413)**, **Derecha (#2360)**, **Millipede (#3520)**, **Chimineia (#4040)**, and **Harmonia (#3101)**.

In late January and early February, the large aggregation remained concentrated in the shipping lanes east of Monomoy Island. By March, this aggregation had shifted south to the eastern side of Nantucket and diminished to roughly 20 individuals.

The Great South Channel Seasonal Management Area (a mandatory speed restriction zone for vessels greater than

65 feet) is in effect yearly from April 1 through June 30, based on the historical timing of right whale presence. However, if whales show up in the Great South Channel outside of this time, like this aggregation, they are not protected by mandatory speed restrictions, only voluntary measures which unfortunately are not well adhered to. The timing, persistence, and size of the Great South Channel aggregation this winter underscores the importance of aerial surveys to monitor the presence of right whales year-round. —Katherine McKenna

Taking Flight

A Slow Journey in the Right Direction

The use of unmanned aerial vehicles (UAS) or drones has changed the way conservation groups and wildlife researchers collect data. Drones are used throughout the marine mammal community to collect length and girth measurements (photogrammetry), get body temperatures, track movements and even place tags on free swimming whales. Researchers have been more cautious about using drones to collect biological samples in the past because we wanted to validate our sampling protocol methods. For example, exhaled respiratory

vapor, the blow or breath of the whale, has been collected in several marine mammal species using drones and other techniques. In right whales, blow has been successfully sampled using a pole that swings the sample collection device over the whale's blowholes. However, the collection of blow from right whales using drones has not yet been optimized for obtaining an adequate sample size for the extraction of hormones. We hope that using drones for right whale blow collection will improve sample quantity and quality, and yield useful hormone data while also eliminating the stress the animal might feel due to close boat approaches.

We have taken the last few years to test our methodology, get two team members licensed, gain practice flying at a low level over right whales, and most importantly, get permitted for the work through a Protected Species Permit from NOAA Fisheries. In the past year, our drone fleet has increased substantially to include five drones; three are outfitted for the collection of whale blow and two are equipped to collect photogrammetry measurements.



Hansen Johnson ready to catch the drone that Amy Warren is flying back to the boat after collecting samples in Cape Cod Bay, April 2024

This spring we were able to use our drones to collect 17 blow samples in Cape Cod Bay (See [Expanded Fieldwork Efforts in 2024](#)). We are looking forward to bringing our drones to the Gulf of St. Lawrence this summer. Stay tuned for updates in our next newsletter. —Monica Zani

In Case You Missed it!

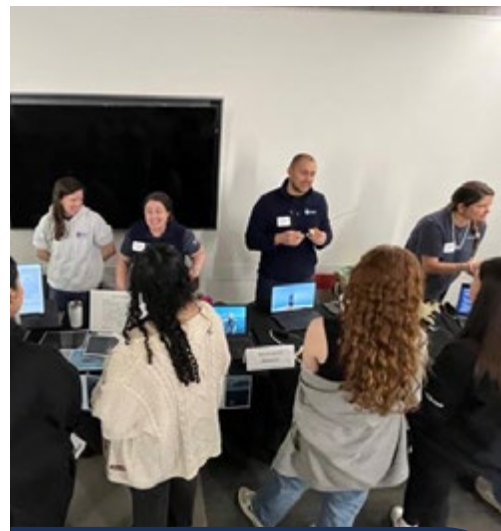
On March 1st, New England Aquarium aerial survey members Orla O'Brien and Kate Laemmler were flying 30 miles south of Nantucket when they spotted a highly unusual sighting in the Atlantic Ocean - a gray whale! **This incredible story** has been picked up by media sources across the globe!



Photo: Orla O'Brien/ACCOL/NEAq

Inspiring the Next Generation of Scientists

On March 7, the the Anderson Cabot Center's Right Whale Team was proud to present an education table at this year's High School Marine Science Symposium. The event, which is co-sponsored by the Massachusetts Marine Educators and Northeastern Marine Science Center, was held on Northeastern University's main campus and welcomed over 250 students from all over Massachusetts. Each student attended two of 10 hands-on workshops offered and had time to explore 20 tables, all featuring many different aspects of marine science. Our team—which included Shelby Vance and myself, along with support and planning from Kelsey Howe and Hansen Johnson—taught students how to identify individual right whales, what we can learn



Shelby and Kara, alongside Anderson Cabot Center colleagues Ryan Knotek and Caroline Collatos, engaging with students about right whales at the 2024 HSMSS.

from cataloging the population, and some potential solutions to help prevent extinction. We were blown away by how many fabulous questions the students had and how inquisitive they were. —Kara Mahoney Robinson

Mortality and Entanglement Report

#5120 at her necropsy/burial site on Martha's Vineyard, the site was picked in collaboration with the local Aquinnah Wampanoag Tribe. Photo: IFAW, NOAA Permit # 24359.

