

RIGHT WHALE NEWS

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The 2021 SEUS Season: Cautious Hope

As of 26 January 2021, 14 mother-calf pairs have been sighted in the calving grounds of the southeastern U.S. (SEUS) There are additional potential mothers in the area. As it is early in the season, additional reproductive females as well as mother-calf pairs may be sighted. The count of 10 calves in the 2020 season has been exceeded, and it is hoped that there may be 20 or more before the 2021 season ends.

The females with calves currently in the SEUS range in age from 12 to >40. Female Catalog #4040, *Chiminea*, age 13, is with her first calf. Female #1145, *Grand Teton*, age >40, is with her 8th calf.

Early in the season, off Hilton Head, South Carolina, female #3942 was sighted, with her 1st calf on 11 December 2020. Noteworthy is that she is from the 2009 calving cohort, when 39 calves were born. At the time, there were hopes for what this cohort could mean for the population. Twelve years later, the first calf from this cohort has been added to the population. In addition, on 21 January, female #3904 was sighted with her first calf. She is also from the 2009 cohort. A summary by Florida Fish & Wildlife Conservation Commission staff describes that there may be a total of five first-time mothers in the area this season. The entry of new reproductive females into the population is encouraging.

A number of males have been sighted, and several groups have been reported. The numbers of these are small but harken back to the periods several years ago when many males and juveniles made the migration to these waters.

In November, however, the season got off to a sad start. On Friday, 20 November 2020, the carcass of a male right whale calf was discovered by the National Park Service on a remote barrier island off North Carolina, part of the Cape Lookout National Seashore. A necropsy the following day showed no evidence of human interaction. Initial results suggest that the calf died during birth or shortly thereafter.

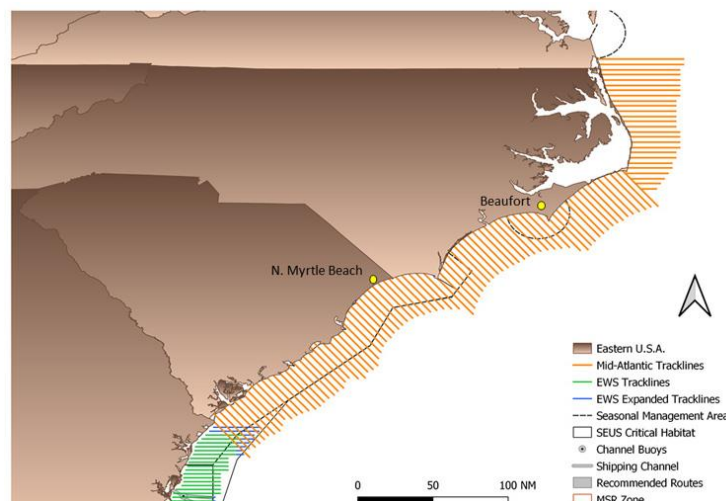
An entangled whale, Catalog #1803, an adult male, was sighted off the Florida/Georgia Border on 11 January and off Amelia Island on 12 January. Disentanglement crews responded by vessel on both days, but were unable to attach a telemetry buoy due to configuration of the trailing gear and the whale's evasive behavior. Subsequent aerial surveys have not yielded further sightings. Other potential human impact events this season included approaches by a paddle boarder south of Matanzas Inlet on 11 January, and by jet skiers and boaters on 17 January, and a possible change in swimming direction by a mother-calf off Daytona Beach on 14 January in response to a jet-ski event. (When alerted, Beach Patrol called in the jet skis, and activities were delayed for two hours.) Enforcement and mitigation actions are underway.

All things considered, it is early in the season. There is cautious hope.

SEUS Aerial Surveys Expanded

The Clearwater Marine Aquarium Research Institute (CMARI) is expanding its SEUS right whale surveys into South- and North Carolina. This expansion will provide monitoring north to the Virginia border. The monitoring is in cooperation with the U.S. Army Corps of Engineers, which will use the resulting data to plan work for dredging projects and other activities.

Kelsy Long, CMARI, described that two new field locations (Beaufort, North Carolina and N. Myrtle Beach, South Carolina) have been added, six new biologists have been hired, and two survey aircraft have been added. The teams will fly a grid pattern of tracklines that range from 25 to 50 nautical miles (nmi) in length. Surveys began 22 December 2020 and will continue to 15 April 2021.



