

Right Whale Research News

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In this issue:

2022–2023 Calving Season
Right Whale Festival
Report from Cape Cod Bay
Unsung Heroes
Summer 2023 Fieldwork
Mortality and Entanglement Report
North Atlantic Right Whale Consortium Report Card
The Pendulum Shifts Again
Sponsored Whale Update
Recent Peer-Reviewed Team Papers
Whale Days Celebrated
Recent Transitions
Give the Gift of Endangered Species Conservation



Pediddle (#1012) and her ninth calf off Georgia in January 2023. Named for the circular white scar on her head (a "pediddle" is a car with one headlight), she is over 45 years old. Photo: CMARI. NOAA Permit #20556.

2022–2023 Calving Season

The 2022–2023 southeast US calving season began mid-November, with aerial survey teams in North and South Carolina run by Clearwater Marine Aquarium Research Institute (CMARI). CMARI's Georgia-based counterparts joined the skies in early December along with aerial and vessel teams from Florida Fish and Wildlife Conservation Commission and the Georgia Department of Natural Resources. The first calf of the season, born to **Medusa (Catalog #1208)**, was seen in early December off Georgia. **Medusa**, who was recently named for her callosity that resembles a medusa jellyfish, is a well-known mom, as this was her seventh calf to date. Nine more new calves followed quickly over the month of December and into early January, including from veteran moms **War (#1812)** and

sponsorship whale **Aphrodite (#1701)**.

Our ninth mother-calf pair provided our only first-time mom of the season: **Pilgrim (#4340)**, a 10-year-old female. She was first seen with her calf by beachgoers off Canaveral National Seashore, FL, and later confirmed by aerial survey teams. **Pilgrim** seems to be attracted to the spotlight. She is famous for being one of the few calves to be born in the cold waters of the Northeast. In her case, she was born near the Pilgrim Nuclear Power Station on Cape Cod Bay in 2013, hence her name.

News of our first new mom was quickly followed by a sighting of our most prolific mother, **Spindle (#1204)**. **Spindle** is at least 41 years old and was seen with her tenth calf in January! She is the first known North Atlantic right whale to give birth to ten calves—very

fitting for our tenth mother-calf pair of the season. Not surprisingly, she is also a grandmother; her first grand-calf was born to **Champagne (#3904)** in 2021.

Unfortunately, we cannot seem to escape a calving season without some bad news. In early January, a very young calf was seen swimming alone with no mother in sight. A few days later, that calf was found deceased on a beach in North Carolina. And on January 8, **Spindle's** 2019 calf, **Catalog #4904**, was seen badly entangled off North Carolina (see *Mortality and Entanglement Report*).

In addition to the mother-calf pairs, 37 other right whales have been seen off the southeast US this season. Many of these whales are either males or juveniles, but there are also a few females that have yet to give birth.

Continued on page 2



The Community Art Project at the Right Whale Festival was a mother and calf made with 1,200 pieces of right whale art from students from around the country. Photo: Right Whale Festival.

Calving Season...

Continued from page 1

Perhaps they are scoping out the area for next year? Eight of these additional whales are yearlings. It's always nice to see these one-year-olds come back, on their own, to the place they were born.

The well-oiled communications between the southeast US aerial and vessel teams have proven fruitful this season: All of the calves observed during this calving season have been successfully biopsy sampled. These skin samples are very important because they can later help us genetically match juveniles to their calf counterparts if they

prove difficult to match visually. While the calving season does not technically end until April 15, as of mid-March, the most recent mother-calf pair added to the tally was on January 20 (**Pediddle, #1012**, with her ninth calf), so it's likely over. This brings our total count to 11 mother-calf pairs this season. This is roughly half the number we would like to see, but any new additions to the population are still worth celebrating. To read more about the moms of the season, or look for any late additions, check out our updated calving season [blog](#). —Amy Warren



