

Dolphins of the Potomac

Potomac-Chesapeake Dolphin Project

Dr. Melissa Collier, M.P.S., Ph.D., Georgetown University

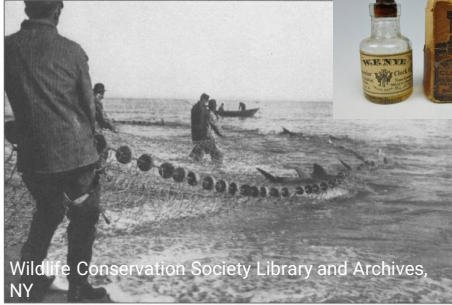
Verena Conkin, Ph.D Student Georgetown University



pcdolphinsproject.org



The history of dolphins in the US



Wildlife Conservation Society Library and Archives, NY



Lot-Art



Marineland Dolphin Adventure



Florida Memory



NOAA

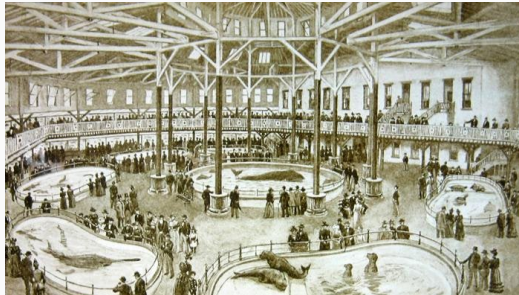
1797 Dolphin Fishery

1948 Research

1972 MMPA

1913 New York Aquarium

1964 Flipper & Environmentalism



NYC Parks



Classic-TV Database

The importance of dolphins in the Potomac River

Predator

Sentinel species

Flagship species



Illustration (adapted) by Greg Harlin, Wood Ronsaville Harlin, Inc.

The importance of dolphins in the Potomac River

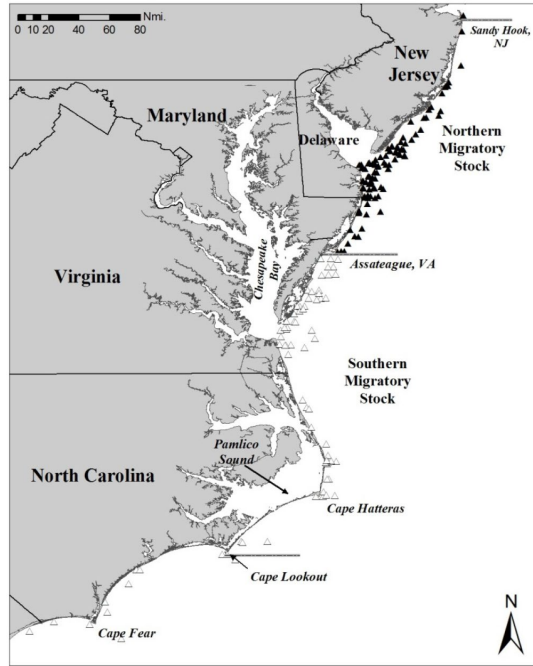


Chesapeake Bay Magazine

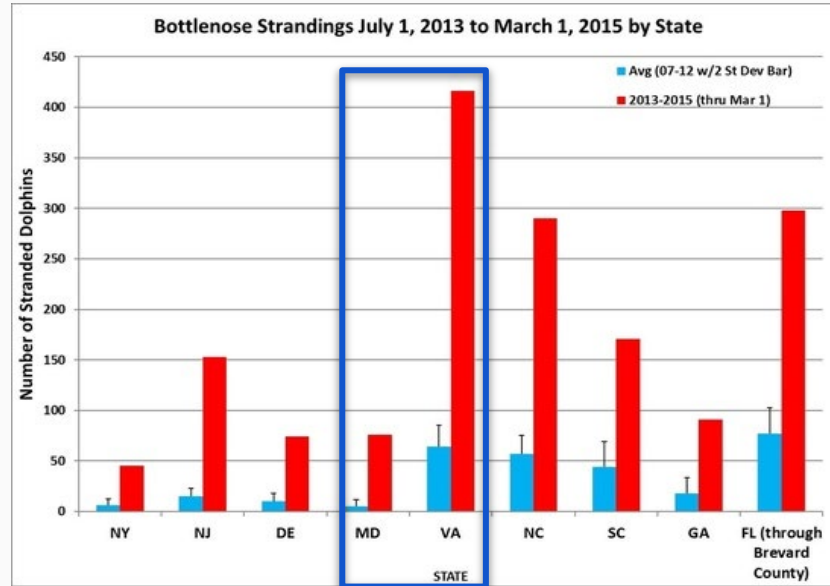
Chesapeake Bay Foundation

Motivation for the Potomac-Chesapeake Dolphin Project

Conservation without representation



Deadly disease peaks in the Chesapeake region



Map and chart from NOAA



Janet Mann, Ph.D.
Director

Questions of Interest

- How long have dolphins been living in the Potomac?
- Where and when are dolphins living in the river? Where else do they go?
- How many are there? Who are they? Do the same ones return?
- What are they doing in the river?
- How does disease spread among these dolphins?
- What are the threats to dolphins?