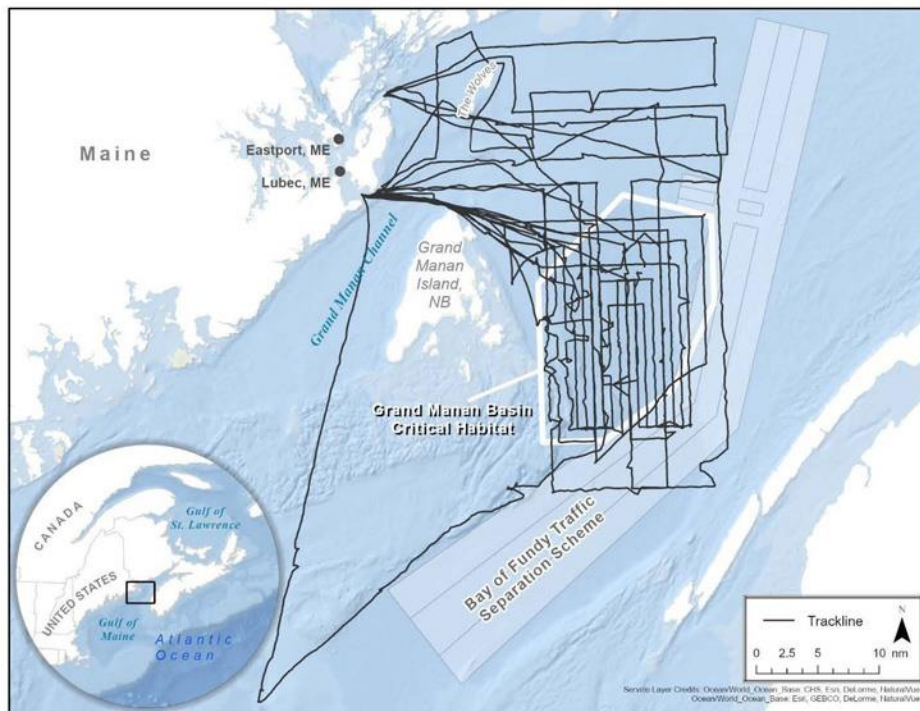
The Clearwater Marine Aquarium, with support from the U.S. Army Corps of Engineers, has placed two additional teams and additional aircraft in the mid-Atlantic area. The additional tracklines are shown in orange.

The data collected are submitted to the New England Aquarium, University of Rhode Island, the Ocean Biogeographic Information System (OBIS), and the habitat-based cetacean density models developed by the Marine Geospatial Ecology Laboratory at Duke University.

Right Whales Abandon the Bay of Fundy in 2020

Contributed by Philip Hamilton, New England Aquarium, Boston, Massachusetts

The Bay of Fundy has been an oasis for right whales for many years. This changed dramatically in 2020. From 1980 to 2017, an average of over 100 right whales were seen annually in the Bay of Fundy. There has been variability over the years: an average of around 40 in the 80's, 145 in the 90's (with a max of 216 in 1997), and around 60 in the 2010's. There has been even more variability in this past decade with annual counts ranging from over 170 in 2011 to 15 or less in 2013 and 2018 to 2020. The last big year in the Bay was 2016 when over 100 whales were seen, but residence times were short and the whales had mostly left by the end of the first week in August. Although a few right whales were seen by other groups in the Bay in 2020, this is the first time in over 40 years that the Aquarium team has not seen any.



Search effort by the New England Aquarium in the Bay of Fundy in August and September 2020. The 12 days and 1,214 miles of trackline came up empty. The former groups of right whales that occurred in the Bay for many years were elsewhere in 2020.