In each newsletter, we report on new entanglements, vessel strikes, and mortalities that we have observed in North Atlantic right whales since the last issue. Although this number is always concerning, we know that it drastically under-represents what the species is actually enduring. A recent study determined that for every carcass observed, there may be three times that number of undocumented deaths. This species is in decline, and until entanglements and vessel strikes are dramatically reduced, North Atlantic right whales will continue to inch closer to extinction due to these human impacts. By sharing these stories, we are keeping you, our readers, apprised of these life-threatening injuries.

Mortalities

It is with a heavy heart that we report on the following mortalities that have all been documented since our last newsletter.

Catalog #5120 (three-year-old female): The carcass of **#5120** was found on the beach of Martha's Vineyard on January 28, with multiple embedded wraps of line around her tail. She was first sighted with an entanglement in August 2022 in the Gulf of St. Lawrence and, despite several disentanglement attempts, portions of the gear remained and continued to dig into her tail stock. Full necropsy results are still pending, but she was noted as thin from this chronic entanglement. NOAA Fisheries was able to conclude that markings in the rope removed from her tail were consistent with the rope used in Maine state water trap/pot buoy lines.

2023 calf of #4340 (one-year-old female): On February 13, the carcass of the

2023 calf of Pilgrim (Catalog #4340) was seen floating offshore of Savannah, GA. The carcass was towed ashore for a necropsy, and while it had been heavily scavenged by sharks, the examination found evidence of blunt force trauma consistent with a vessel strike. Full necropsy details are pending. This is considered an active NOAA Office of Law Enforcement investigation.

2024 calf of #1612: Tragically, the first documented calf of the 2024 season, born to **Juno (Catalog #1612)**, was seen with propeller scars across their head in early January, just over a month after birth. The calf was closely monitored through January and February, and while it survived longer than expected based on the severity of the injuries, the carcass was found washed up on Cumberland Island, GA, on March 3. Experts reviewing images of the propeller wounds estimate that the vessel involved was likely between 35-57 feet in length. This incident underscores the need for the federal government to finalize modifications to the existing vessel speed rule which would include vessels smaller than 65 feet in length. Since the carcass of Juno's calf was heavily scavenged by sharks, the sex of the calf will have to be determined through genetics.

Catalog #1950 (>35-year-old female): The carcass of **#1950**, a female at least 35 years old who had given birth to her sixth calf only a few months before, was found floating off the coast of Virginia on March 30. Despite several aerial survey teams searching the area, her months-old calf was not spotted, and its future remains bleak as a calf so young is not expected to

survive without its mother. Preliminary necropsy results of **#1950** found catastrophic injuries consistent with blunt force trauma from a vessel strike, including dislocation of the spine and fractures to all vertebrae in her lower back. She was last seen healthy and with her calf on February 16 off the coast of Florida.

The loss of several females back-to-back is devastating, as the potential for future whales added to this small population in the form of calves and grandcalves is lost alongside these individuals. In addition to these known deaths, three newborn calves from this calving season have also disappeared within weeks after their birth and are likely dead.

Update on Previous Entanglements

Unfortunately, we have no additional updates on the following ongoing cases mentioned in our December 2023 newsletter: **Catalog #4042 (Martini)**, and **Catalog #4545** (see [*Mortality and Entanglement Report in RWRN December 2023*](#)).

New Entanglements

Catalog #4143: On April 9, the Northeast Fisheries Science Center aerial survey team came across **#4143** about 45 miles south of Block Island, RI, with line caught through his mouth and trailing about one body length behind. He was free-swimming and appeared to be in good overall condition, but due to the distance from shore, no response was immediately mounted. **Catalog #4143** was last seen gear-free in Cape Cod Bay on March 22, 2024. —*Kate McPherson*

Sponsored Whale Update

Thank you so much for sponsoring a right whale and supporting our program. We have new sightings to report for almost all our sponsorship whales!

Gemini (#1150) was photographed in Southern New England on January 22 and February 7, 2024, by the Northeast Fisheries Science Center (NEFSC) aerial survey team. In the first sighting, he was seen with mud on his head, implying that he was diving deep to the seafloor, presumably for food. In February, he was photographed in a surface active group (SAG) with several other right whales, as well as alongside a group of white-sided dolphins.