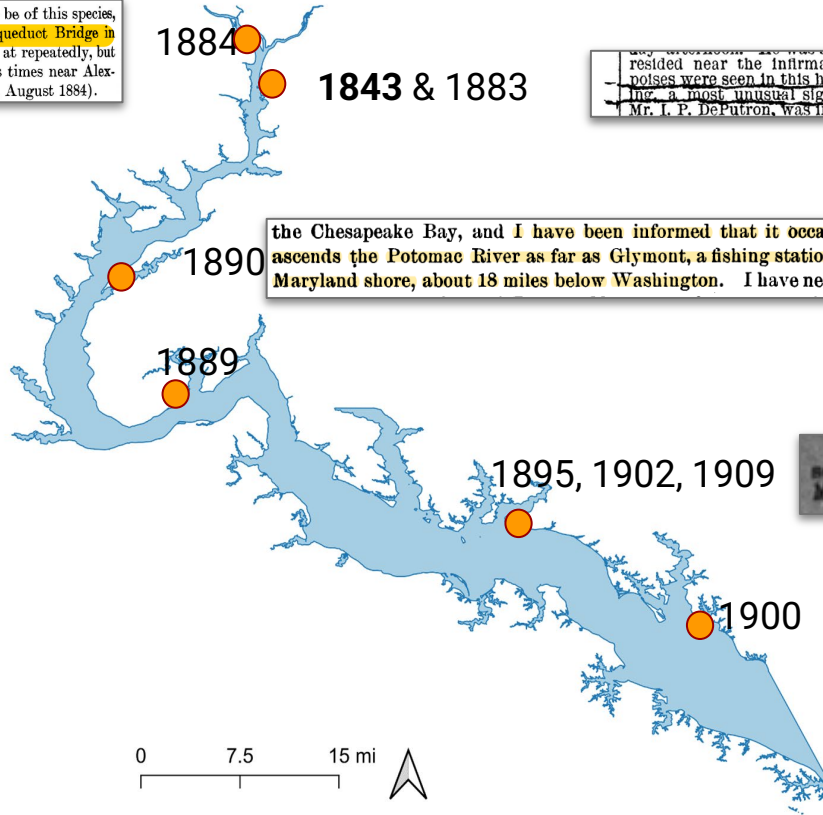
Have dolphins always been residents of the Potomac?

On 27 and 28 July 1884, a porpoise, presumed to be of this species, was observed in the Potomac River above the Aqueduct Bridge in Washington, D.C. It was chased by boats and shot at repeatedly, but not captured. The species has been seen at various times near Alexandria. (unsigned note in The Pastime, 3(2), p. 14, August 1884).

1884
1843 & 1883

resided near the infirmary.—A school of porpoises were seen in this harbor on Monday evening, a most unusual sight.—A little lad, son of Mr. J. P. DePutron, was injured on west Fairfax

the Chesapeake Bay, and I have been informed that it occasionally ascends the Potomac River as far as Glymont, a fishing station on the Maryland shore, about 18 miles below Washington. I have never seen

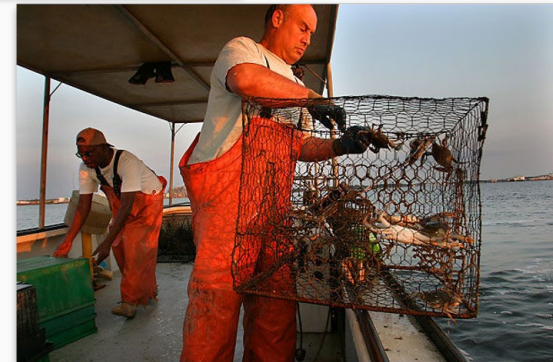


The first school of porpoise, this season, visited Britton's Bay last Monday.