Report from Cape Cod Bay

It's been a busy few months in Cape Cod Bay, with more than 100 individual right whales photographed by the Center for Coastal Studies (CCS) aerial survey team since December! Typically, April brings in even more hungry right whales, so we expect that number to increase before they move on. Besides the aerial surveys, there are also vessel-based research activities taking place. The CCS Right Whale Ecology Program has been on the water on most good weather days collecting zooplankton samples near feeding right whales and throughout the bay. As in recent years, several members of our Right Whale Research Team are working with Michael Moore from Woods Hole Oceanographic Institution (WHOI) aboard his small research vessel. While Michael collects photogrammetry images of right whales using a drone (to measure the length and girth of individuals), we photograph the same whales from the boat to allow for visual health assessment comparisons from different platforms. A different drone is used to collect

respiratory vapor for microbiome studies. And later in March, NOAA's Northeast Fisheries Science Center team will be on the water and focused on collecting skin samples from individual right whales that have not yet been biopsied.

Although high winds and seas have been the norm since January, the weather is beginning to improve, so our boat efforts will be ramping up. By the end of March, six of the eleven mother-calf pairs have already been seen in Cape Cod Bay—**Pediddle (Catalog #1012)**, **Spindle (#1204)**, **Medusa (#1208)**, **Catalog #1711**, **Porcia (#3293)** and **Pilgrim (#4340)**. It's always a relief to know that the mothers and calves successfully navigated the treacherous east coast on their long journey from the calving ground and we hope that more pairs will soon be arriving.

Cape Cod Bay is one of the most important feeding habitats for right whales, and these few months each year give researchers a valuable opportunity to see how they are faring in these challenging times. —Marilyn Marx

Unsung Heroes

The Sutton Memorial High School (SMHS) Environmental Club in Sutton, MA, is a group of more than forty high school students who are passionate about environmental issues. Each year, they engage in a variety of activities to support their community and causes important to them. Since 2018, the club has been involved in textile recycling, working with BayState Textiles. The school and town have been extremely supportive of the club's effort and to date, they have kept over 130,000 pounds of textiles out of the waste stream! In exchange, BayState Textiles pays for each pound recycled and in the past the club has used these funds to provide reusable water bottles for students, to purchase environmental-themed books for children, and to purchase native plants for pollinators. This year, the SMHS Environmental Club decided to make a donation to the **North Atlantic Right Whale Consortium*** to help continue their important work.

From Deb O'Neill, the SMHS Environmental Club's advisor: "This year, [the students] decided to focus on North Atlantic right whales because they understand that the species is in dire need of help to avoid extinction. We were all motivated by the fact that solutions already exist that would allow the whales to recover, but these solutions need financial and political support. We know that there are so many passionate, intelligent people already working to stop line entanglements and vessel strikes, but they need to have their efforts amplified to the public. The students researched individual whales

and made signs for the school hallway in order to draw attention to the number of entanglements and vessel strikes that have affected each whale. They have also added PSAs to the morning announcements that are produced by the Video Production class. The five members of the Leadership Team (Olivia Owens, Jasmin Sabala, Ramsey Salem, Erin Sullivan and Laura Sullivan) decided on the amount of the donation, and as you know, they wanted to be generous."

We greatly appreciate these students and their commitment to environmental conservation efforts. Thank you, Sutton Memorial High School Environmental Club students! You are an inspiration! —Heather Pettis

**The New England Aquarium is a founding member of the North Atlantic Right Whale Consortium, an internationally recognized model for single-species consortia. Comprised of government and nongovernmental organizations, institutions, and individuals, the Consortium oversees access to multiple right whale research databases and employs a level of data sharing that is unique to such a large research community. The Consortium provides an opportunity for members to share current research findings and management efforts, and to stay apprised of current issues facing right whales. An annual "report card" about the status of the species is made available to the general public through the Consortium's website, narwc.org.*

Summer 2023 Fieldwork

This year, our summer fieldwork plans are somewhat different, but still involve the Gulf of St. Lawrence. For the entire month of July, one team member will join the Canadian Wildlife Institute onboard a rigid hull inflatable for day trips out of Shippagan, New Brunswick; the focus will be on right whale photo identification, health monitoring, and biopsy darting in the Gulf. Also in July, another member of our team will join a Dalhousie University-led offshore cruise for two weeks with a focus on tagging and oceanography. That research effort will also be based out of Shippagan. Fingers crossed for plentiful and healthy right whales, as well as some really nice weather!