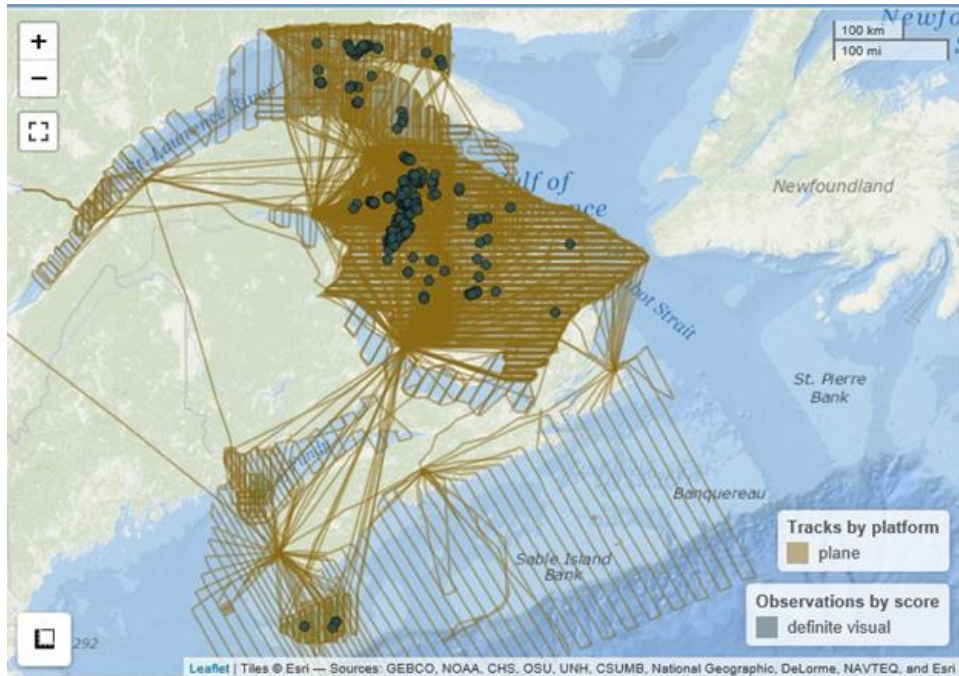
Fisheries and Oceans Canada Marine-Mammal Surveys and North Atlantic Right Whale Sightings

Contributed by Angelia Vanderlaan, Fisheries and Oceans Canada, Dartmouth, Nova Scotia

Fisheries and Oceans Canada (DFO) had to postpone many field programs due to the COVID-19 pandemic. However, the marine mammal aerial surveillance work was identified as a critical service to Canadians. With their required Essential Service letters, modified survey protocols, and expanded safety procedures, the survey teams took to the skies on 26 April 2020. With crews and ground support from the Quebec Region, Newfoundland and Labrador Region, and the Maritime Region and Gulf Region, the three DFO planes (two Cessna Skymasters and a Twin Otter) flew systematic surveys and monitored fisheries closures for the presence of North Atlantic right whales until the middle of November. The Twin Otter flew a total of 395 hours while the two Cessnas flew a total of 699 and 389 hours, respectively. All planes broke from their transect lines to photograph individual North Atlantic right whales before returning to complete their line.

With a large amount of the effort focused on the southern Gulf of St. Lawrence, there were a total of 2,366 marine-mammal sightings of 18 different species including 277 sightings of North Atlantic right whales. Preliminary analyses of the >12,000 photographs and >500 videos that were either captured by Government of Canada assets (DFO, Canadian Coast Guard, or Transport Canada) or submitted to DFO by the public or other researchers, led to the identification of 124 individual North Atlantic right whales. Of these 124 individuals, five were mother-calf pairs and one mother (Catalog #3560), who lost her calf in June in US waters, was also identified. There were also a few individuals present in 2020 that had not been observed in the Gulf of St. Lawrence during the previous three years of surveys. Throughout the field season, DFO staff collaborated with the New England Aquarium, Nick Hawkins, and the NOAA Northeast Fisheries Science Center teams to provide updated information on identifications, the number of individuals observed, and any injuries observed.

DFO and the Marine Animal Rescue Society (MARS) also conducted a joint research cruise in August to continue the investigation of noise impacts on North Atlantic right whales. Researchers conducted approximately 158 hours of survey effort with 21 confirmed North Atlantic right whale sightings consisting of 41 identified individuals (preliminary analyses). The scientific staff also collected data for health assessments within the context of noise exposure. These data included photogrammetry for body condition, 22 whale-blow samples, 4 biopsies for stress hormone analyses, and ~ 11 hours of behavioural data from two deployed digital acoustic recording tags (DTAGs).



Survey track lines and North Atlantic right-whale sightings by the Fisheries and Oceans Canada aerial survey teams. Image created using WhaleMap (Johnson, HD (2018)). WhaleMap is available at: <https://whalemap.ocean.dal.ca/>. Accessed: 2020-12-02). (Please note that much of these data are preliminary and subject to change, and that few or no observations may reflect lack of effort rather than lack of whales.)

DFO and Transport Canada remain focused on preventing vessel strikes and fishing-gear entanglements. As such, expanded protection measures and new initiatives were in place in both the Gulf of St. Lawrence and maritime waters. These included fisheries mitigation measures for any North Atlantic right whales observed in the Gulf of St. Lawrence, the Bay of Fundy, and critical habitats in the Roseway and Grand Manan Basins; and extended navigation mitigation measures throughout the Gulf of St. Lawrence and Cabot Strait.