Ann-Marie Jacoby
Ph.D. Candidate
Associate Director

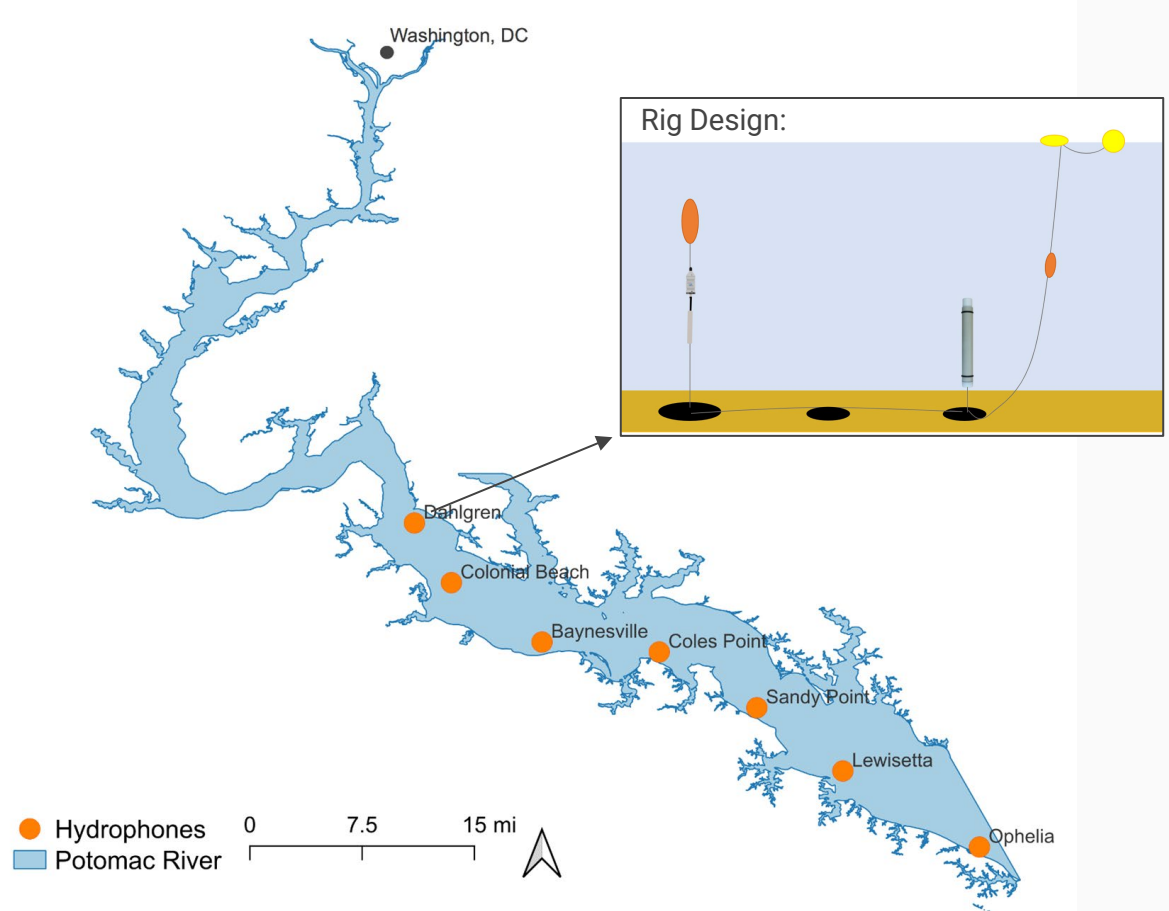
Jacoby et al. in prep



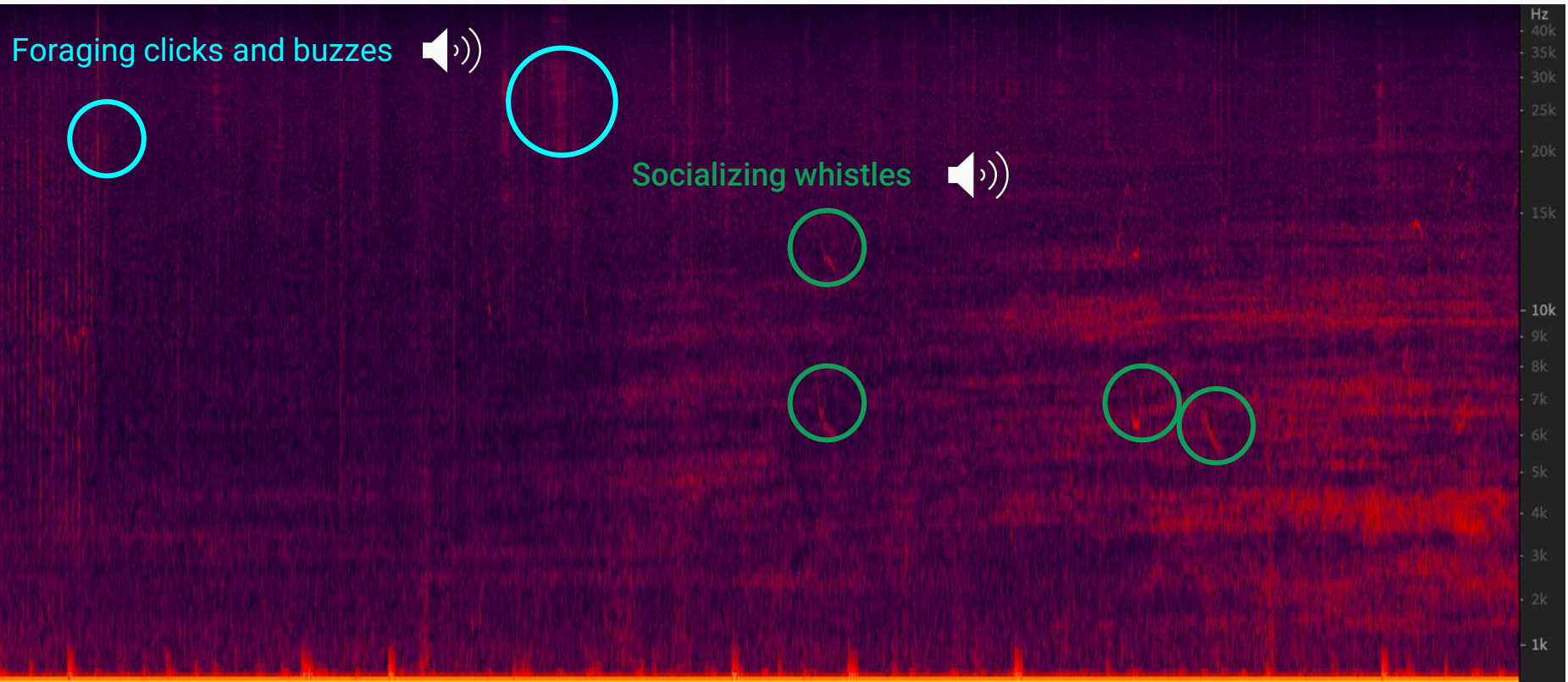
How far up the river do dolphins go today?