Stay updated on field season activities with our [Right Whale Research Blog](#).

Right Whale Festival

On November 5-6, 2022, the Clearwater Marine Aquarium and NOAA Fisheries hosted the 14th Right Whale Festival in Fernandina Beach, Florida, in the heart of the North Atlantic right whale calving ground. Along with planning partners Keep Nassau Beautiful, Marine Resource Council North Atlantic Right Whale Conservation Program, and Amelia Island Whale Ambassadors, 69 exhibitors provided programming for more than 12,000 people over the two days. There were a variety of fun and educational activities and displays, including presentations by right whale experts, right whale art exhibits, and life-sized inflatable whales. There were also associated events such as a beach cleanup and a showing of the documentary *Last of the Right Whales*. The event was a huge success, and raised awareness around right whales. Plans for the 2023 right whale festival are underway. Visit rightwhalefestival.com and Right Whale Festival on Facebook for more information.



The Sutton Memorial High School Environmental Club

Mortality and Entanglement Report

In each newsletter, we report on new entanglements and mortalities that we have observed in North Atlantic right whales since the last issue. Unfortunately, these past six months have been especially grim for the species, with two mortalities and four new entanglements. As alarming as that number is, we know that it underrepresents what the species is actually experiencing. 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.

Mortalities

Unidentified male neonate: On January 3, a lone right whale calf was reported to the Southeast Regional Stranding Network when it was observed swimming in Beaufort Inlet, North Carolina. Aerial and on-water survey teams responded to document the calf and search for its mother, as young calves cannot survive long on their own, but no adult right whales were sighted in the area. Hours later, a member of the public provided video footage showing the calf alive but stuck under a pier at Morehead City Port. When a research team arrived, the calf could not be found, but on January 7, its carcass was found floating under the pier. A necropsy found no evidence of vessel strike or entanglement and determined the calf was likely only a day or two old when it died.

Catalog #3343 (20-year-old male): On February 12, a right whale carcass was reported on Virginia Beach with no external injuries. A necropsy conducted two days later found evidence of multiple spinal fractures and separations, indicating catastrophic blunt-force trauma from a vessel strike. This level of trauma means the whale died shortly after being struck.

New Entanglements

Catalog #4904 (4-year-old female): On January 8, she was sighted by Clearwater Marine Aquarium Research Institute (CMARI) aerial survey off the coast of North Carolina badly entangled with several wraps of line around her head and tail, and more line visible trailing behind her, possibly with weighted gear. No response could be made due to the time of day and distance from shore, and she has not been seen since. Given the complexity of the entanglement, she is unlikely to survive.



Entangled **Argo** with the GDNR/FWC rescue vessel in January. The team successfully freed him from more than 150 feet of line and two lobster pots.

Photo: CMARI. NOAA Permit #24359.

Nimbus (#3812, 15-year-old male): He was sighted by the Florida Fish and Wildlife Conservation Commission (FWC) aerial team off the Georgia coast on January 20 with gear passing through his mouth and trailing hundreds of feet behind him. A disentanglement effort by the Georgia Department of Natural Resources (GDNR), FWC, and Northeast Fisheries Science Center (NEFSC) resulted in the removal of 375 feet of rope, and just a short segment of rope remained in his mouth. On March 10, **Nimbus** was sighted by the Aquarium's aerial survey team south of Martha's Vineyard, and he appeared to be gear-free.

