North Atlantic Right Whale Sightings and Group Composition in the VA/NC Mid-Atlantic: 2018–2023

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13

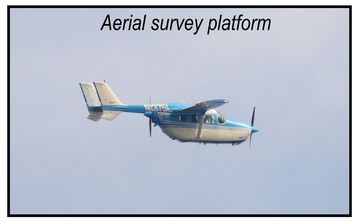
Introduction

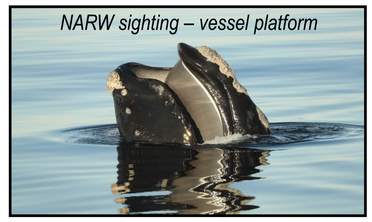
As part of the U.S. Navy's Marine Species Monitoring Program, HDR Inc. has been conducting aerial and vessel surveys for large whales off Virginia and North Carolina since 2015.

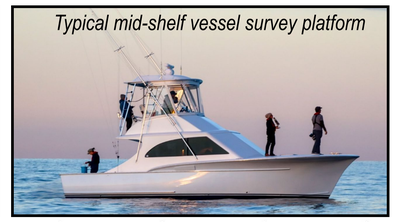

NARW sighting – aerial platform

Methods

- Non-systematic vessel surveys, which included a sUAS, occurred seasonally (primarily November – March) on 184 days in nearshore and mid-shelf waters and year-round on 90 days in offshore waters.
- A total of 37 aerial surveys, encompassing portions of coastal, mid-shelf, and offshore waters, occurred year-round, though effort was not consistent across months or years.


Aerial survey platform


NARW sighting – vessel platform


Typical mid-shelf vessel survey platform

Results

- Between April 2018 and March 2023 North Atlantic right whales (NARWs) were sighted 20 times over 17 survey days (**Figure 1**). Sightings occurred in January (n=6), February (n=5), March (n=6), April (n=2), and November (n=1).
- A concerted focus on locating NARWs during the winter of 2022/2023 resulted in a marked increase in the number of sightings and individual NARWs seen, with 27 unique individuals documented (**Table 1**).

NARW demographics:

- 46 unique NARWs identified; 25 male, 14 female, and 7 of unknown sex (**Figure 2**).
- Age class ranged from newborn to minimum 42 years (mean=14) (**Figure 3**).

Resight history:

- Nine NARWs were seen two or more times; two of those individuals were seen in different field seasons - #3360/Horton (1,057 days between sightings) and #4523/Beaker (746 days between first and last sighting); eight individuals were resighted in the same season 1–104 days between sightings (mean=22.5 days).

Group composition:

- Group size ranged from 1–8 individuals (mean=3) (**Figure 4**).
- Paired NARWs were seen on six occasions; two adult females (one pregnant), two adult male/female pairs, and three unique cow/calf pairs: #1245/Slalom and calf (2022), #4180/Dyad and calf (2022), and #2605/Smoke and calf (2023).
- Lone NARWs were observed on six occasions; four were yearlings, one was an adult female, and one was an adult of unknown sex.
- The remaining eight sightings were comprised of 3–9 NARWs, five of which were in surface active groups.

