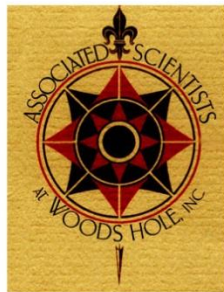


**Monitoring Endangered Right Whales
in Coastal Waters of Northeast Florida
by a Volunteer-Based Citizens Network**

2023–24 Season

**Interim Progress Report to:
Volunteers, colleagues, and supporters**

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Preface and Summary

The Marineland Right Whale Project (MRWP) was initiated in 2001 and completed its 24th field season in March 2024. It is one of about a dozen programs and organizations extending from Canada to Florida dedicated to the science and conservation of the North Atlantic right whale, *Eubalaena glacialis*. After wide concern about a decreasing population, our 21 December 2023 report described a slowly decreasing trend in the 1) number of sightings by the Marineland group, and 2) the overall annual calf production. For the 2024 season, our phrase “Every whale and every season is different” was again verified.

As we entered the 2024 season, we hoped for the best—a strong calf count with perhaps an increase. Following on our decades of experience with variability and foundational unpredictability, the MRWP recorded only three fairly elusive sightings in our area. We saw glimpses of body parts and blows, but did not document any individuals that were identifiable and matchable to the Right Whale Catalog. A plot of the MRWP sightings showed that the great majority of sightings were to the north of us, in the area of Amelia, Cumberland, and Jekyll islands; and on past Brunswick, Georgia. The overall sightings plot off Marineland and to the south was almost completely devoid of sightings.

Within the southeast U.S., injury and mortality continued to be a factor. Female #1301, *Half Note*, lost her calf. (She has lost six of her last eight calves. Apparently she is unable to successfully nurture her newborn calves as they have decreasing body mass and subsequently disappear. The cause of death is listed as “failure to thrive”.) Similarly, female #3780, a first-time mother, was sighted on 31 December 2023; the calf was less than a day old at the time. Less than a week later, #3780 was spotted by both aerial and vessel surveys without her calf. The calf is now presumed dead.

The first calf of the season, born to Female #1612, *Juno*, elicited both joy and sadness. She was sighted off South Carolina on 28 November 2023. Joy. On 3 January 2024, the calf showed a serious injury, evidence of a vessel strike. Sadness. The calf’s carcass came ashore on Cumberland Island on 3 March. A necropsy was completed on 4 March.

Another event involved the yearling offspring of Catalog #4340, *Pilgrim*. This yearling was first seen on the SEUS grounds on 22 January by the North Carolina Whale Survey, and on 3 February off Melbourne Beach by BWRI. On 13 March this individual was sighted as a floating carcass off Tybee Island, Georgia. It was towed ashore and a necropsy performed on 15 March 2024. Lastly, female #3260, *Skittle*, was seen without calf on 21 March. We await further information. In summary, there were three calf and one yearling deaths in the 2024 season.

On the other hand, there were bright spots. A total of 19 calves were born, the highest in the past decade. Secondly, after a decline in population numbers, the population trend, compiled by the North Atlantic Right Whale Consortium, showed a flattening of the curve as of the December 2022 estimate. Will an upward turn follow?

Our education and outreach component included ongoing mentoring of Kyriaki (Kiki) Gavriil, Byram hills H.S., Armonk, New York, in the Authentic Science Research Program; and working with Sophia Abolfathi, a journalism student at the University of Florida in Gainesville.

Our work was conducted under NOAA/NMFS research permit #25652.

Summary Results

1.1 Sighting Effort

The number of volunteers increased and the survey area expanded in 2024 (Figure 1). The shore-based dedicated lookouts were active from Thursday, 4 January through Saturday, 9 March 2024. The network included ~ 260 volunteers monitoring a 70-nautical mile section of coastline from Ponte Vedra to New Smyrna Beach. Conservatively estimated, 8,000 hours of volunteer sighting effort took place. The survey area added an additional team to Area 1N, the Turtle Shores group. The weather and sighting conditions generally appeared cool, gray, and windy—and we opined that conditions were poorer than average. This is borne out by the survey effort summary (Figure 2).

1.2 Right Whale Sightings 2023-24

1.2.1 Overall Sighting Summary

In the 2023-24 SEUS season, the Marineland Right Whale Project and our partner organization, the Blue World Research Institute, received and responded to nine right whale sightings (Table 1, Figure 3). Of these, only one (3 February, off Melbourne, by BWRI) resulted in photography that provided for individual identification. Another sighting on 16 January just south of Marineland was identified as a mother-calf pair, but without individual identification. Several sighting responses (4, 18, and 19 February and 2 March) resulted in vigorous searches but without verification. On two other occasions, the responses yielded either a wood box or a tree trunk.

This season included one beachcast animal—a dwarf sperm whale, *Kogia sima*, that came ashore just north of the St. Mary’s Beach ramp, Butler Beach.

1.2.3 Human Impacts

No human impacts were reported in our area in the 2024 season.

1.3 Sea Surface Temperature

As has been our practice for more than a decade, daily sea-surface temperature plots were obtained from NAVOCEANO, Stennis Space Center, Mississippi. Water temperature data were also downloaded from the NOAA National Data Buoy Center monitoring site on the St. Augustine pier. Analyses are underway.

1.4 Collaboration with the Florida Fish and Wildlife Conservation Commission Team

We collaborate and communicate with other groups on a near-daily basis. This includes the Florida Fish and Wildlife Conservation Commission team. This collaboration includes several components, among them responding to public sightings, and the genetic sampling of calves (Table 1).

1.5 Professional meetings and participation

The MRWP provided summary information for a presentation at the Southeast U.S. right whale implementation team (SEIT) meeting on 10 May 2023.

We attended the annual meeting of the North Atlantic Right Whale Consortium, 24-26 October 2023, in Halifax, Nova Scotia.

1.6 Training and Public Outreach

We gave a number of talks between November 2023 and March 2024, as well as a television interview with First Coast News (Table 2). We had a display at the Marineland Market on 2 March 2024 (Figure 6). We also continued to support the right whale display at the Flagler Beach Museum.

Sharing images, videos, and results with our volunteers is central to the program. To this end, we prepared a summary video for the 2024 season, *2024 Volunteers* (runtime 7 minutes). This is on the YouTube channel of the Marineland Right Whale Project.