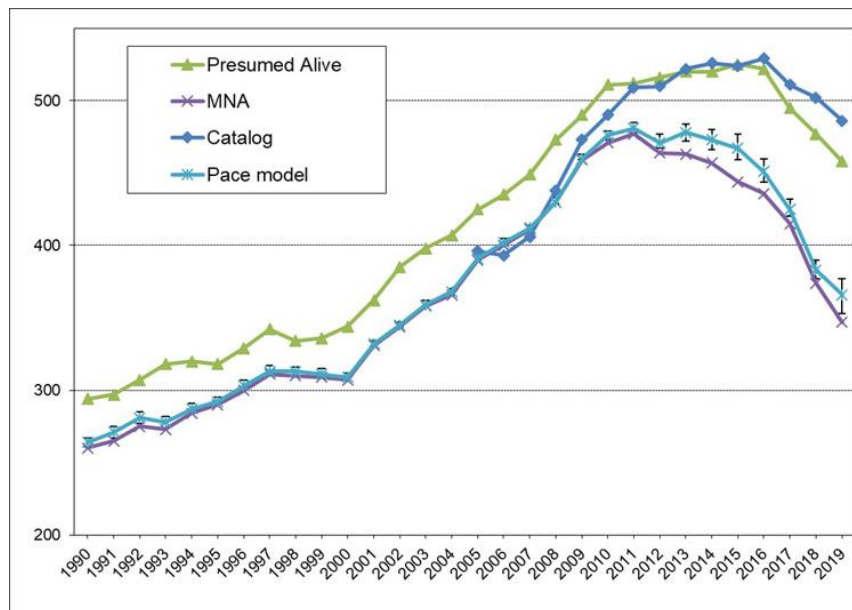
For more information on DFO's North Atlantic right whale protection efforts, including mandatory gear marking, lost gear reporting, and reporting of any marine mammal interactions, please visit <https://www.dfo-mpo.gc.ca/fisheries-peches/commercial-commerciale/atl-arc/narw-bnan/management-gestion-eng.html>. For information of the multiple measures implemented by Transport Canada to protect North Atlantic right whales in the Gulf of St. Lawrence from vessel strikes, please visit <https://tc.canada.ca/en/marine-transportation/navigation-marine-conditions/protecting-north-atlantic-right-whales-collisions-vessels-gulf-st-lawrence>.

Population Decline for North Atlantic Right Whales Continues

Each year, in the October-November timeframe, at the annual meeting of the North Atlantic Right Whale Consortium, the current population estimate for the North Atlantic right whale is presented. This was the case at the virtual meeting on 27 October 2020.

The 2020 Annual Report Card describes that the best estimate for the right whale population as of the end of 2019 is 356 whales. This represents a more precipitous drop than in previous years. Survivorship is said to be decreasing.

The complete report card, including births, mortalities, and monitoring effort is posted at www.narwc.org.



The 2020 Annual Report Card prepared for the North Atlantic Right Whale Consortium describes that the best estimate for the right whale population (based on the Pace model) as of the end of 2019 is 356 whales.

Observations from the 2020 Ropeless Consortium annual meeting

Contributed by Sean Brilliant, Canadian Wildlife Federation, Dalhousie University, Halifax, Nova Scotia, and, Chair, Ropeless Consortium

Fishing fixed gear without using traditional buoys and endlines that continuously float in the water column is broadly referred to as ‘ropeless’ fishing. Just 2 years ago, the idea of ropeless fishing in the Canadian Maritime and New England trap fisheries was science fiction; far-flung,

unrealistic, and too preliminary to be reasonably considered as suitable for commercial fisheries. But in the short time between then and now, this is no longer the case.

The problem is that endlines used by traditional fixed-gear fisheries pose a real and serious possibility to entangle large whales, including the endangered North Atlantic right whale. As a result, in the Maritimes and New England (and, increasingly around the world: in California, South Africa, and Europe), fisheries are being temporarily excluded from areas to separate them from places and times where whales are common. While these time-area closures are a solution to prevent entanglements, ropeless fishing gear is the solution to time-area closures.

The 3rd annual meeting of the [Ropeless Consortium](#) was held in October 2020 as an online, COVID-safe virtual meeting. Almost 300 registrants including individuals from fisheries, non-governmental agencies, scientists, developers, and federal, state, and provincial government representatives from Canada and the US participated in a day of presentations and discussions.

We heard of great progress. Developers are continuing to innovate and refine ropeless fishing systems. Government agencies in both countries are supporting the development and trials of this gear. Scientists are collaborating with developers and users to identify and fill knowledge gaps needed to improve the suitability of ropeless gear. And finally, and encouragingly, we heard that 10 Canadian snow crab fishers in the Gulf of St. Lawrence purchased ropeless gear (some at their own cost) and were permitted to use the gear during their commercial fishery in areas closed because of the presence of right whales (see the following article). During these commercial trials fishers caught crab without losing any gear.