Argo (#1218, adult male, unknown age, over 41 years old): On January 27, **Argo** was sighted 10 miles east of Surf City, North Carolina, by the CMARI aerial survey team with fishing gear wrapped around his tail stock and a heavy object dragging beneath his flukes. **Argo** was resighted by the aerial survey team the next day, and on-the-water responders from GDNR, FWC, and Duke University Marine Lab (Duke) attached a telemetry buoy to the gear so he could be relocated for a disentanglement effort. On January 29, the weather was conducive, and after the GDNR/FWC/Duke team found **Argo**, they were able to disentangle him successfully. More than 150 feet of line and two wire mesh traps were recovered from the whale, and analysis of the gear revealed that it originated from lobster gear set off the coast of southern Nova Scotia. **Argo** had multiple wraps of rope deeply embedded in his tail stock, and he was

in very poor condition. He has not been sighted since, so his fate is unknown.

Catalog #4545 (8-year-old female): She was seen offshore south of Massachusetts on February 9 by the NEFSC aerial survey team. Rope was documented coming out the right side of her mouth and trailing several body lengths behind. A disentanglement response was not mounted at the time due to her distance from shore and limited daylight. On March 29, she was resighted in Cape Cod Bay by the Center for Coastal Studies Marine Animal Entanglement Response team (MAER). They found that line is now wrapped several times around her body making her entanglement much more complex and lethal. The MAER team was able to remove much of the trailing gear but not the embedded body wraps. They will continue to monitor and attempt further disentanglement efforts as feasible.

Update on Previous Entanglements

2021 Calf of Catalog #3720 (two-year-old female): The Center for Coastal Studies (CCS) sighted this whale in Cape Cod Bay on three days in January (18, 23, 31) still entangled since August 2022 with line and buoys visible around the tail. The CCS team launched disentanglement responses, but they were not successful. On February 10, the whale was resighted south of Nantucket by the NEFSC aerial team, but due to distance from shore, no response could be mounted. She has not been seen since.

Sadly, we have no further updates on the many entangled whales that were

Mortality and...

Continued from page 4

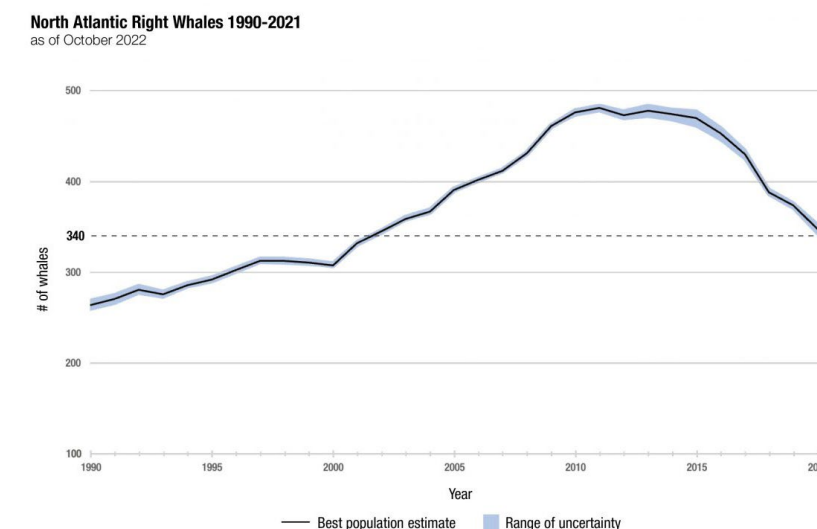
reported to you in our last newsletter: **Sundog** (#3823), **Meridian** (#1403), **Catalog #4501**, and **Snow Cone** (#3560). Their current status is unknown, although based on **Snow Cone's** poor condition at her last sighting, she has likely died from her injuries.