We continue to work with students. On 1 June 2022, we entered into an agreement with sophomore Kyriaki Gavriil and her faculty advisor, Megan Salomone, Byram Hills H.S., Armonk, NY, for mentoring in the Authentic Science Research Program. The project focus is: *Behavior and sociality in whales and their conservation implications*. Kiki worked with us during 18-24 February 2023 at our field site. With the assistance of Florida Fish & Wildlife staff, we arranged for her to visit the survey aircraft and the FWC field station. The review and interactions continued, and on Wednesday, 7 June 2023, Dr. Hain attended the science symposium and poster session at Byram Hills H.S. In the spring of 2024, Kiki attended the Westchester Science Fair and was awarded first place in her category (Animal Science).

In the 2024 season, we were contacted by Sophia Abolfathi, a journalism student at the University of Florida in Gainesville, working on her undergraduate capstone project. She met with us and volunteers on 24 February 2024. We continue to provide information on right whales and our program.

1.7 Disposition of Data

The submission of data and photographs to the Right Whale Catalog at the New England Aquarium, Boston, Massachusetts, will take place by early April 2024.. Archiving of data, images, videos, and reports is continuing. Our intentionally redundant backup system consists of two multi-Terrabyte external hard drives.

Discussion and Conclusions

The Marineland Right Whale Project continues to be a valuable contributor to right whale science and conservation. The experienced volunteers provide resources, skills, dedication, and experience. Invaluable.

The *Juno* story

The story for the first calf of the 2024 season starts with joy and ends with sadness. *Juno*, Female Catalog #1612, is 38 years old, and has had seven previous calves. On 24 November, *Juno* was sighted without a calf off Cape Hatteras, North Carolina, by the North Carolina Whale

Survey (Clearwater Marine Research Aquarium Institute). Just four days later on 28 November, she was sighted with a calf 7 miles off the coast of Georgetown, South Carolina by the SC Whale Survey (Clearwater Marine Research Aquarium Institute); making the calf just a few days old. The pair was sighted on several occasions in early December, but not in the remainder of the month. Then, on 3 January 2024, a charter fishing vessel, from Forever Hooked Charters, sighted the pair off Edisto, South Carolina—and captured video of the severely injured calf—with propeller marks and wounds on the dorsal rostrum (Figures 4 and 5). This was posted on Facebook on 4 January.

The pair were seen several times thereafter, and appeared to be exhibiting normal mother-calf behavior, including nursing. On 2 March, *Juno* was sighted off Ponte Vedra Beach, without her calf. The next day, 3 March, the calf's carcass came ashore on Cumberland Island. A necropsy was completed on 4 March. The carcass was heavily scavenged by sharks. According to NOAA, the necropsy indicated that lacerations on the head had penetrated into deep soft tissue and bone, leading to multiple sites of necrosis (tissue death).

Volunteers

Since the start of the program in 2021, and for the next 23 years, a group of dedicated and capable volunteers forms the core of the program (Figure 6). To characterize the group, we passed out questionnaires in March of 2023.

Of the 106 responses, there was ~ 2:1 ratio of females to males (69F, 35M). The mean age was 69, with a range of 22 to 94. Of the total, 86 were retired and 19 were semi-retired or working. The mean years volunteering in the program was 6, with a range of 1 to 23.

Being in Florida, a large proportion of the volunteers are senior citizens. A few examples from this season are Irene, age 96, and Dave, age 91. At the other end of the spectrum, are young people, often brought by their parent(s), such as Killian age 7, and Abby age 17, in her fifth year of volunteering for the program..

An important component of the volunteers' mission is public education and outreach (refer back to Table 2). Here, engaging the public involves not science and statistics, but storytelling, art and music (Figure 7). This is always subject to refinement, but, judging by responses, has been successful.

Sightings

As described earlier, sightings this season were sparse. Sightings by our group were the fewest in the recent six years (Figure 8). Low sightings are not without precedent, as we had no sightings in 2017 and 18, and a single sighting in 2012.

Finally, perhaps the best indicator of status and recovery of the right whale population is the annual calving reports (Figure 9). Variability occurred during decades of monitoring. Strong calving took place in the 2000 to 2011 period. A general decline followed. In 2024, the birth of

19 calves was the strongest in a decade. All involved look to a rebound. The population trend for right whales also hints at optimism. The 2023 NARWC report (Figure 10) shows a halt in the decline and a levelling off of the trend. What will the coming years bring?

Lastly, the 2024 MRWP sightings suggested a northward shift in the distribution. We are curious. Is this normal variability, or, a sign of the future? The dramatic habitat shift from the Bay of Fundy north to the Gulf of St. Lawrence is well documented. The 2023 Annual Report by the North Atlantic Right Whale Consortium calls for a continued commitment to both aerial and shipboard photo documentation to ensure that information necessary to evaluate individuals and the species as a whole are captured. The MRWP will contribute.

Two final thoughts:

- * Our collective efforts are aimed at the co-existence of whales and humans.
- * While we study whale behavior, we recognize that it isn't whale behavior that we can change. Instead, we wish to apply what we've learned about whales, so as to encourage changes in human behavior—leading us back to successful co-existence.

Source materials

<https://www.neaq.org/2023-2024-right-whale-mother-and-calf-pairs/>

<https://www.fisheries.noaa.gov/national/endangered-species-conservation/north-atlantic-right-whale-calving-season-2024>

[https://www.fisheries.noaa.gov/national/endangered-species-conservation/north-atlantic-right-whale-updates#north-atlantic-right-whale-calf-of-juno-\(2024-calf-of-#1612\)](https://www.fisheries.noaa.gov/national/endangered-species-conservation/north-atlantic-right-whale-updates#north-atlantic-right-whale-calf-of-juno-(2024-calf-of-#1612))

Pettis H.M., and Hamilton P.K. 2024. North Atlantic Right Whale Consortium, Annual Report for 2023. www.narwc.org

Acknowledgments

First and foremost, we are grateful for the good efforts and strong commitment of our colleague and research associate, Sara Ellis. Joy Hampp provides program support with the website and blog. Ralph Bundy, Terry Clark, Jack Dewhurst, and Sara Ellis are our capable drone operators. Bill Gough and Martha Garito are successful photographers. Program support is provided by the U.S. Army Corps of Engineers, Jacksonville District; the Batchelor Foundation; the Brookby Foundation, and private donors. In-kind services are provided by the University of Florida's Whitney Laboratory, the Guana-Tolomato-Matanzas National Estuarine Research Reserve, the Volusia County Beach Patrol, Jacoby Development, Inc., Marineland Dolphin Adventure, and many others. Collaboration and assistance with research and analysis was provided by the Blue World Research Institute, the Florida Fish and Wildlife Conservation Commission, and the New England Aquarium. Research was authorized by NMFS permit #26562.