Ropeless fishing is no longer science-fiction for fixed-gear fisheries in the Northwest Atlantic. It is emerging as a legitimate tool that can allow commercial fisheries to operate in areas closed because of the presence of North Atlantic right whales. But it is not clear sailing just yet. There remain several challenges including needs for regulatory pathways, cost reductions, and further gear trials. The requirement for a way to locate gear without surface buoys came up in many presentations and is clearly critical for this technology to be useable. We need to encourage continued attention and investment from governments, non-governmental agencies, and foundations to support work to solve this problem.

Canadian Snow-crab Fishing Experimentation with Ropeless Gear

Contributed by Robert Haché, Director General, Association des Crabiers Acaadiens, Inc.
Shippagan, New Brunswick

Ten Canadian fish harvesters from the Southern Gulf of St. Lawrence snow crab fleet obtained an experimental fishing license in the spring of 2020 to use a ropeless fishing gear system

fabricated by EDGETECH from New Bedford, Massachusetts, to fish snow crab without requiring the presence of ropes in the water column in areas closed to regular fishing due to the observed presence of North Atlantic right whales.

The EDGETECH product was originally designed to be used in the American lobster industry. After preliminary testing with the Canadian snow-crab gear, modifications were made in 2019 to adjust the system to better suit the snow crab fishery configuration. Further sea trials in 2019 resulted in a 100% successful release ratio of the traps along with the confirmation that the system could be re-armed quickly and that the omnidirectional acoustic connection extended to 2000 meters from the fishing vessel.

Last spring, each of the 10 fish harvesters involved in the experiment was allocated 10 additional traps to be fished with this ropeless gear. Delays due to COVID19 constrained the experiment and the fishery only lasted about three weeks under normal weather conditions. A total of 29 sets were hauled during that period. The performance of the acoustic release system achieved a 100% success rate with a deployment distance that varied between 0.25 and 1 nmi. The performance of the virtual trap tracker application for smart phones was inconclusive. The application was successful in locating one's own gear but failed to see the other fishers' gear locations.



The stern of a fishing boat underway. The pot on the left (yellow) is the release cage for the rope that is stored inside. The acoustic-release mechanism inside the cage, upon receiving the acoustic message, releases a lock on the cage cover, and the cover and attached buoys float to the surface with the attached rope. The crew then pulls the release cage to the boat and pulls out the first snow crab trap (green and black in upper right) that was lying on the seabed in a trawl configuration.

At the end of the experiment, the trustworthiness of the EDGETECH system for fishing areas frequented by the right whales was confirmed by all participants. The acceptability of using trawls of traps instead of individual units in areas frequented by whales was also confirmed by all participants. All 10 fish harvesters indicated their willingness to pursue this alternative way of fishing snow crab in 2021.

The main purpose here is to be able to fish more traps during a full fishing season so that the cost-to-benefit ratio of using this new system to access closed areas frequented by whales can be compared to the cost-to-benefit ratio achieved with their traditional fishing gear and fishing practices when forced to operate outside of these closed areas frequented by right whales. In 2021, a limit of 20 fish harvesters will be recruited to pursue the ropeless fishing experiment in the southern Gulf of St. Lawrence.

Whales and Fishermen: Regulations on the Horizon

Efforts to save the right whale take place at in many locations, including in the courtroom. There continue to be intertwined and sometimes difficult exchanges. These take place on several fronts: state and federal.

In April 2019, Richard, “Max”, Strahan filed suit in the U.S. District Court for Massachusetts against defendants, the Secretary, Massachusetts Executive Office of Energy and Environmental Affairs; the Director of the Massachusetts Division of Marine Fisheries, the president of the Massachusetts Lobstermen’s Association; the Center for Coastal Studies; and the president of the South Shore Lobster Fishermen’s Association. In short, Strahan seeks to stop the state from licensing any fishing gear that requires licensed fishermen to use vertical buoy ropes.

Continuing on the Massachusetts side, the Marine Fisheries Advisory Commission will meet, virtually, on 28 January 2021. On the agenda are recommendations on the New Protected Species Regulations. These recommendations include 1) commercial trap gear closures, 2) Massachusetts restricted area, 3) gillnet closure area, groundfish closures, 4) single pot prohibition, 5) 1,700 pound breaking strength line, and 6) maximum buoy line diameters.