Manta (#1507) was spotted on February 9, 2024, in an aggregation of 58 feeding right whales east of Nantucket in the Great South Channel by the NEFSC aerial survey team. The Great South Channel has been a relatively quiet habitat in the last decade, so this was a surprisingly large group. About a month later, he was seen in Cape Cod Bay in an echelon feeding formation with **Monomoy (#4313)** by the Center for Coastal Studies (CCS) aerial survey team. (See **Notable Winter Aggregation in the Great South Channel!**)

Aphrodite (#1701) has been seen feeding multiple times this winter in Cape Cod Bay by multiple survey teams. On February 20, she was photographed in coordinated feeding activity with **Dune (#3351)**.

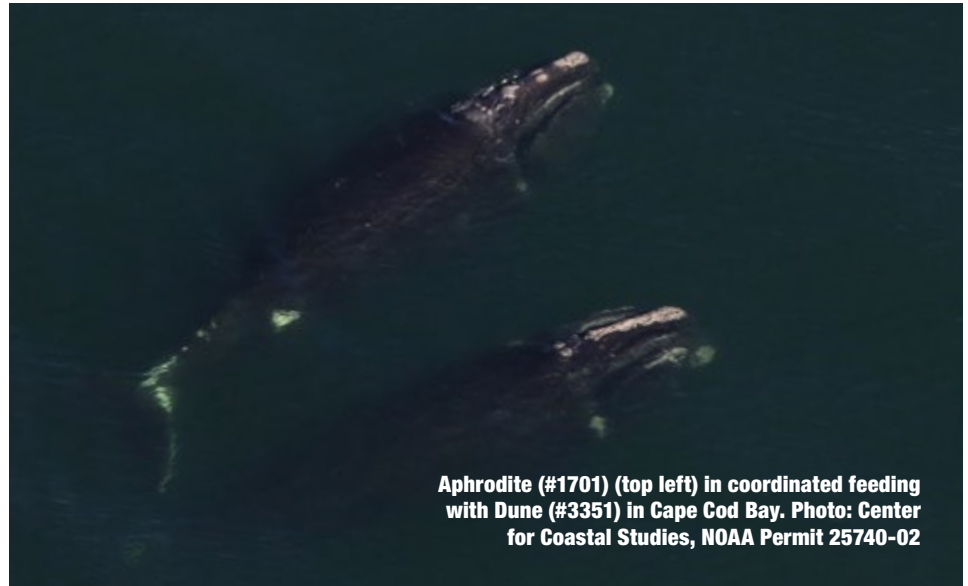
Shackleton (#2440) has also been photographed a handful of times this winter by several survey teams in Cape Cod Bay. He was usually feeding but was also spotted in a SAG with **Catalog #3742** on February 25 by the CCS aerial survey team.

Boomerang (#2503) was last seen in the Gulf of St. Lawrence on September 28, 2023, by a Transport Canada (TC) aerial survey.