Dr. Ellen Jacobs, Georgetown University and
Ann-Marie Jacoby, Associate Director PCDP

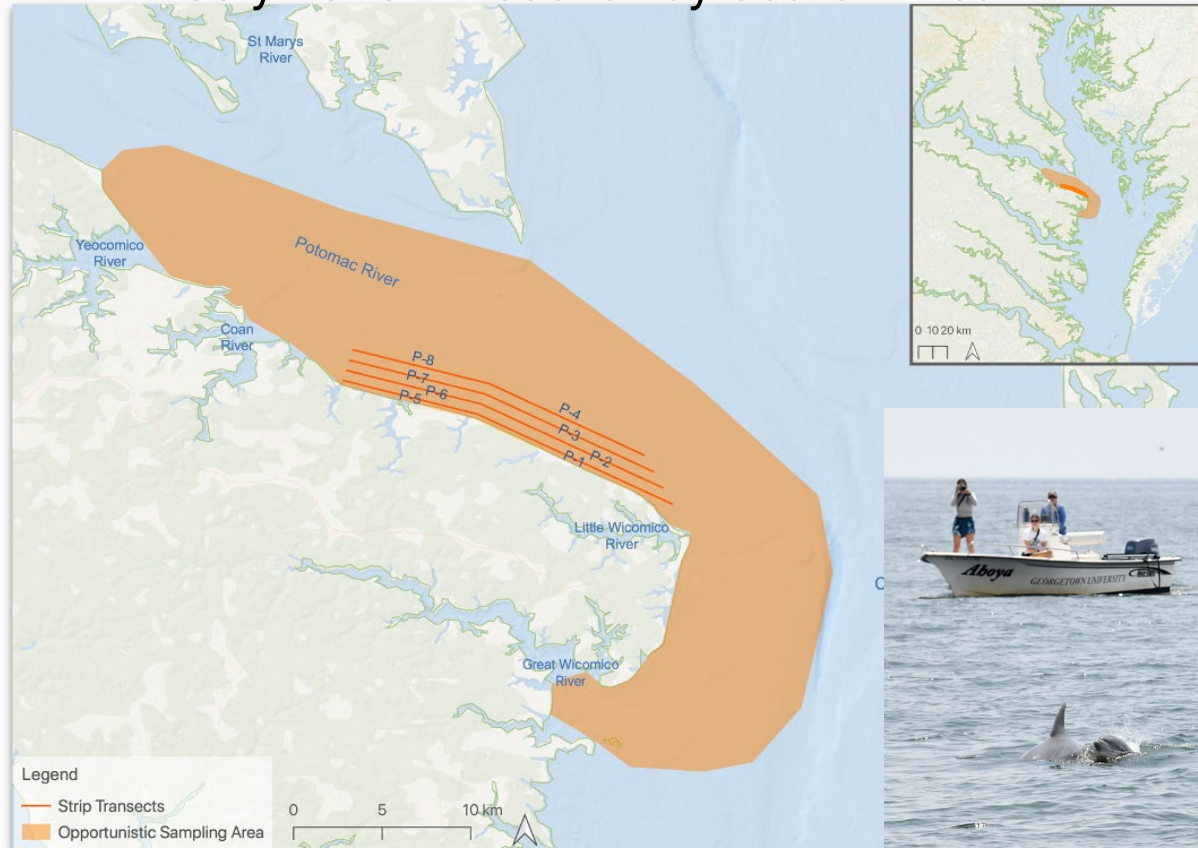


How far up the river do dolphins go today?