As a result of an elevated level of entanglements and vessel strikes of right whales, in 2017, NOAA Fisheries declared an Unusual Mortality Event (UME; see **2017–2023 North Atlantic Right Whale Unusual Mortality Event**) which prompts a deeper investigation of all known events negatively impacting a species. Since this declaration, a total of 98 right whales have been documented in this UME: 36 carcasses, 32 serious injuries, and 30 morbidities. Sixty of these cases involved entanglement, 16 were related to vessel strikes, and the remainder were either neonate or unknown cause. This is a disheartening number of cases. It will take a concerted and collaborative effort by government, industry, and researchers to continue implementing stronger measures to turn this situation around for North Atlantic right whales. —Kate McPherson

North Atlantic Right Whale Consortium Annual Report Card

In January, the North Atlantic Right Whale Consortium released its **2022 Annual Report Card**. Included in the report is the updated population estimate. This graph shows the estimated number of North Atlantic right whales alive from 1990–2021. The dark blue line represents the best estimate for the species count, and the light blue area represents the range of uncertainty.

The species estimate for 2021 is 340 individuals (+/-7), representing a continued downward trend.



The Pendulum Shifts Again

It continues to be a challenging time for North Atlantic right whales. The efforts to implement policy changes that would benefit the species continue to hit roadblocks in both the United States and Canada. In our last newsletter, we highlighted efforts of the US Atlantic Large Whale Take Reduction Team (ALWTRT) to develop consensus-based ideas for reducing the probability of serious injury and mortality to right whales by 90% for implementation in regulations by December 2024 (as mandated by court order) (see *Efforts to Protect Right Whales in RWRN November 2022*). Although it was a challenge to develop an approach that would meet that goal and the team ultimately did not reach consensus, the discussions amongst stakeholders were thoughtful and productive in moving towards solutions. Shortly after the ALWTRT meetings ended in December 2022, we learned that a rider was being added by Maine legislators to the Federal omnibus budget bill that

would delay the development of fishery regulations for 10 years. Ultimately, this delay was shifted to 6 years and funds were allocated to support a variety of measures, including more research on right whale distribution and supporting efforts to shift to on-demand (i.e. ropeless) fishing gear in high use right whale areas. This delay is definitely a setback in efforts to save this species, and the allocation of funds to support these efforts is not guaranteed unless they are included in the appropriations budget negotiated each year by Congress. We urge Congress to ensure these funds are in fact appropriated so that work critical to the conservation of right whales can continue.

In our last newsletter, we also reported that eastern Canada was set to transition their fisheries to using 1700 lb. breaking strength ropes by December 2023. These weaker ropes, which have been shown to reduce the severity of **entanglements**, can be used in fisheries that occur in shallower waters and are one important

tool towards reducing entanglement risk. We have recently learned that the Canadian government is delaying this transition for another year, an unfortunate setback. However, Canada has done a lot of work in the Gulf of St. Lawrence to implement on-demand gear into their snow crab fishery. So, although there is important progress on some fronts in Canada, the fact that two entanglements in 2023 were linked back to Canadian gear, indicates there is much more to be done to address this threat in their waters.

Despite the regulatory setbacks in both countries and the continuing lawsuits that stall forward momentum on addressing this continuing threat to right whales, it remains encouraging that there are fishermen in both countries who are fully engaged in testing and implementing on-demand gear into their operations. By doing so, they show their industry members that fishing with this newly developed technology is a viable solution that can effectively address entanglement threats to the species. —Amy Knowlton