Table 1. Sighting summary 2023-2024 season for the Volunteer Sighting Network, collaborative reports of the Marineland Right Whale Project and the Blue World Research Institute.

Date	Day	Time ¹	Location	Lat ²	Long ²	RW Class	Hdg	Pager #	Notes (Who sighted, etc.)	Verified?/ Photos?	Provisional ID
1 Jan 24	Mon	13:38	Flagler Beach	29°25.8'	81°03.9'	Revised to MC	STA, N	n/a	Public report to hotline from 3 rd story Flagler, Judy Bowman responded but saw nothing after 1 hr; Julie later discovered probable yearling via Facebook; got original videos from shrimper Jason Vogelsong	Vogelsong videos: unidentified m/c (per Katie Jackson: calf visible at end of video ending in 200)	Unidentified m/c
11 Jan	Thu	13:00	Flagler Beach	29 27.9	81 06.8	Adult	STA	OTHER043	Tony Caruso saw Facebook post on Flagler for Friends by Mike Robbins; relayed to Anita Dodd who asked for more info and relayed to Sara ~17:00; too late in day to respond. FWC posted alert next morning (within 36 hrs, per ACOE protocols)	Facebook video by Mark Robbins	Unidentified single
14 Jan	Sun	13:52	S of Canaveral	28 12.5	80 35.6	1 adult	S	OTHER045	public BWRI for details		
16 Jan	Tues	12:05	Surf Club, Palm Coast	29 38.4	81 11.2	MC	S	VSN001 MRWP	Paula Smith, Surf Club III sighted, called Jim: Jim, Sara, Lorraine responded, verify RW m/c from Linda Weigman's SC III balcony.	M Korchemkin stills from 6 th floor SC I	Unidentified m/c

Date	Day	Time ¹	Location	Lat ²	Long ²	Species/ Class	Hdg	Pager #	Notes (Who sighted, etc.)	Verified?/ Photos?	Provisional ID
19 Jan	Fri	09:27	American Beach, Amelia Is.	30 34.1	81 26.4	MC	S	VSN002 MRWP	7:30 jogger on Amelia Is. called Sara who called Lauri DeGaris in Fernandina Beach; Lauri verified RW m/c	Lisa Conger, NOAA flew drone for ID	#3546, Halo, & calf
19 Jan	Fri	13:53	New Smyrna	28 59.0	80 51.0	1 Adult	S	VSN003 BWRI	BWRI for details	BWRI	Unidentified single
24 Jan	Wed	13:40	Butler Beach, Mary St. beach ramp	29 48.6	81 14.3	Single	STA	FLWS027	12:17 Mike Shannon relayed info from marine radio, "m/c pair by pier". Mike & Cindy Alyea & some Team 1 Wed & Fri searched pier area. FWC plane boxed pier are: Nothing. Katie Jackson reported blows at Mary St. Jim, Sara, Lorraine responded, other vols joined. No pics from 3 drone flights by Sara & Jack Dewhurst. Land photos by Sam Knutson	FWC aerial photos	Yearling, 2023 calf of #1208
3 Feb	Sat	13:47	Near Nautilus, Flagler Beach			?	?	n/a	Response by Judy Bowman, Dale & Peach, Zoe Rauscher, John & Linda Wilson	Not verified	

Date	Day	Time ¹	Location	Lat ²	Long ²	Species/ Class	Hdg	Pager #	Notes (Who sighted, etc.)	Verified?/ Photos?	Provisional ID
3 Feb	Sat		Melbourne	28 02.4	80 32.5	Yearling	S	VSN004 BWRI	BWRI Joel responds	Joel drone video	2023 calf of Pilgrim, #4340
3 Feb	Sat		Butler Beach, N of Mary St. beach ramp	29 47.4	81 15.4	<i>Kogia sima</i>		n/a	Live stranding; public report to FWC; Sharon & Basil Gribbon called MRWP.	FWC euthanizes, transports to JAX Zoo for necropsy and species ID	<i>Kogia sima</i> , beach cast
4 Feb	Sun		St. Augustine pier	29 51.4	81 15.8	MC	S	OTHER069	Text from FWC: Mike & Cindy Alyea, Jack Dewhurst & FWC staff go to pier; see S of pier. Jim, Sara, Lorraine, Carol Logan, other vols & FWC staff spread out S of pier. Nothing further	Public video to FWC	Unidentified m/c
5 Feb	Mon		S. Flagler	29 27.8	81 06.7	Wooden box	S	n/a	Call to hotline from Kool Beenz coffee shop, Flagler Beach. Jim, Sara, Lorraine & Sector 2 vols respond. Sector 3 had seen earlier and dismissed.	Bill Gough photos	
10 Feb	Sat		Ponce Inlet Sunglow Pier	29 08.2	80 57.3	MC	N	VSN005, BWRI	Public call to hotline; Julie sends volunteer to verify. FWC sends plane	FWC plane	#1612, Juno and calf

Date	Day	Time ¹	Location	Lat ²	Long ²	Species/ Class	Hdg	Pager #	Notes (Who sighted, etc.)	Verified?/ Photos?	Provisional ID
17 Feb	Sat	13:20	Ponte Vedra Inn & Club	30 14.6	81 22.4	MC	E	FLWS062	Public report to FWC; Julie Albert & Joel Cohen responded on return from Tybee Is necropsy; FWC staff on site too. Slight glimpse from shore.	FWC plane	#1612, Juno and calf
18 Feb	Sun	10:20	Ormond-by-the- Sea	29 20.1	81 03.5	Single?	S	n/a	Public call to FWC, re post on Ormond BTS Facebook page. Zoe & Laura Rauscher dispatched; meet witnesses who saw "whale.". Sara, Jim, Lorraine, Peggy Jones et al. from Sector 4 search. Rainy, windy, sea state increasing. No joy.	Not verified	
19 Feb	Mon	12:05	St. Augustine pier	29 51.4	81 15.8	Single?	N	n/a	Report by couple from Embassy Suite hotel, relayed by worker at pier gift shop. Mike & Cindy Alyea, Pat Sell, Chuck Guagliardi respond. Search from pier then Anastasia State Park. FWC searches from end of Pope Rd. No joy.	Not verified	