Spectrogram of Potomac dolphins (Ellen Jacobs); Audio examples from Sarasota, Florida (WHOI and SDRP)

July 2015 - Present Day Search Area

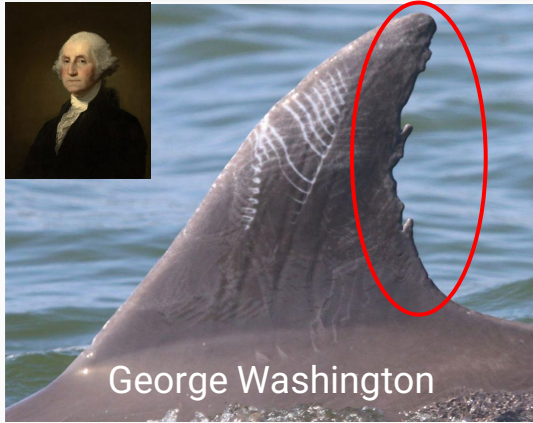


When do dolphins use the Potomac?

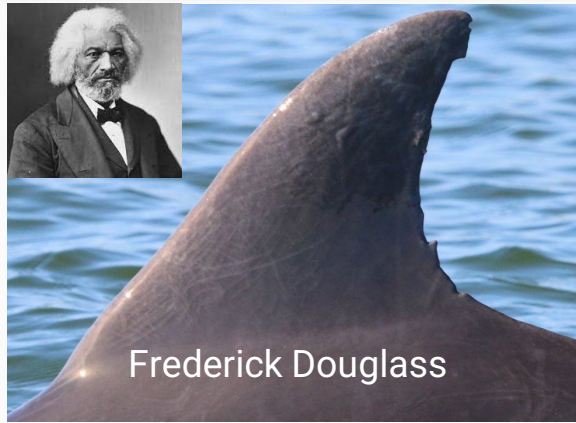
- 519 sightings since July 2015
- Sightings between April-October
- Sightings peak July and August when water temperatures peak
- No detections December-March (2020-2021 and 2021-2022)



Who are these dolphins?



2018



2019

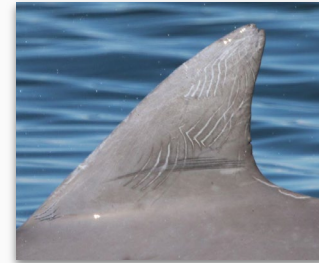
2024

- 19% resighted across years
- 13% resighted w/in year
- Resights suggest multi-year associations



Ulysses S. Grant

Adlai Stevenson



Taking a bird's eye view

What can a new perspective tell us?

- Body size & condition
- Fine-scale behaviors
- Anything near (but beneath) the surface
- Group dynamics



What are they doing in the Potomac?

72% Travel

Group Size:

- Avg. **20**
- Range: **1-232!**



16% Forage



What are they doing in the Potomac?

7% Socializing

- Bonding
- Aggression
- Breeding



Why are mothers so important?

- Linchpins of populations
- Long lifespan - 40s to 60s
- ~17% or 253 mothers
- Births peak early May-June



All photos taken by Jacoby and Collier under NMFS Permit No. 19403 and 23782

Birth in the Potomac!