On the federal side, on 2 December 2020, several environmental advocacy groups, The Center for Biological Diversity, Conservation Law Foundation, Defenders of Wildlife and the Humane Society of the United States, filed a petition against the federal government for violating the Endangered Species Act by allowing the lobster fishery to operate in a manner known to entangle right whales. The petition is described as in response to a lack of action over the past several years.

On 9 April 2020, a federal judge ruled that the National Marine Fisheries Service violated the Endangered Species Act by failing to reduce the risk of North Atlantic right whales becoming

entangled in lobster lines. In the 20-page ruling, Judge James Boasberg of the US District Court in Washington D.C. noted the agency's failure to produce what is known as an incidental take statement—a requirement of the ESA when the government finds that an entity has been threatening the sustainability of an endangered species. Continuing, on 19 August 2020, Boasberg ordered federal fishery managers to issue a new rule for critically endangered North Atlantic right whales no later than 21 May 2021.

U.S. District Court Judge James E. Boasberg also ordered a new ESA-mandated analysis of the American lobster fishery that takes into account the full scope of its harm to right whales. He stopped short of prohibiting lobster fishing with vertical buoy lines in a key right whale feeding area, which the groups had requested as an interim measure.

The next phase in the labyrinthian process involves a public comment period on the proposed rule that runs through 1 March. The NMFS Greater Atlantic Fisheries Office reports that finalizing the rule, obtaining all required clearances, and publishing the final rule and Environmental Impact Statement by 31 May will be extremely challenging. However, they report, NMFS/GARFO should be able to finalize the Biological Opinion, a document that would satisfy the court-ordered deadline.

In parallel, NOAA Fisheries has proposed a “Risk Reduction Rule” to modify the Atlantic Large Whale Take Reduction Plan. This outlines steps to reduce the impacts of entanglement in commercial fishing gear on right whales. The modifications are intended to achieve at least a 60 percent reduction in mortalities or serious injuries of right whales in the Northeast Jonah crab and lobster trap/pot fisheries, which deploy about 93 percent of the buoy lines fished in areas where right whales occur. A 4-page summary document is available by searching on “Fact sheet: Summary of the proposed risk reduction rule to modify the Atlantic large whale take reduction plan.”

In summary, NMFS/GARFO describes that the approach that NMFS developed applies the most protection to areas of predictable high-seasonal aggregations of right whales, risk reduction across areas of high co-occurrence with fishing lines, and application of precautionary measures across the region that will be resilient to ecosystem changes as well as changes in right whale distribution.

We, collectively, are engaged in a difficult process. Further outcomes and reporting will take place in the coming months.

Expert Working Group Provides Monitoring Recommendations

On 22-24 October 2019, an expert working group met in LaJolla, California, to address two objectives related to monitoring North Atlantic right whales: 1) improving our understanding of

population status by identifying and tracking essential population metrics, and 2) improving our understanding of distribution and habitat use. The working group consisted of five NMFS researchers (the authors of the report) with expertise in marine mammal monitoring but no direct involvement in current right whale monitoring efforts. The report presents the group's recommendations for a comprehensive monitoring strategy to guide future analyses and data collection on 1) right whale demographics and population status, 2) distribution shifts and range-wide habitat use, and 3) the health of individuals and the population. The recommendations are intended to improve NMFS's overall monitoring strategy for right whales, with recognition of the significant contribution to research and monitoring carried out by NMFS's and partner institutions and agencies.

The report can be accessed on line:

Oleson, E.M., J. Baker, J. Barlow, J.E. Moore, and P. Wade. 2020. North Atlantic right whale monitoring and surveillance: Report and recommendations of the National Marine Fisheries Service's Expert Working Group. NOAA Technical Memorandum NMFS-OPR-64. 47 pp.

North Atlantic Right Whale Added to NMFS's "Species in the Spotlight"

The NOAA Fisheries Species in the Spotlight initiative was created in 2005. In 2019, the North Atlantic right whale was added as the ninth species to be included. Details are provided in pages 62 through 69 of the document shown below.

The Endangered Species Act (ESA) amendments of 1998 added a requirement that the Secretaries of Commerce and Interior report to Congress every two years on the status of efforts to develop and implement recovery plans and on the status of species for which recovery plans have been developed. This document is the 15th Report to Congress on this task.

Source:

National Marine Fisheries Service. 2019. Recovering Threatened and Endangered Species. FY 2017-2018 Report to Congress. National Marine Fisheries Service, Silver Spring, Maryland. Office of Protected Resources, National Oceanic and Atmospheric Administration.