Date	Day	Time ¹	Location	Lat ²	Long ²	Species/ Class	Hdg	Pager #	Notes (Who sighted, etc.)	Verified?/ Photos?	Provisional ID
2 Mar	Sat	11:21	Dondanville Rd., Saint Augustine	29 49.1	81 14.1	MC	S	FLWS072	FWC plane circling a sighting; Jim responds w Valerie Gruhot. Unverified from shore. First time Juno seen without calf (Next day, volunteers on alert for dead calf. Carcass washes up on Cumberland Is.)	FWC plane	#1612, Juno w/o calf
5 Mar	Tue	9:52	Surf Club, Palm Coast			Tree trunk	S	n/a	Mikhail Korchemkin of SC 1 calls to report whale calf; 10:01 sends photos saying it is driftwood. 10:28 Linda Weigman SC III calls in m/c pair; looks again, confirms driftwood. Sara responds for photos/videos.	Mikhail & Sara photos	
16 Mar	Sat	13:30	Turtle Shores, Ponte Vedra	29 59.1	81 18.1	?	NE	n/a	Turtle Shores residents watched for ~1.5 hr. Jacki Matloub and Shea Lox respond. Observers report V-shaped spout, repeated breaching, multiple whales. Mike Sammartino's i-Phone videos show large distant splashes; could be a whale. FWC vessel responds.	Not verified: video inconclusive; no sightings from FWC vessel	

¹ time typically assigned when verified and photographed

² foreign objects, e.g., wood, tree trunks, included when we made responses

Table 2. Presentations to groups and organizations, 2023-24 season

A: MRWP Volunteer Recruitment/Training/Informational

Date	Presenter	Detail
3 Jan 24	Sara Ellis	Season opener event and volunteer training, Whitney Lab, Marineland, FL (195 attendees)
10 Jan 24	Terran McGinnis Shea Lox	MRWP Team 1 North volunteer training and information session, Guana Tolomato Matanzas National Estuarine Reserve, Ponte Vedra, FL (32 attendees)
10 Feb 24	Sara Ellis Jim Hain	Mid-season update, Whitney Lab, Marineland, FL, (124 attendees)
17 Mar 24	Sara Ellis Jim Hain	End-of-season summary, Whitney Lab, Marineland, FL, (98 attendees)

B: Public Outreach & Education

Date	Presenter	Detail
8 Nov 23	Terran McGinnis	“All about Right Whales”, Main Branch of the St. Johns County Library, Saint Augustine, FL (8 attendees)
12 Nov 23	Frank Gromling	“Nature Big & Small” Center for Spiritual Living, Daytona Beach, FL (12 attendees)
7 Dec 23	Terran McGinnis	“All about Right Whales”, Anastasia Is. Branch, St. Johns County Library, Saint Augustine, FL (25 attendees)
9 Dec 23	Terran McGinnis	“All about Right Whales”, Palm Coast Community Center, Palm Coast, FL (30 attendees)
30 Jan 24	Sara Ellis	Interview with Robert Speta of First Coast News, Jacksonville, FL. Air date 31 Jan (runtime 1:27 min), followed by longer version 3 Feb (2:14 min). www.firstcoastnews.com/article/weather/uptick-in-right-whale-sightings-on-first-coast-sheds-light-on-the-endangered-species-florida-fish-and-wildlife-conservation-commission/77-055ac61b-58bb-4a2e-9b0f-9a2c50bb8626
24 Jan 24	Frank Gromling	“North Atlantic Right Whales”, Cinnamon Beach Recreation Center, Palm Coast, FL (36 attendees)
6 Feb 24	Terran McGinnis	“All about Right Whales”, Virtual Presentation for Florida Master Naturalist Program - Conservation Science Course (25 attendees).
21 Feb 24	Terran McGinnis	“All about Right Whales”, Saint Augustine Yacht Club, St. Augustine, FL (40 attendees)

B: Public Outreach & Education (continued)

Date	Presenter	Detail
2 Mar 24	Jeannie Cardany, Lorraine Cooley, Sue Delegal, Karol Doucette, Bill & Merrideth Gough, Lora Stillman	Right whale information table at the first monthly Marineland Market, Marineland, FL (several hundred attendees) www.marinelandmarket.com
2 Mar 24	Sara Ellis	“North Atlantic Right Whales: How You Can Help”, Gamble Rogers State Park, Flagler Beach, FL (24 attendees)



Figure 1. The 70 nautical mile section of coastline in Northeast Florida is partitioned into seven sectors, each about 10 nmi in latitudinal extent. Monitoring and responses in the area south of Daytona Beach to New Smyrna Beach is shared with our partner, Blue World Research Institute.