17-August-2019

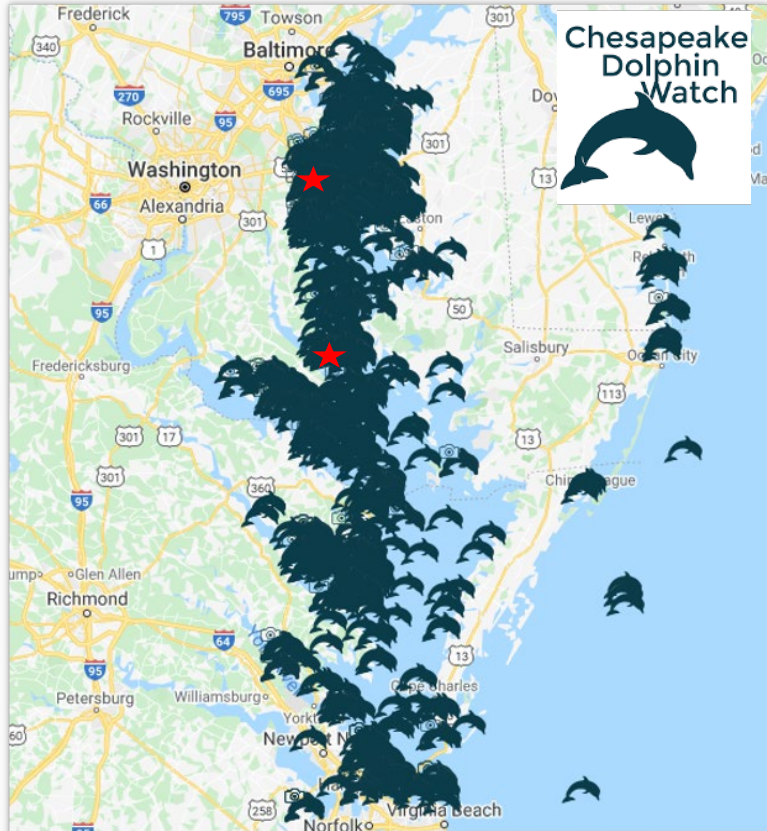


10-September-2019



Patsy and Gwendolyn Mink

Where else in the Chesapeake are they going?



Dr. Helen Bailey, ChesapeakeDolphinWatch.com

Chesapeake Bay Dolphin Watch Citizen science data 2017-present



George W. Bush



Zachary Taylor



Where else along the coast do they go?

Mid-Atlantic Bottlenose Dolphin Catalog

6 sites
1990-present

James Madison

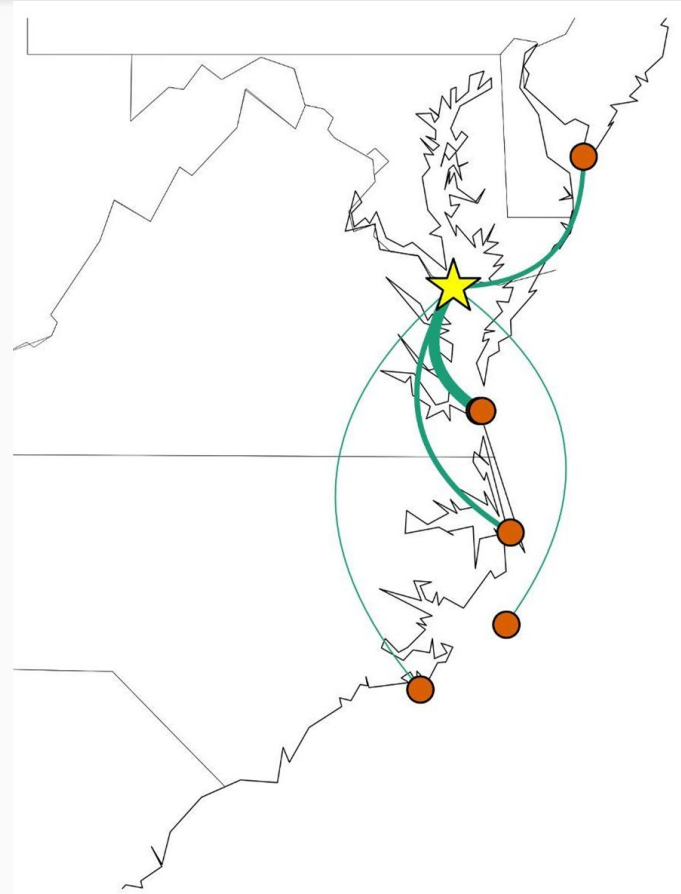
July: Potomac River

March: North Carolina

🔍 Crop & Zoom 🔄 Flip 🖨️ Grayscale 🌞 Brightness 📏 Contrast 🌑 Opacity 🔄 Undo EXIF



Site ID MD-PCDP_update MABDC ID 32064 Original ID PC00501 Images 1: 3305-03-24-2-2-2 2: NC-DUM-UNCW 74270 (1) 3: NC-NCHM 2015 3969a (1) 4: NC-NCHM 2015 3969a (2)	Match ID 448 Matched with NC-DUM-UNCW 74270 NC-NCHM 2015 3969a	Age - #sightings 1 Sex - Stranded No Features N/A	Site ID NC-DUM-UNCW MABDC ID 14726 Original ID 74270 Images 1: 3305-03-30-1-2-2 2: MD-PCDP_update PC00501 (1)	Match ID 448 Matched with MD-PCDP_update PC00501	Age A #sightings 1 Sex U Stranded No Features Dorsal Fin - Trailing edge, upper half
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Cetacean Morbillivirus: The dolphin version of COVID-19