Comment

Jim Hain

Blue Whales Provide Hope

Blue whales are often held up as the flagship species for marine mammals. Recent discoveries may provide hope for those studying and conserving right whales. This has taken place on three fronts.

By the end of whaling for blue whales in the 1960s, the population had been considerably reduced. The decimation by commercial whaling was sometimes held up as an example of how a population can be reduced beyond the point where it can recover. In subsequent years, in one area, near South Georgia Island, the site of a former whaling station, blue whales were seldom seen. However, since 2018, there have been increases in both sightings and acoustic detections of blue whales in the area. The authors of the paper speculate that as the population was reduced, the cultural memory that had drawn them to South Georgia was lost. Perhaps now, blue whales have re-discovered this feeding area.

Secondly, some hope might also be provided by the eastern North Pacific (west coast of the U.S.) population of blue whales. Largely due to commercial whaling, the population was lowest about 1931. Even though there is uncertainty, the population has increased at about 3% since that time, to a current estimate of about 2,200. The population is considered recovered. As with North Atlantic right whales, recent evidence suggests a northward shift in population distribution as ocean water warms.

And lastly, a team of researchers has discovered what it believes to be a new population of blue whales in the western Indian Ocean.

So on all three counts, numbers and areas occupied are changing, and changing for the better. Will we be able to tell similar stories someday for the North Atlantic right whale? Blue whales and right whales. Endangered species. What can we learn?

Sources:

Calderan S.V., *et al.*, 2020. South Georgia blue whales five decades after the end of whaling. *Endangered Species Research* 43: 359-373.

Caretta, J.V., *et al.* 2020. U.S. Pacific Marine Mammal Stock Assessments: 2019. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-629.

New England Aquarium, New population of blue whales discovered in the western Indian Ocean, *Science Daily*, 21 December 2020.

Right Whale Video Series by the New England Aquarium

The New England Aquarium has posted on Facebook an informative series of right whale videos as part of its Blue Planet Science endeavor. They are: 1) “Meet the right whale research team,” 2) “A look inside the North Atlantic right whale photo-identification catalog” 3) “Evaluating human impacts on right whales,” and 4), “A day at sea with the right whale team.” Another informative video, “Virtual visit: Virtual aerial survey,” also a part of the Blue Planet Series, was posted 27 August 2020.

In Memorium

Laurie Murison

Laurie Dianne Murison, Director of the Grand Manan Whale and Seabird Research Station, passed away on 3 January 2021 at the Saint John Regional Hospital. She was 61. She created the museum in North Head, which housed specimens and educational materials. She was active in the study of right whales in the Bay of Fundy, led whale watching trips, and was closely involved in the effort to move a shipping lane so as to protect the whales. Laurie was engaging, helpful, and generous. My own personal memory of Laurie is from August 2003. We were on a boat in the Bay of Fundy, right whales to the north of us, and Laurie with her hydrophone listening, watching, and educating. It was a glorious day.

J.H.



Laurie Murison. Photo by Peter Cunningham

Calendar

7 May 2021. Meeting of the Southeast U.S. Implementation Team (SEIT). A one-day virtual meeting is planned. Further information will be emailed as the date approaches.

To be determined. October-November 2021. Annual meeting of the North Atlantic Right Whale Consortium. Future issues will provide updates, as will www.narwc.org.

13-17 December 2021. 24th Biennial Biology of Marine Mammals Conference, Palm Beach, Florida. For further information, see marinemammalscience.org.

Scientific Literature and Reports

Carroll, E.L., L. Riekkola, R. Constantine, R. Cole, E. Stuck, A.N. Zerbini, V. Andrews-Goff, and S. Childerhouse. 2020. Tohorā nō Aotearoa - New Zealand Southern Right Whale Research Programme 2020 Expedition Report. Technical report, University of Auckland. DOI: 10.13140/RG.2.2.19440.07687

Christiansen, F., M.L.K. Nielsen, C. Charlton, L. Bejder, and P.T. Madsen. 2020. Southern right whales show no behavioral response to low noise levels from a nearby unmanned aerial vehicle. *Marine Mammal Science* 36:953–963. <https://doi.org/10.1111/mms.12699>