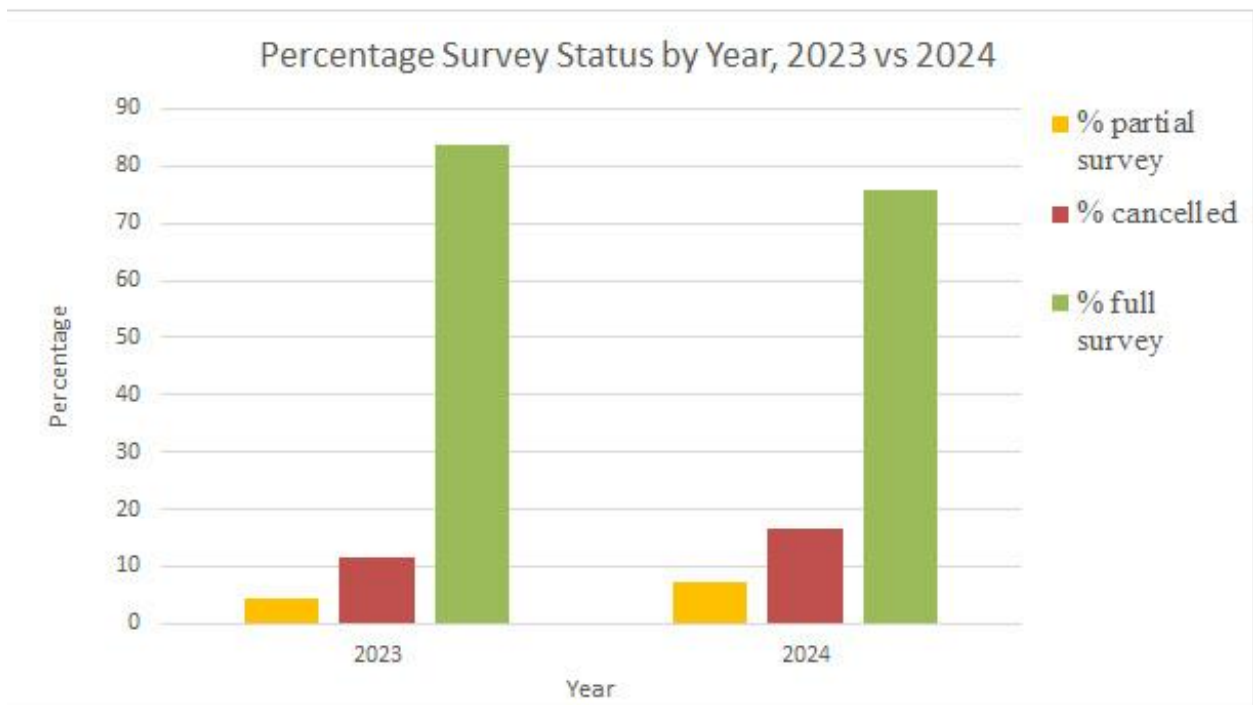
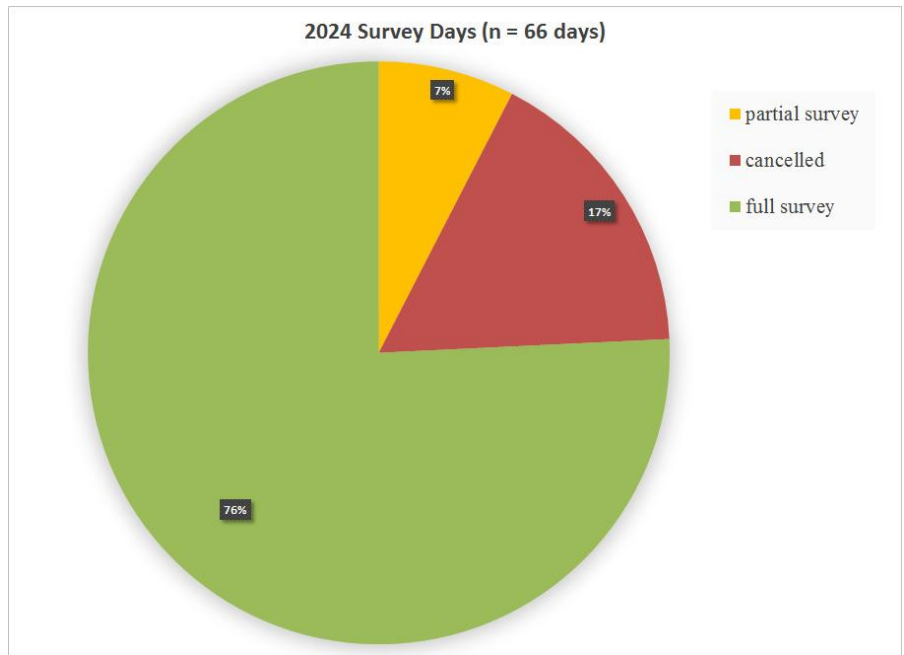


Figure 2. A crude measure of sighting conditions is provided by those days with good weather and good sighting conditions—as indicated by the survey effort. Above: Percentage of good, fair, and cancelled days for the 2024 MRWP survey effort. Below: Comparison of current and previous year.