Transmitted through
respiratory droplets

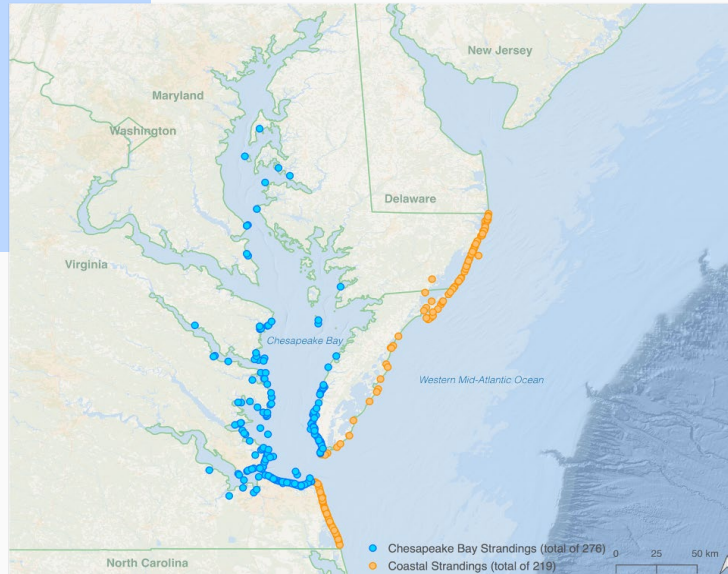
Synchronized breathing

**How might the variation in
this behavior affect who's
most at risk?**

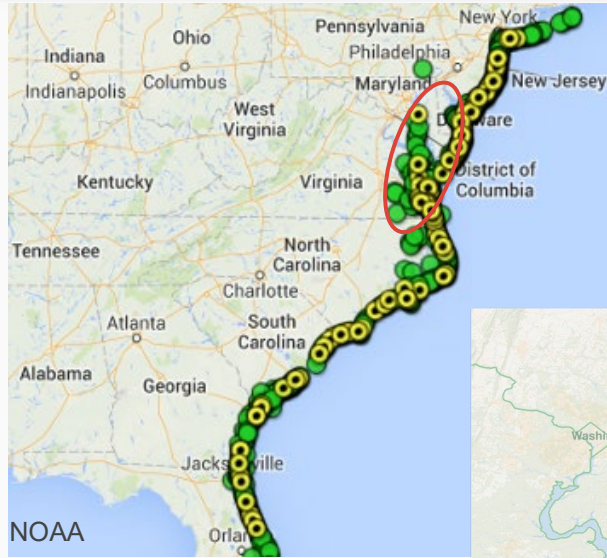
Morbillivirus = Measles
>1650 found dead
~20,000 estimated



imgflip.com



Map: Ann-Marie Jacoby, Data from NMFS



Trouble in paradise: additional threats to Mid-Atlantic dolphins



Photos taken by Jacoby, Collier, Conkin, Patterson under NMFS permit numbers 19403 and 23782

Trouble in paradise: additional threats to Mid-Atlantic dolphins

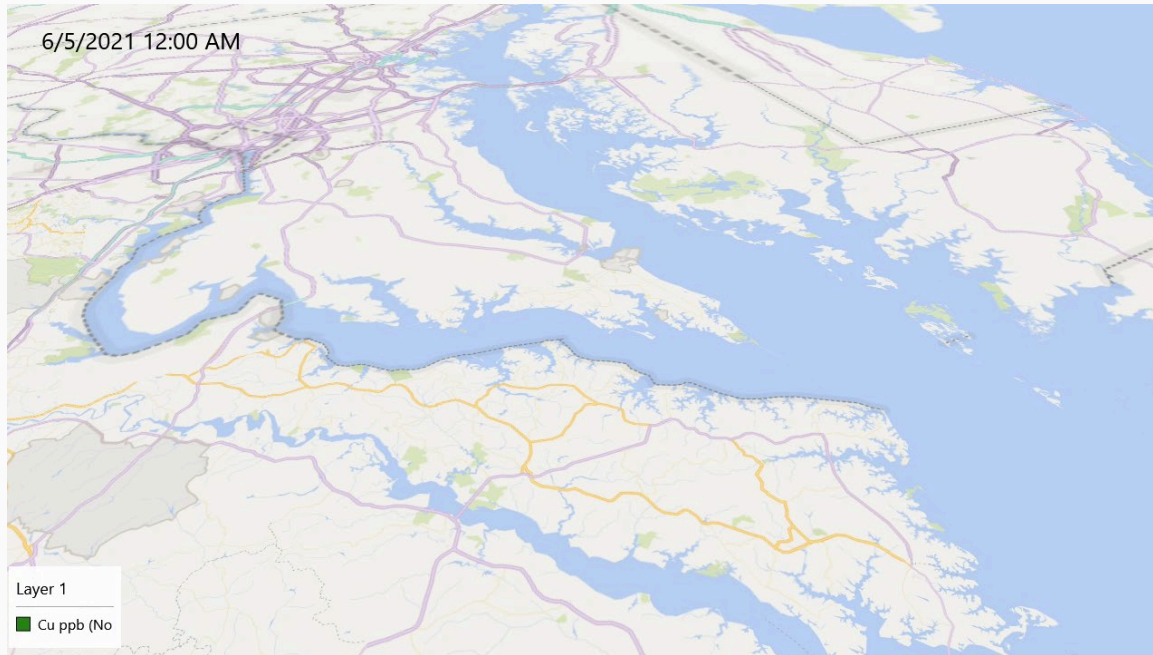


You don't look so good....

