



Humpback Whale Presence and Habitat-Use in High-Traffic Areas off Virginia

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¹HDR EOC

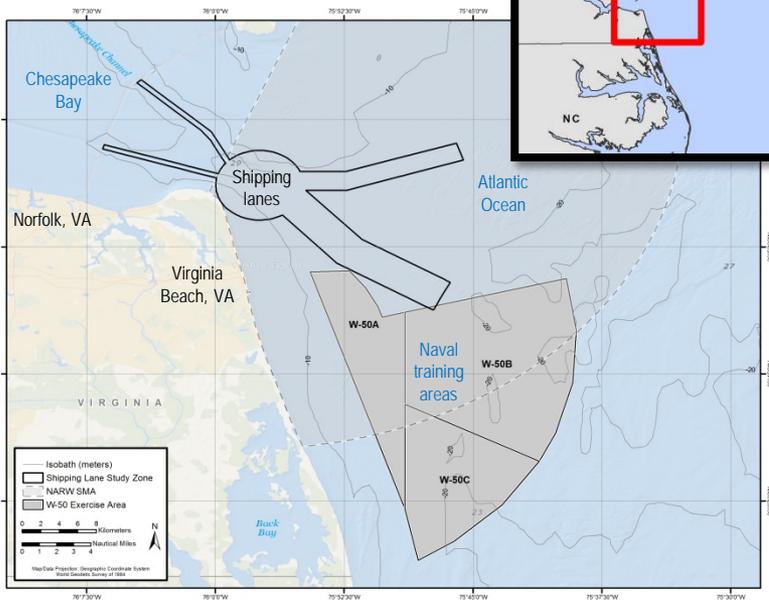
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Background

Norfolk, Virginia:

East Coast, United States



- Ranked 6th busiest container port in the United States
- Home of the world's largest Naval station – Naval Station Norfolk
- Also an area that humpback whales are known to occur seasonally



Study Questions / Methods (Year 1)

- What age classes of humpback whales are utilizing the waters within and adjacent to the mouth of the Chesapeake Bay?

[Photo ID, Biopsy](#)

- Do humpback whales exhibit site-fidelity over periods of days to years?

[Photo ID, Biopsy](#)