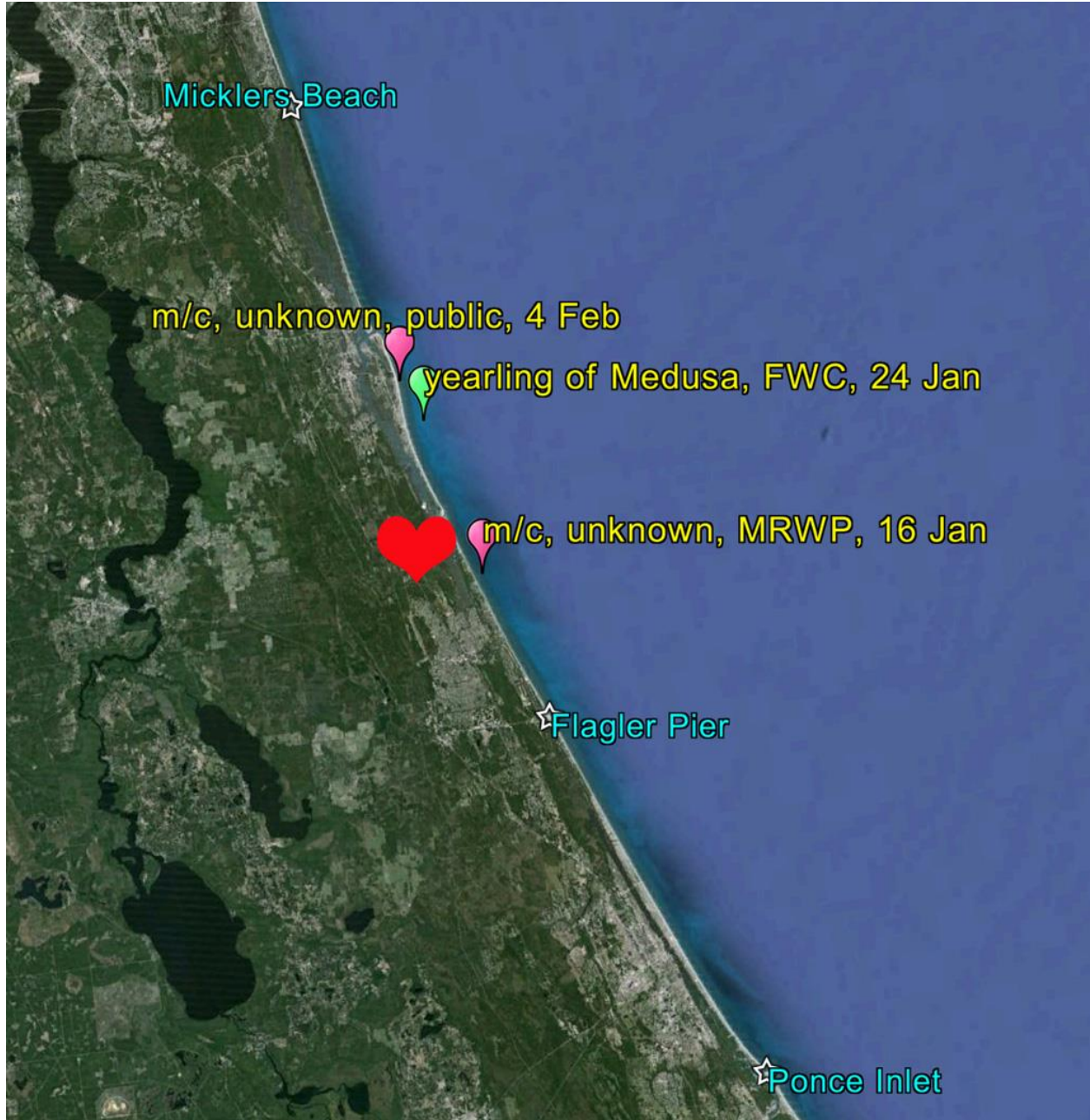


Figure 3. The verified sightings in the Marineland Right Whale Project area were sparse in the 2024 season. The whales were distant and elusive, and did not accommodate identification from shore photos. There were no sightings south of Marineland (the heart symbol).



Figure 4. The 2024 calf of Catalog 1612, *Juno*, was sighted on 3 January 2024 off Edisto, South Carolina, with propeller cuts and injuries to its head, mouth, and lip. Photo: Forever Hooked Charters of South Carolina.



Figure 5. The 2024 calf of #1612 (*Juno*) washed ashore on Cumberland Island National Seashore on 3 March 2024. The calf was first seen on 3 January 2024, with serious injuries to its head, mouth, and lip from a vessel strike. The carcass was heavily scavenged by sharks. Photo: Georgia Department of Natural Resources taken under NOAA permit #24359.

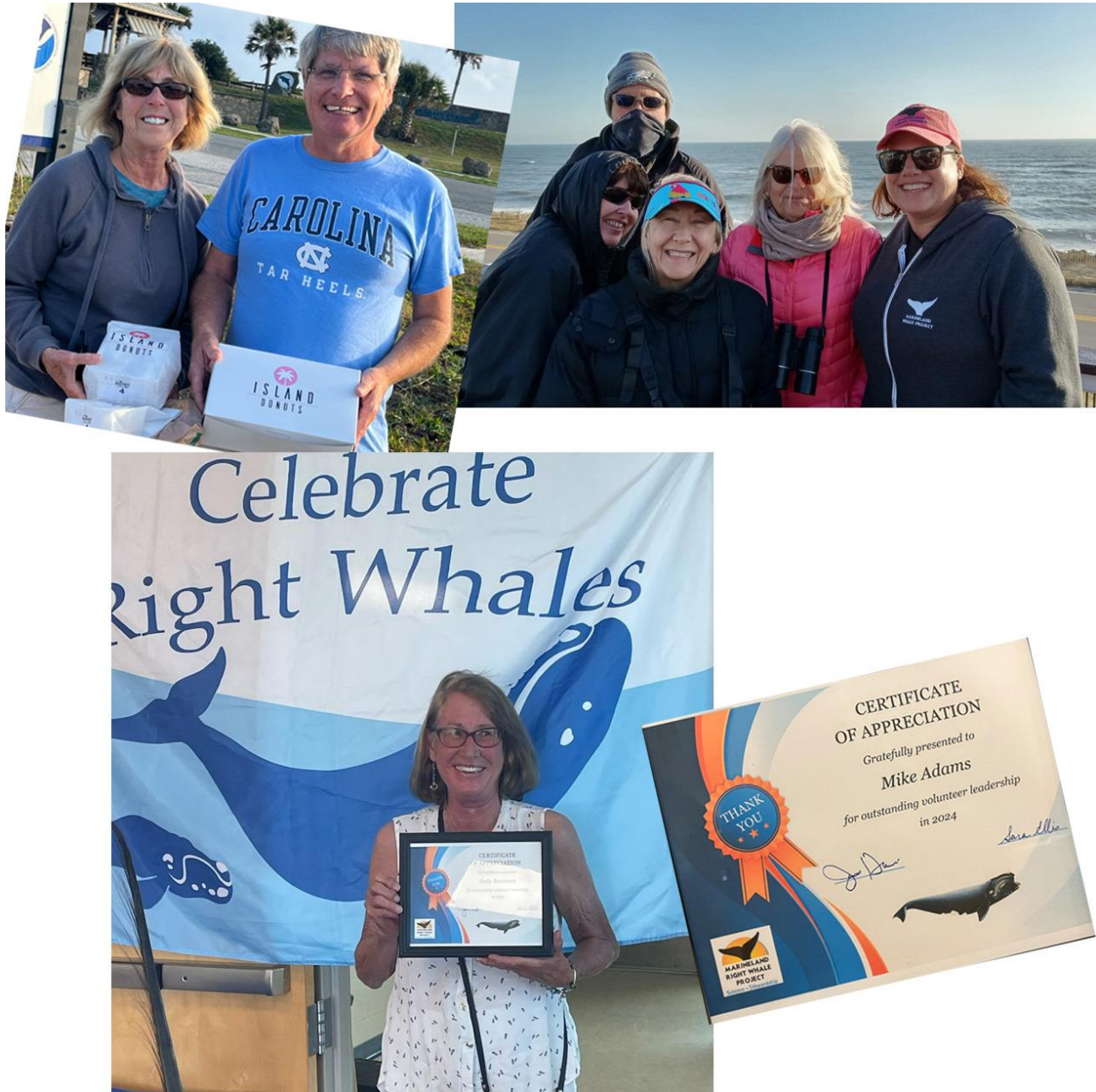


Figure 6. For more than two decades, our volunteers have been capable and dedicated. Above are examples of the day teams, below is Team 4 Leader, Judy Bowman, and (R) an example of the certificates of appreciation awarded to the fourteen hard-working team leaders.