Sponsored Whale Update

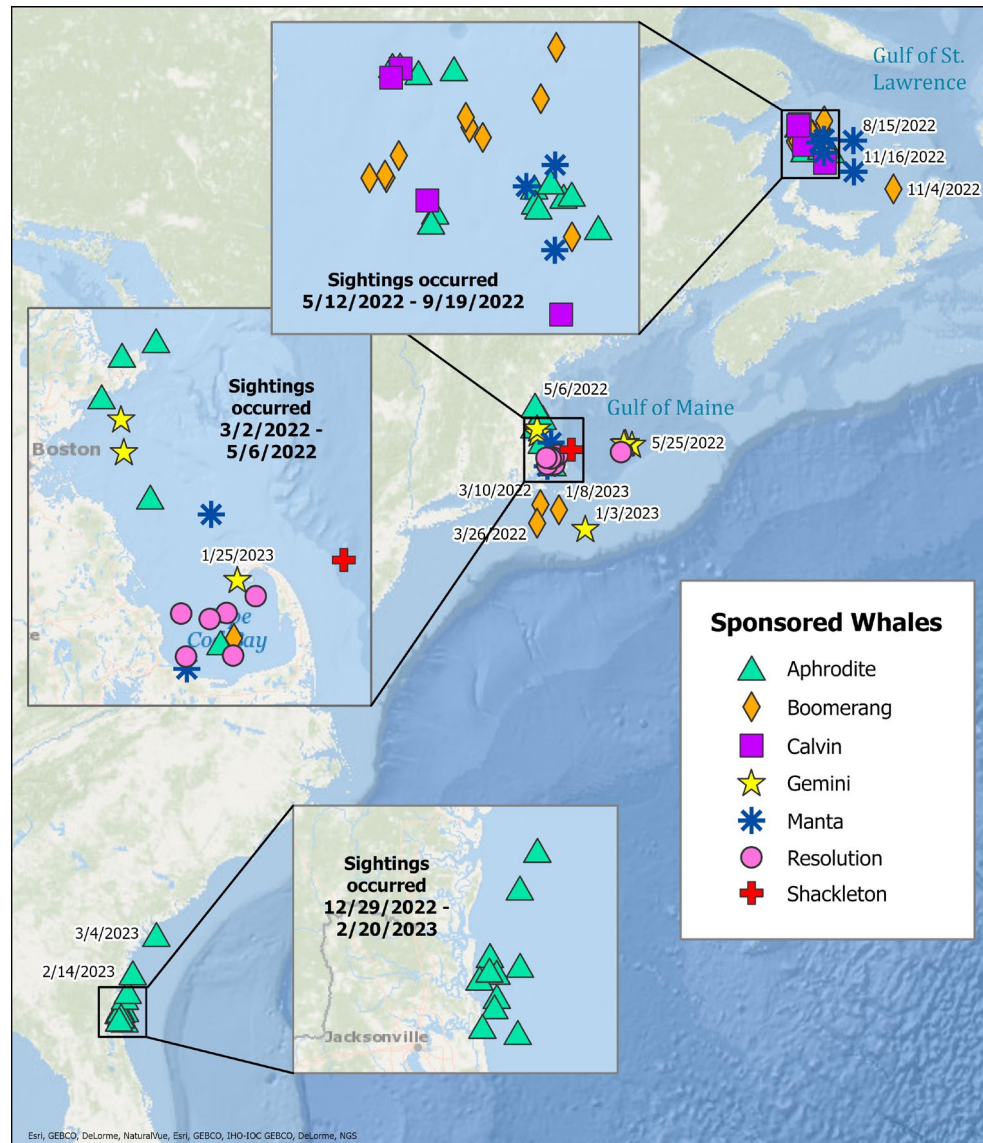
Thank you so much for sponsoring a right whale and supporting our program. We are definitely in the winter doldrums of sightings, as it has been slim pickings in the early part of this year as far as sponsorship whales go. Thankfully, **Aphrodite** has been a major presence in the southeast US alongside her seventh calf!

Gemini (#1150) was photographed in southern New England on January 3, 2023, by the Northeast Fisheries Science Center (NEFSC) aerial survey team. A few weeks later, he was spotted in Cape Cod Bay by the Center for Coastal Studies team on January 25, 2023.

Manta (#1507) was seen multiple times in the Gulf of St. Lawrence last July and August, and then was spotted there in a surface active group on November 16, 2022, by the NEFSC aerial team.

Aphrodite (#1701) was seen often in the Gulf of St. Lawrence last summer, and then showed up off northern Florida on December 29, 2022, with her seventh calf in tow! She was photographed many more times throughout January and February 2023 by several aerial and vessel-based teams. On February 20, she and her calf decided to have a bit of an adventure by swimming into the Port of Jacksonville entrance channel and spending time inside the jetties for a couple of hours. This is a very busy shipping port, so there was a coordinated effort between research teams, NOAA Fisheries, the US Coast Guard, and mariners operating in the area to ensure the pair was kept out of harm's way. Thankfully, **Aphrodite** and her calf made it out of the channel by midday. A huge round of applause to all the teams and mariners who helped the pair navigate the area safely. **Aphrodite** was last seen with her calf on March 4, 2023, off South Carolina by the Clearwater Marine Research Institute aerial survey team, having begun their migration north.