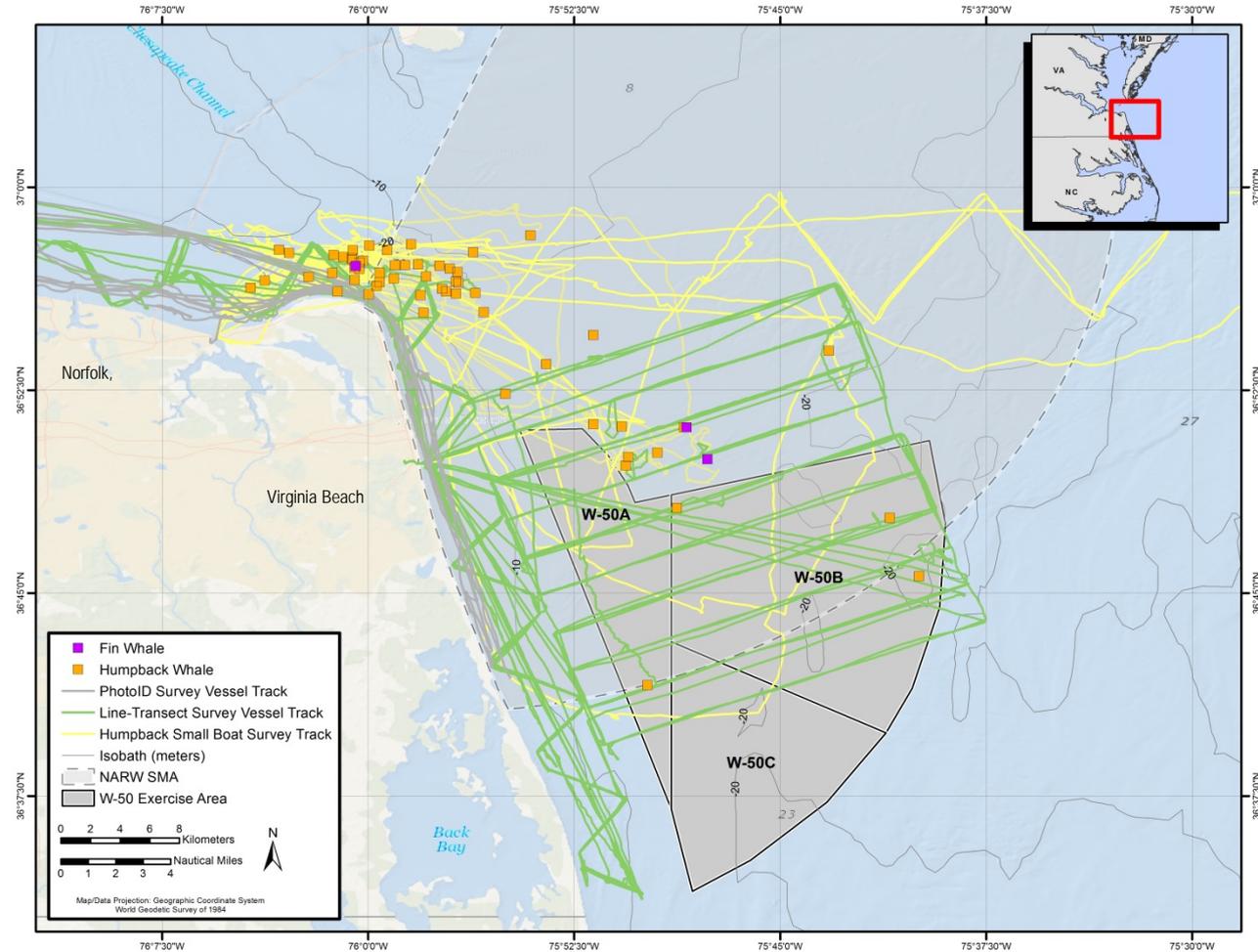
- Do humpback whales congregate in specific high-traffic and/or