Figure 7. Outreach and education are a core component of our mission. On 2 March 2024, volunteers successfully interacted with several hundred members of the public at the Marineland Market. (Photos: Bill Gough)

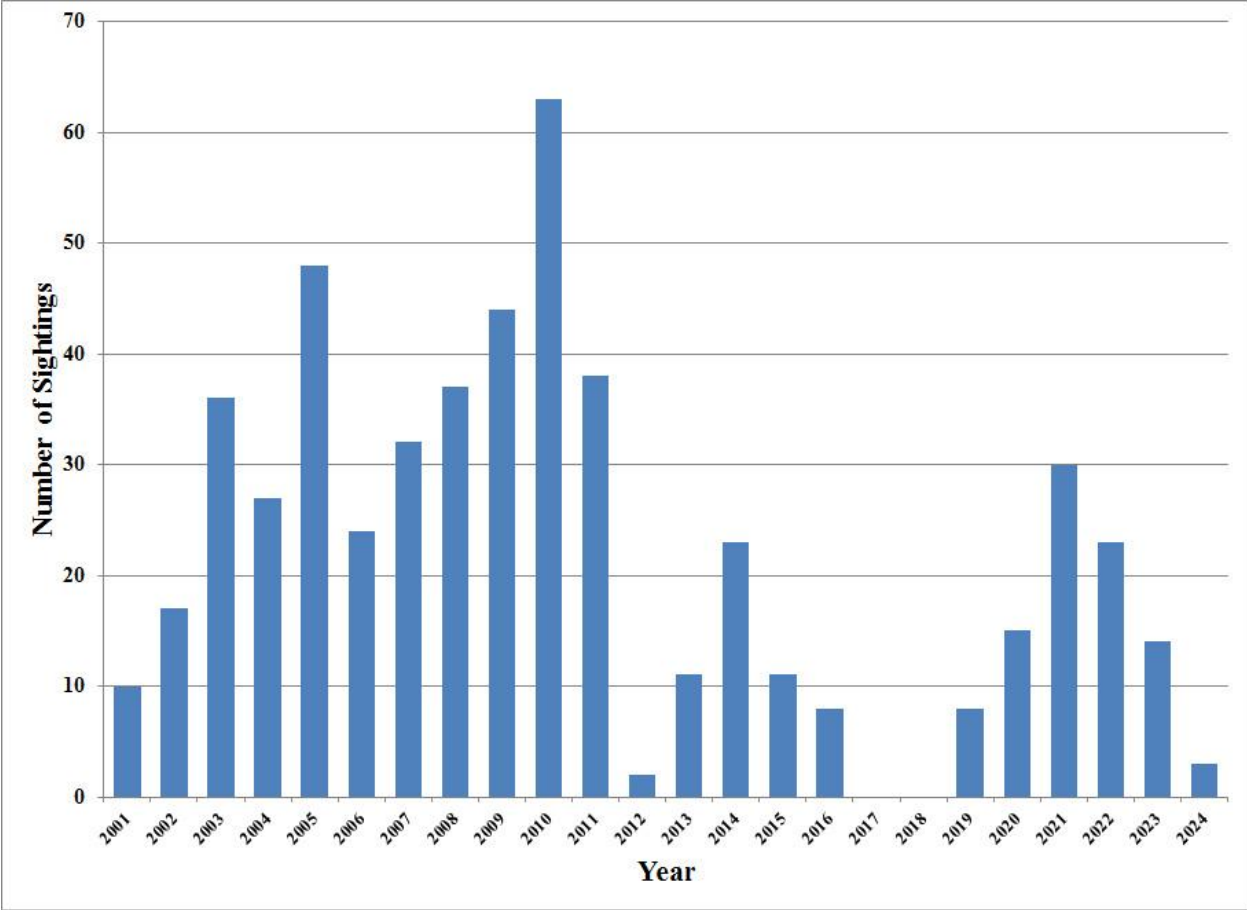


Figure 8. Total annual sightings by the Marineland Right Whale Project, 2001 through 2024.

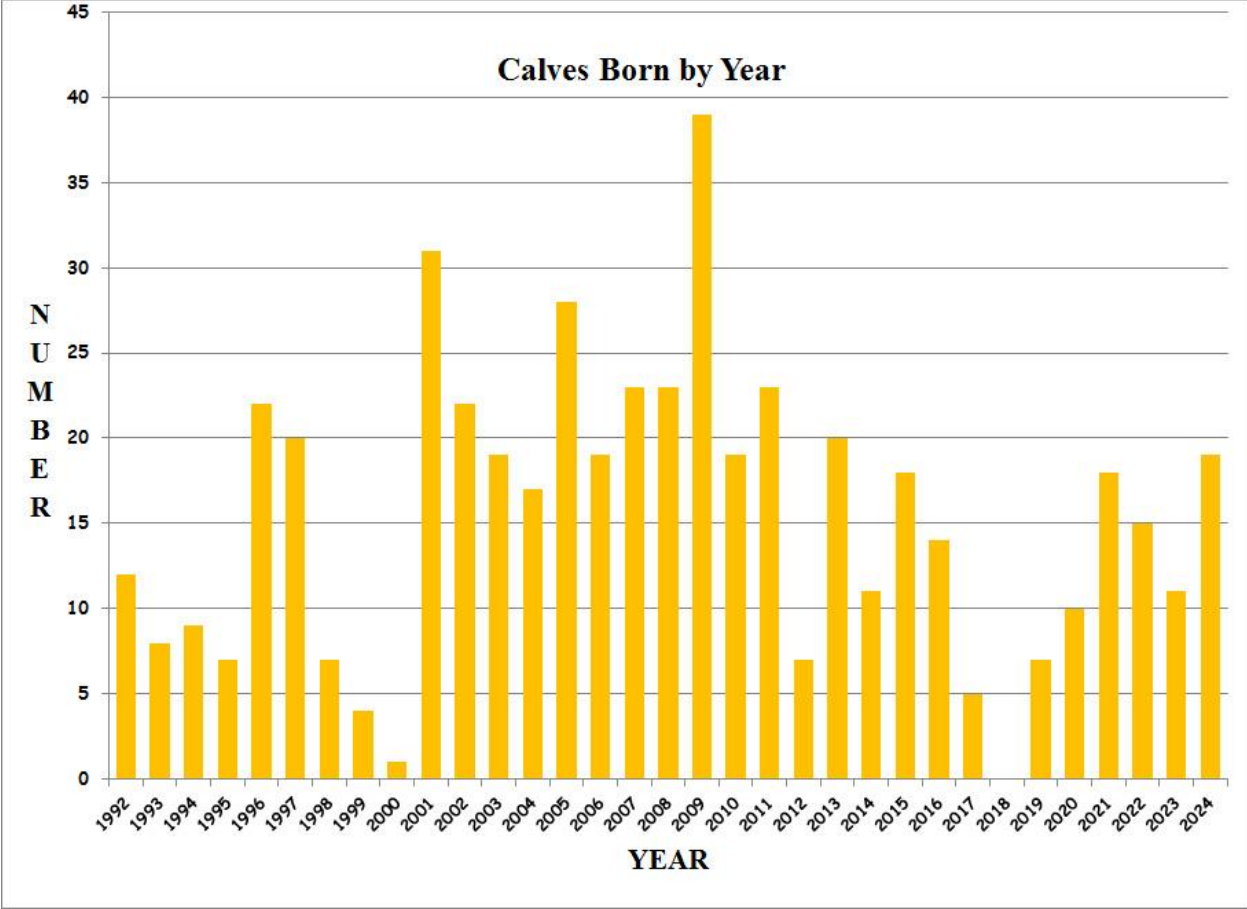


Figure 9. Total annual calf production by North Atlantic right whales, 1992 through 2024. Records compiled by the New England Aquarium.