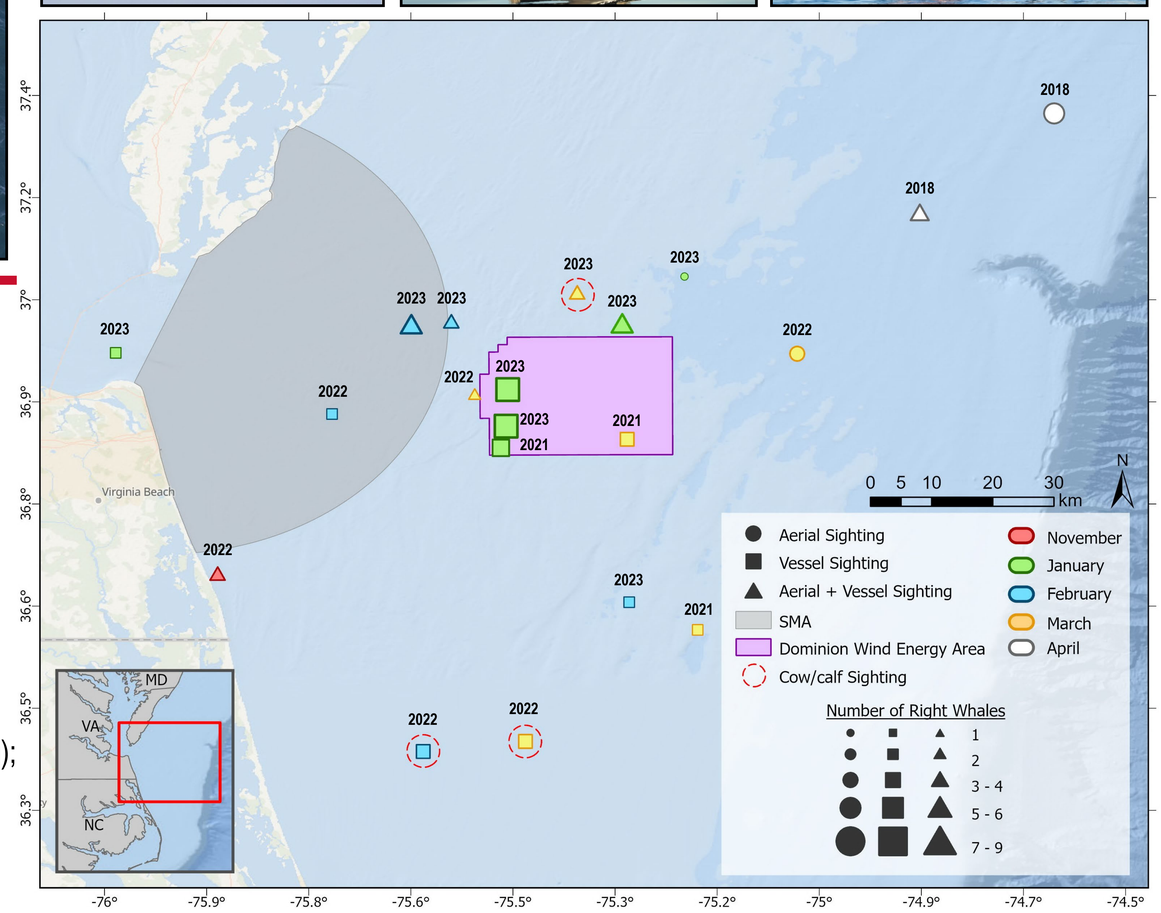


Figure 1. North Atlantic right whale sightings from HDR's aerial and vessel platforms collected off VA/NC from 2018 – 2023.

Season	Sightings	Individuals	Unique IDs for season
2017/2018	2	8	7
2018/2019	0	0	0
2019/2020	0	0	0
2020/2021	4	7	6
2021/2022	4	8	8
2022/2023	10	36	27

Table 1. NARW sightings by season for all aerial and vessel surveys off the VA/NC Mid-Atlantic between 2018 – 2023.

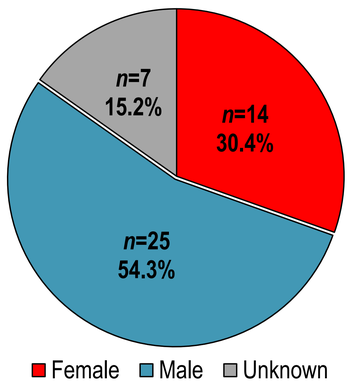


Figure 2. Sex ratio of 46 NARWs seen off the VA/NC Mid-Atlantic between 2018 – 2023.

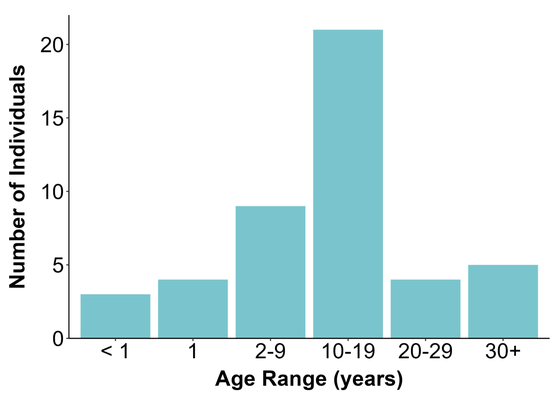


Figure 3. Age distribution of NARWs sighted off the VA/NC Mid-Atlantic between 2018 – 2023.

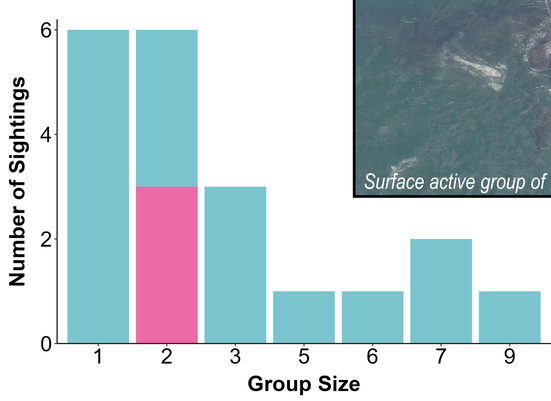


Figure 4. Group size of NARW sightings off the VA/NC Mid-Atlantic between 2018 – 2023. Shaded pink area indicates cow/calf pairs.


Surface active group of NARWs as recorded from sUAS

Discussion

- Data from these efforts highlight the seasonal importance of southern Virginia / northern North Carolina for all demographic groups of NARWs and the importance of long-term monitoring efforts.
- Within-season and between-season re-sights, along with behavior observed during these surveys (see Engelhaupt talk / 24 Oct 2023 – 1445) further support the VA/NC Mid-Atlantic as important habitat.
- Increased survey effort in this region will further elucidate key habitats outside of historical breeding and feeding grounds, particularly with respect to shipping activities and future offshore wind development.
- Observations of NARWs outside of Seasonal Management Areas suggest current protections for NARWs in the Mid-Atlantic may be insufficient.


Thank you!

Acknowledgements

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