high-use U.S. Navy training areas?

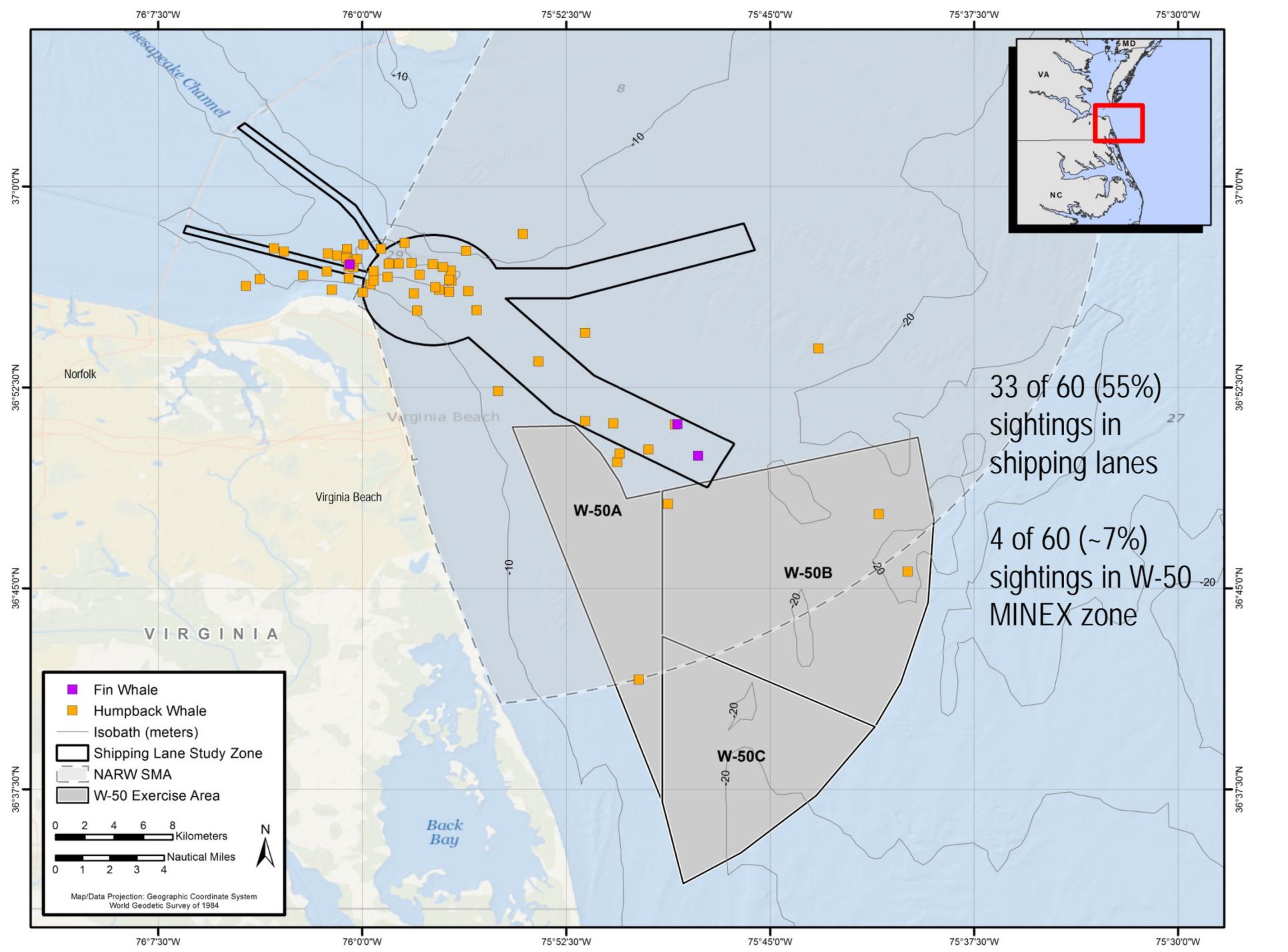
[Focal follows](#)