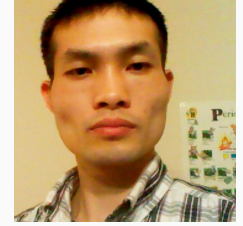


All photos taken by Jacoby, Collier, Conkin under NMFS Permit No 19403 & 237

What starts upstream ends up downstream



Dr. YuYe Jay Ton,
Professor, Department
of Chemistry,
Georgetown University



Dejun Chen Assistant
Teaching Professor,
Georgetown
University

Copper levels at 7 sites in the Potomac June 2021-Nov 2021

**Similar findings for cadmium and lead



Your environmental stewardship makes a real difference!



- Habitat protection and restoration
- Reduce runoff, pollution and litter
- Support research!

Maybe we'll see this near Key Bridge once again!

Thank you!



Janet Mann, Ph.D and Lab
Shweta Bansal, Ph.D
Andy Read, Ph.D and Lab
MABDC Contributors
Smith Point Marina
2015-2024 Field Teams



Individual Donors

ENVIRONMENT INITIATIVE
GEORGETOWN UNIVERSITY




Questions?



Video taken by Dolezal under NMFS Permit No 19403

Contact or Follow Us!

 pcdolphinproject@gmail.com

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pcdolphinproject.org

EXTRA SLIDES

What are they doing in the Potomac?

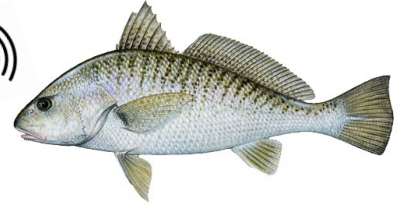
16% Forage



Taken by Jacoby under NMFS Permit No. 19403



Summer Flounder



Atlantic Croaker



Weakfish



Striped Bass



Menhaden



Shad

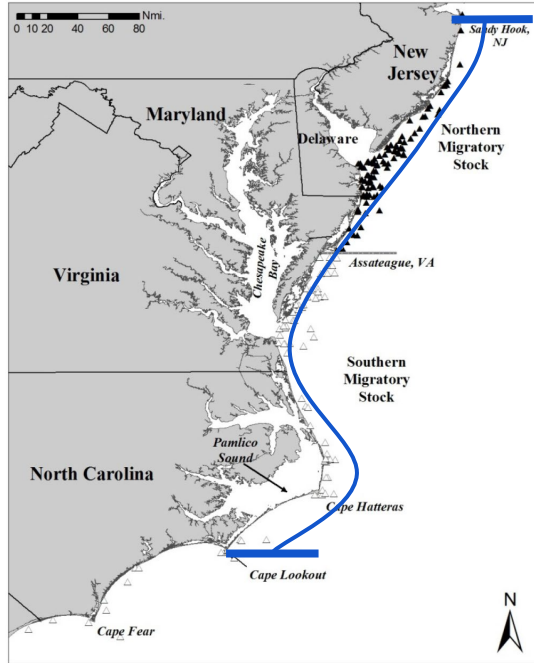


Spot

All illustrations from MD DNR
Jacoby et al. in prep

What population do our dolphin's belong to?

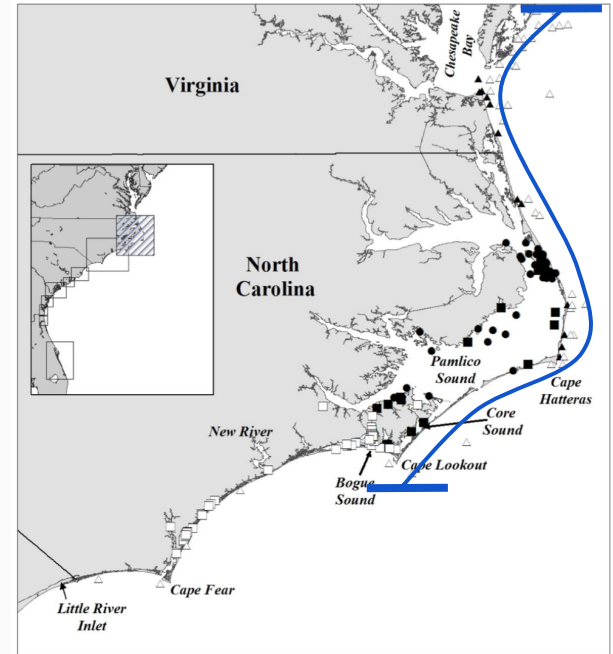
Northern Migratory Coastal Stock



Southern Migratory Coastal Stock



Northern NC Estuarine Stock



Maps from NOAA