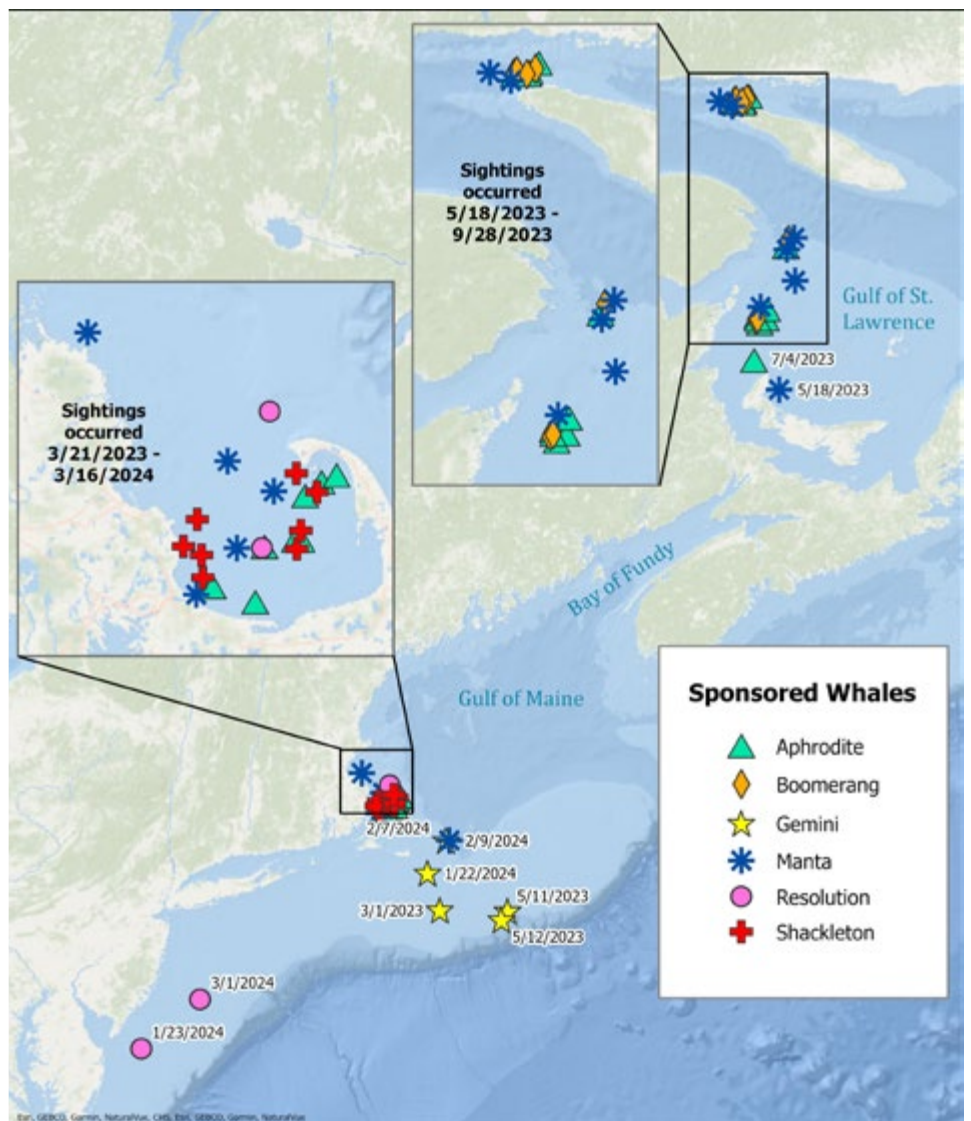
Resolution (#3532) was sighted skim feeding on January 13, 2024, outside Delaware Bay during mid-Atlantic aerial surveys conducted by Azura. He was photographed again on March 1 by the same Azura aerial team off New Jersey.

Unfortunately, we have no new sightings of **Calvin (#2223)** to report; however, we are constantly processing data, so if a past sighting is discovered, we will include it in our next issue.

Please check out the map to see where all the sponsorship whales have been spotted in the past year! —*Kelsey Howe*



Aphrodite (#1701) (top left) in coordinated feeding with Dune (#3351) in Cape Cod Bay. Photo: Center for Coastal Studies, NOAA Permit 25740-02





New England Aquarium

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Boston, MA 02110-3399



Give the Gift of Endangered Species Conservation

Today, there are an estimated 356 individual North Atlantic right whales remaining. While they are no longer commercially hunted, right whales remain critically endangered, and their long-term survival is still under intense threat from fatal vessel strikes and fishing gear entanglements.

Since 1980, we have led research and conservation efforts on the critically endangered North Atlantic right whale—one of the longest-continuously running whale research and conservation programs in the world. Working with government, conservation organizations, industry, and commercial interests, our Right Whale Research Team seeks to find ways to ensure the survival of these majestic animals.

North Atlantic right whale-themed gifts and tax-deductible sponsorships are available with proceeds directly supporting our research and conservation work to save this critically endangered species.

Visit rightwhaleresearch.bigcartel.com to learn more!

A special thank you to everyone who has sponsored a whale over the years. Thanks to your support, we are able to present at events, like the High School Marine Science Symposium we recently attended (see story [Inspiring the Next Generation of Scientists](#) on page 5) to amplify our research and the challenges facing right whales.



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In this newsletter, all photographs of right whales in US waters were taken under NOAA research permits under the authority of the Marine Mammal Protection Act and the US 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 our project at accol.org.

You may access past issues of *Right Whale Research News* on our website at www.neaq.org/news-and-stories/right-whale-research-news-sponsorship. The archive goes back to 2005, and all but the two most recent issues of RWRN are available. Now when one of the articles in the current issue refers to an earlier piece on the same subject, it's easy to check it out!

Thank you!

We would like to thank all the individuals, organizations, and schools that continue to support our research with annual sponsorships and donations. As this species continues to decline, your support is more critical than ever, and we truly appreciate your generosity. Sponsorship funds are used by our Right Whale Program to support activities that directly contribute to the conservation of North Atlantic right whales.