Methods & Results

- Small boat surveys conducted off Norfolk and Virginia Beach, VA between October 2014 – May 2015
- **37 days total effort in area**
 - Non-systematic & line-transect
- 60 large whale sightings from December 2014 – April 2015
 - 57 sightings of humpback whales
 - 3 sightings of fin whales





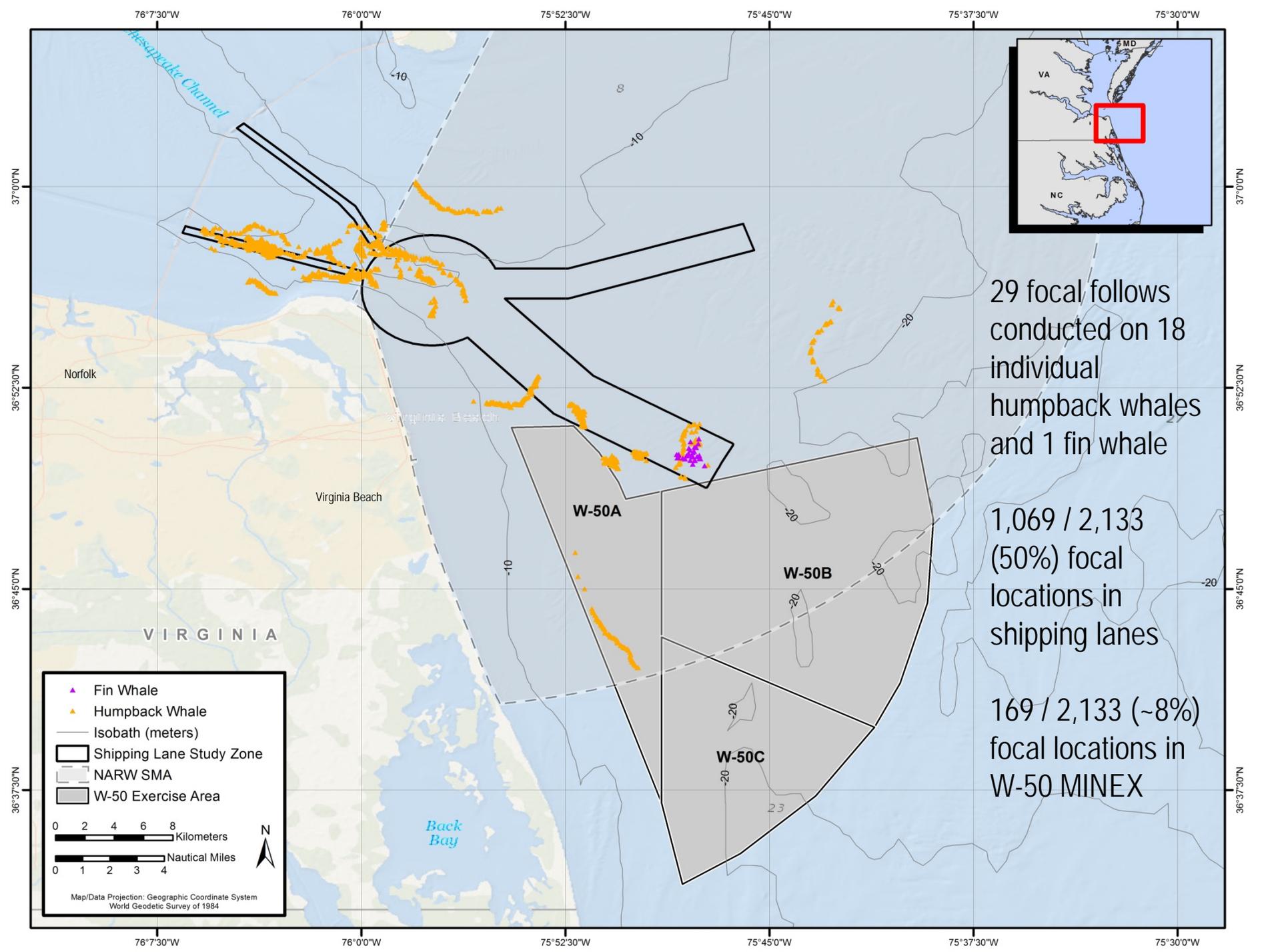


Photo-ID Results

- 31 unique humpback whales identified during 2014-2015 field season
 - 20 individuals (64.5%) estimated to be juveniles
- 16 of 31 individuals (51.6%) seen on multiple occasions
 - Re-sightings spanned from 2-53 days apart (median = 23 days)
 - 8 of 16 individuals (50%) seen on 4 or more occasions
 - Maximum number of times one individual was seen = 12 (including 2 same-day re-sightings)
 - 12 individuals (~39%) seen in the area in previous years (2011-2014) by the Virginia Aquarium (Malette et al. - Thursday am Bay 13:2)
- 2015-2016 season currently underway
 - 10 new individuals
 - 3 resightings of 2014/2015 season animals beginning in October 2015



Summary

- Seasonal presence of humpback whales in the waters off Virginia Beach.
 - From ~October - April
- Humpback whales and some fin whales utilize areas with a heavy volume of ship traffic from both cargo and naval ships.
- Both within-season and between season site-fidelity exists for some whales . Within-season site-fidelity spans from days to over a month.



Future Work / Questions

- Continue to answer site-fidelity, age-class, use of high-traffic / training areas questions.