Davis, G.E., M.F. Baumgartner, P.J. Corkeron, J. Bell, C. Berchok, J.M. Bonnell, J.B. Thornton, S. Brault, G.A. Buchanan, D.M. Cholewiak, C.W. Clark, J. Delarue, L.T. Hatch, H. Klinck, S.D. Kraus, B. Martin, D.K. Mellinger, H. Moors-Murphy, S. Nieukirk, D.P. Nowacek, S.E. Parks, D. Parry, N. Pegg, A.J. Read, A.N. Rice, D. Risch, A. Scott, M.S. Soldevilla, K.M. Stafford, J.E. Stanistreet, E. Summers, S. Todd, and S.M. Van Parijs. 2020. Exploring movement patterns and changing distributions of baleen whales in the western North Atlantic using a decade of passive acoustic data. *Global Change Biology* 26:4812–4840. <https://doi.org/10.1111/gcb.15191>

Fortune, S.M.E., M.J. Moore, W.L. Perryman, and A.W. Trites. 2020. Body growth of North Atlantic right whales (*Eubalaena glacialis*) revisited. *Marine Mammal Science* 1–15. <https://doi.org/10.1111/mms.12753>

Jackson, J.A., A. Kennedy, M. Moore, A. Andriolo, C.C.G. Bamford, S. Calderan, T. Cheeseman, G. Gittins, K. Groch, N. Kelly, R. Leaper, M.S. Leslie, S. Lurcock, B.S. Miller, J. Richardson, V. Rowntree, P. Smith, E. Stepien, G. Stowasser, P. Trathan, E. Vermeulen, A.N. Zerbini, and E.L. Carroll. 2020. Have whales returned to a historical hotspot of

- industrial whaling? The pattern of southern right whale *Eubalaena australis* recovery at South Georgia. *Endangered Species Research* 43:323-339. <https://doi.org/10.3354/esr01072>
- Kelley, D.E., J.P. Vlasic, and S.W. Brillant. 2020. Assessing the lethality of ship strikes on whales using simple biophysical models. *Marine Mammal Science* 1–17. <https://doi.org/10.1111/mms.12745>
- Kirsebom, O.S., F. Frazao, Y. Simard, N. Roy, S. Matwin, and S. Giard. 2020. Performance of a deep neural network at detecting North Atlantic right whale upcalls. *The Journal of the Acoustical Society of America* 147:2636–2646. DOI: 10.1121/10.0001132
- Kowarski, K.A. and H. Moors-Murphy. 2020. A review of big data analysis methods for baleen whale passive acoustic monitoring. *Marine Mammal Science* 1–22. <https://doi.org/10.1111/mms.12758>
- Kowarski, K.A., B.J. Gaudet, A.J. Cole, E.E. Maxner, S.P. Turner, S.B. Martin, H.D. Johnson, and J.E. Moloney. 2020. Near real-time marine mammal monitoring from gliders: practical challenges, system development, and management implications. *The Journal of the Acoustical Society of America* 148(3):1215-1230. DOI: 10.1121/10.0001811
- Maglin, K. 2020. N is for North Atlantic right whale. Pages 125-130 in A. Burton and R. Mawani, eds. *Animalia: An anti-imperial bestiary for our times*. Duke University Press.
- Mansouri, F., D.D. Crain, Z.C. Winfield, R. Sabin, C.W. Potter, R. Zhang, S.J. Trumble, and S. Usenko. 2020. A lipid normalization model for the analysis of stable isotopes in baleen whale earplugs. *Marine Mammal Science* 1–6. <https://doi.org/10.1111/mms.12756>
- Martins, M.C.I., C. Miller, P. Hamilton, J. Robbins, D.P. Zitterbart, and M. Moore. 2020. Respiration cycle duration and seawater flux through open blowholes of humpback (*Megaptera novaeangliae*) and North Atlantic right (*Eubalaena glacialis*) whales. *Marine Mammal Science* 36:1160–1179. <https://doi.org/10.1111/mms.12703>
- Oleson, E.M., J. Baker, J. Barlow, J.E. Moore, and P. Wade. 2020. North Atlantic right whale monitoring and surveillance: Report and recommendations of the National Marine Fisheries Service’s expert working group. NOAA Technical Memorandum NMFS-OPR-64.
- Rockwood, R.C., J. Adams, G. Silber, and J. Jahncke. 2020. Estimating effectiveness of speed reduction measures for decreasing whale-strike mortality in a high-risk region. *Endangered Species Research* 43:145-166. DOI: 10.3354/esr01056
- Shabangu, F.W., R.K. Andrew, and K. Findlay. 2020. Acoustic occurrence, diel-vocalizing pattern, and detection ranges of southern right whale gunshot sounds off South Africa's west coast. *Marine Mammal Science* 1–18. <https://doi.org/10.1111/mms.12760>

Right Whale News

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Jim Hain, Editor of *Right Whale News*, is a member of the Society of Environmental Journalists.