Boomerang (#2503) was photographed in the Gulf of St. Lawrence on September 19, 2022, by the Department of Fisheries and Oceans Canada aerial survey team and again on November 4, 2022, by the NEFSC aerial team. She was last seen in a surface active group in southern New England on January 8, 2023, by the NEFSC team.



Sponsored whale sightings March 2022 through February 2023. Map: Kelsey Howe/ACCOL/NEAQ

We have no new sightings of **Calvin (#2223)**, **Shackleton (#2440)**, or **Resolution (#3532)** to report; however, we are constantly processing data and field teams are keeping an eye out for them, so if a past sighting is discovered or they are seen in these next few months, 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 and calf swim off the coast of Fernandina Beach, FL in December.
Photo: FWC. NOAA Permit #20556.



Recent Peer-Reviewed Team Papers

Highlighting our expertise and productivity, below is a list of recent peer-reviewed publications on which members of the Aquarium's Anderson Cabot Center for Ocean Life are either lead authors or co-authors, noted in bold. This work is made possible due to grants and contracts we apply for, and through direct donations to our program. Thank you for your support!

Franklin, et al. (co-authors **P. Hamilton, A. Knowlton**). 2022. Using sonobuoys and visual surveys to characterize North Atlantic right whale (*Eubalaena glacialis*) calling behavior in the Gulf of St. Lawrence. *Endangered Species Research*. <https://doi.org/10.3354/esr01208>

"This paper looked at right whale vocalizations that were recorded by drifting hydrophones in the Gulf of St. Lawrence and compared them to visual observations. The authors found that call rates steadily increased from June to August and that right whales call less when feeding and more when socializing. Also, these hydrophones did not always detect right whale presence at fine timescales (2–6 hours) and vocalization rates were too variable to provide reliable right whale density estimates in the Gulf." —Philip Hamilton

Friedland et al. (co-author **D. Pendleton**). 2023. Asymmetry in the rate of warming and the phenology of seasonal blooms in the Northeast

US Shelf Ecosystem. *Journal of Marine Science*. <https://doi.org/10.1093/icesjms/fsad007>

"The synchronization of Earth's rotation, ocean currents, and biology from plankton to whales, paints a complex picture of Nature's interconnectedness. Akin to springtime tree leaf-out and emergence of flowers, the 'spring bloom' in the ocean delivers food to many marine organisms. This article describes the timing, or phenology, of the spring bloom—that timing is inseparable from the interconnectedness of organisms and their environment." —Dan Pendleton

Pirota, et al. (co-authors **P. Hamilton, A. Knowlton, S. Kraus, H. Pettis, R. Rolland**). 2023. Estimating the effects of stressors on the health, survival and reproduction of a critically endangered, long-lived species. *Oikos*. <https://onlinelibrary.wiley.com/doi/10.1111/oik.09801>

"This paper describes a modeling approach to estimate the cumulative effects of multiple stressors on North Atlantic right whales including vessel strikes, entanglements, and prey limitation. The authors determined that injuries from vessel strikes and severe entanglements had the largest effect on the health of exposed individuals, highlighting the urgent need for mitigation measures. Long-term ecosystem-based management strategies are also needed." —Amy Knowlton

Whale Days Celebrated

To celebrate whales, including the North Atlantic right whale, there are now two days designated each year to learn their stories and to raise awareness: World Whale Day and, more recently, Massachusetts Right Whale Day.

World Whale Day, acknowledged annually on the third Sunday in February, was celebrated at the New England Aquarium with a call to Congress to ensure funds are appropriated to protect critically endangered North Atlantic right whales. Aquarium staff and volunteers spoke to more than 1,300 visitors from 19 different states about right whales, and collected 686 advocacy cards that were delivered to over 30 different legislators' offices in Washington, D.C. An additional 520 digital letters of support were also sent. Thank you to those who took action to protect whales!