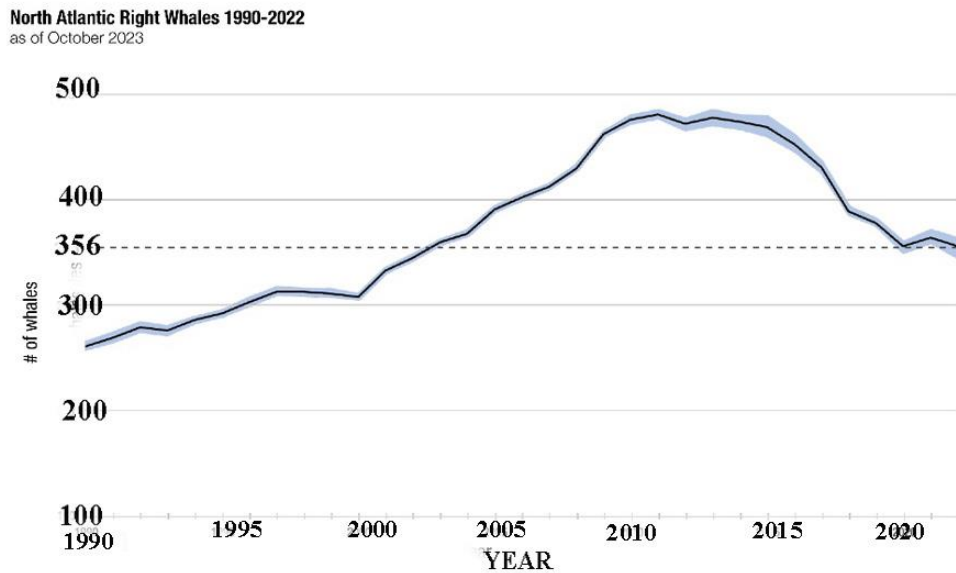


Figure 10 The population trend for the North Atlantic right whale, as of the end of December 2022. The recent years suggest a leveling off of the curve. The point estimate for December 2022 is 356 (+7/-10) individuals.

Source:

Pettis H.M., and Hamilton P.K. 2024. North Atlantic Right Whale Consortium, Annual Report for 2023. www.narwc.org

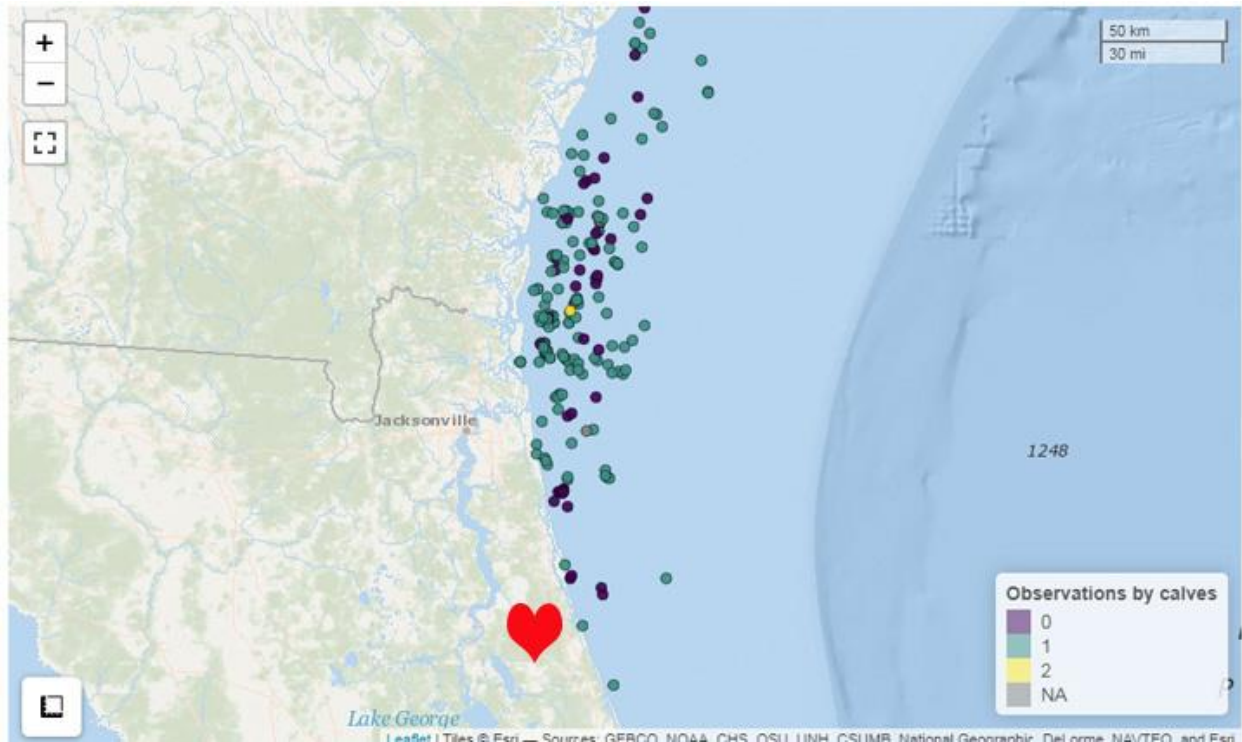


Figure 11. In the complete 2024 season, November through March, the majority of right whale sightings were to our north, off Amelia, Cumberland, and Jekyll islands; and on past Brunswick, Georgia. Is this a sign of things to come? Heart symbol = Marineland. Source: WhaleMap.org.