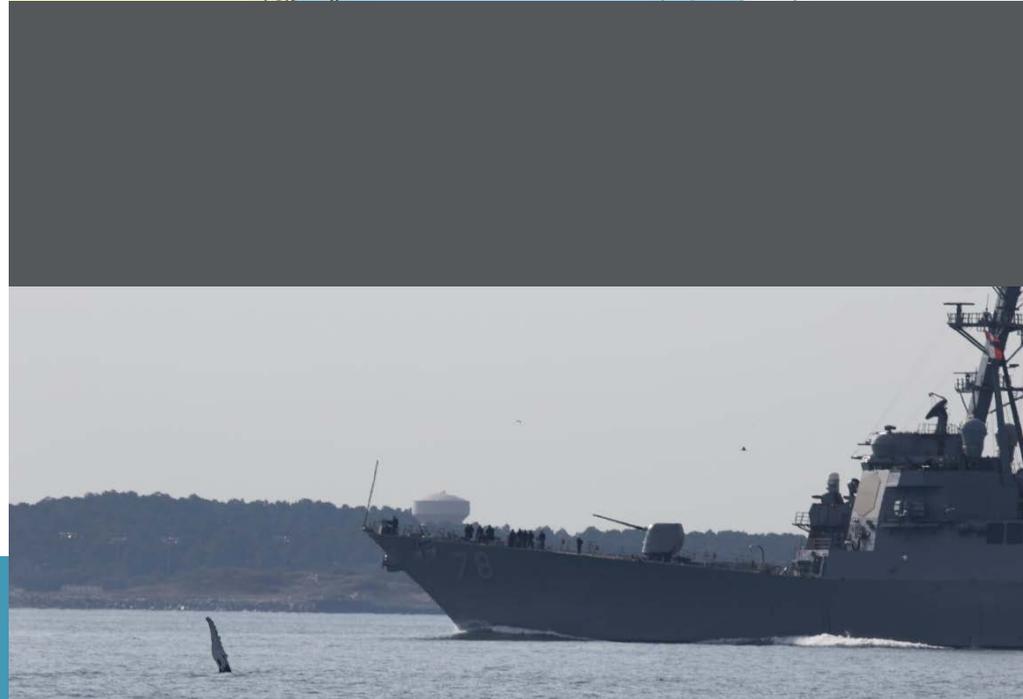
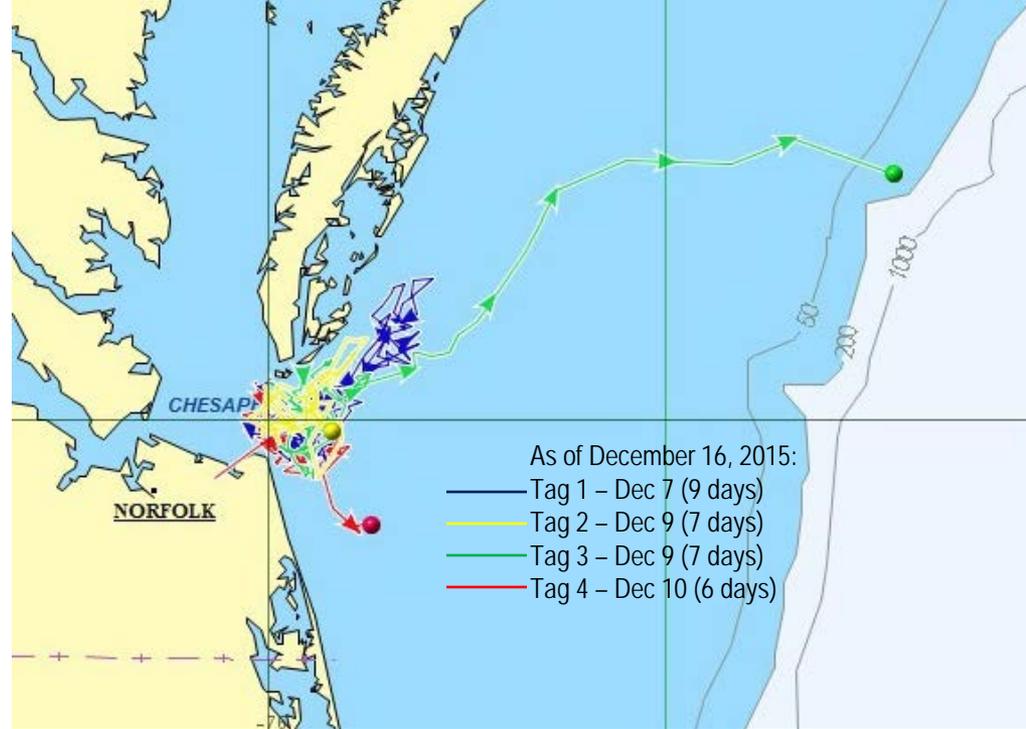
Photo-ID, biopsy, focal-follows, satellite tagging

- Do humpback whales spend significant time within or move through areas of U.S. Navy live-fire and MINEX exercises (Year 2)?

Focal-follows, satellite tagging

- What are the relative sound levels humpback whales are exposed to from vessel traffic and/or U.S. Navy training exercises (Year 3)?

Acoustic tagging



Acknowledgements

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