In January 2023, outgoing Massachusetts Governor Charlie Baker signed bill **H.3869**, designating April 24 as Right Whale Day in Massachusetts to celebrate the endangered whale—and state marine mammal—and raise awareness about its plight. On April 24, the Aquarium hosted an event to celebrate the first Right Whale Day with the bill's sponsor, Representative Josh Cutler, and Senator Susan Moran.

Want to share your support? Visit our World Whale Day [webpage](#) to sign an advocacy letter asking that the necessary funds be appropriated to enact right whale protections. To see what else you can do for right whales (and other whales!), check out the [Aquarium's blog](#). And if you're looking for more information about right whales, check out our [webpage](#)! —Shelby Vance

Transitions

There have been a few comings and goings since we last reported on staff transitions in the fall 2021 newsletter.

Peter Corkeron, the chair of the Kraus Marine Mammal Conservation Program, left the New England Aquarium in late 2022 to pursue his work independently. Peter joined the team in December 2019, just months before the pandemic turned our world, and our work life, on end. He helped us navigate the challenging transition to remote work and also guest edited a compelling and informative issue of *Whalewatcher*, an annual publication of the American Cetacean Society, that was devoted to the three species of right whales that occur worldwide (see *Whalewatcher: Right Whales at Risk* in *RWRN* May 2022). Having worked all over the world and with many species, Peter brought a breadth of experience with marine research and conservation that helped broaden our perspective. Thank you, Peter!

We have also added two members to our team recently. Shelby Vance joined the program last summer. Shelby hails from Maine and has a diverse background including work with song birds, sharks, tuna, groundfish, and forestry. She has learned the process of assessing every right whale image collected to look for the presence of scars from entanglements and vessel strikes. This is one aspect of our annual effort to monitor anthropogenic injuries that right whales endure. Shelby also works on our North Atlantic Right Whale Catalog curatorial efforts. Kara Mahoney Robinson joined our team last summer, but she is no stranger to right whale research or the Aquarium. She was a member of the Aquarium's education department for almost 18 years and also worked seasonally as an observer with our team during aerial surveys of right whales on their calving grounds. Kara is now focused on processing Catalog data, helping with the anthropogenic injury team efforts, and assisting with the background work that makes the North Atlantic Right Whale Consortium run smoothly. A hearty, albeit somewhat belated, welcome to Shelby and Kara! —Philip Hamilton



New England Aquarium

Central Wharf
Boston, MA 02110-3399



Give the Gift of Endangered Species Conservation!

The 18th annual Endangered Species Day is May 19, 2023, and this year also marks the 50th Anniversary of the Endangered Species Act (ESA), a landmark law created to protect animals and plants from extinction. You can honor this special day by helping us protect one of the most endangered species in the world! Today, there are fewer than 350 right whales in the North Atlantic. And, while no longer commercially hunted, the long-term survival of this critically endangered species is still under intense threat from fatal vessel strikes and fishing gear entanglements.

Established in 1980, the New England Aquarium's Right Whale Research Program is one of the longest continuously-running whale research and conservation programs in the world. Working with government, conservation, industry, and commercial interests, the Right Whale Research Program seeks to find ways to ensure the survival of these majestic creatures.

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 whale. Visit rightwhaleresearch.bigcartel.com to learn more!



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In this newsletter, all photographs of right whales in U.S. waters were taken under NOAA research permits under the authority of the Marine Mammal Protection Act and the U.S. Endangered Species Act. Right Whale Research News is produced and published by the New England Aquarium. We welcome your comments and suggestions.

Read more about our program at accol.org/rightwhales.

You may access past issues of Right Whale Research News on our website at andersoncabotcenterforoceanlife.org/about-us/newsletters/right-whale-research-news. 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. In these difficult economic times, with federal research budgets shrinking, 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.