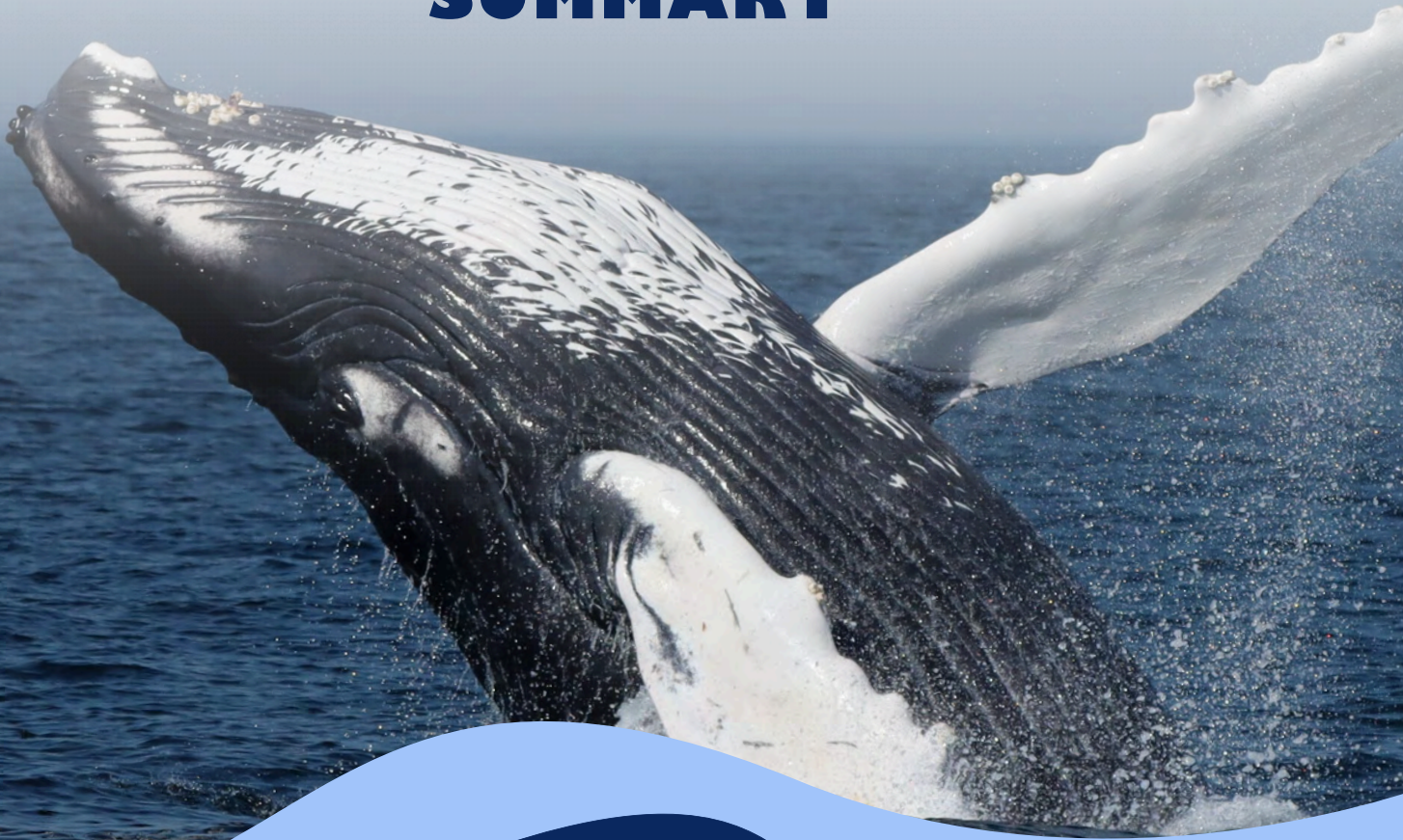




2023

WHALE RESEARCH

SUMMARY



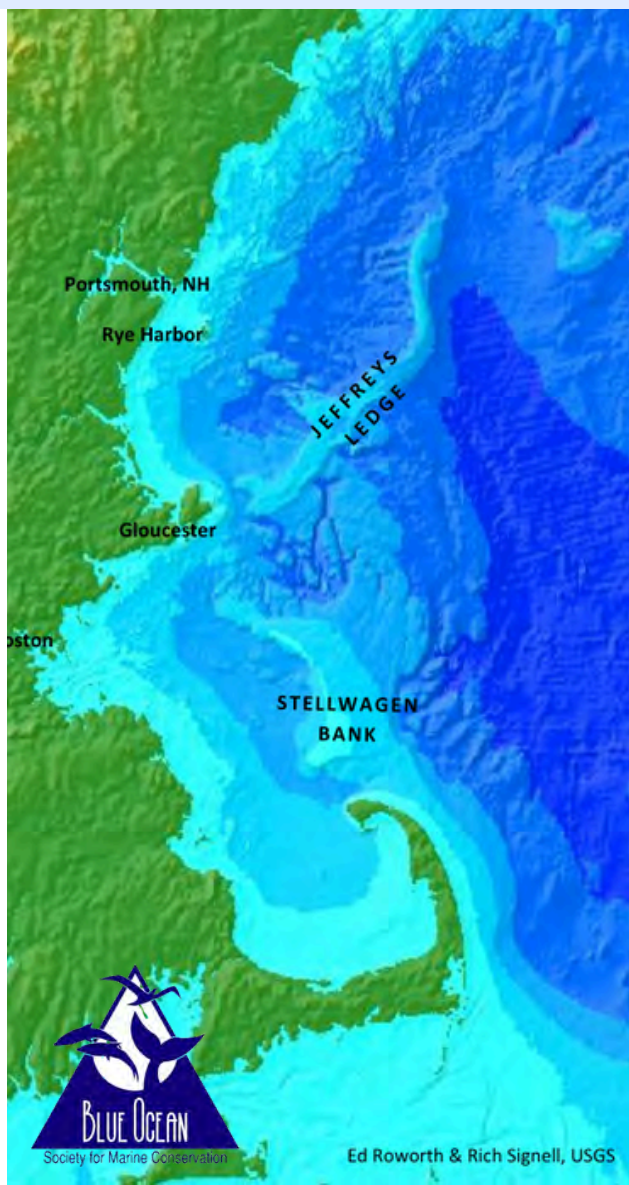
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Our Whale Research Program



The Gulf of Maine is warming faster than 99% of the rest of the ocean. Temperature changes can shift the distribution of whales and their prey. That can make whales vulnerable to human activities. It is more important now than ever to document what's happening in our local waters.

The health of local whale populations reflects the health of the Gulf of Maine as a whole. We aim to study the behavior and distribution of whales and mitigate human impacts.

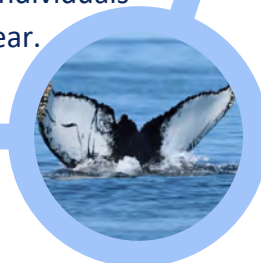
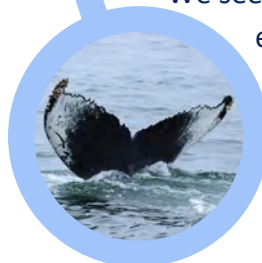


About 20 miles off the New Hampshire coast lies an underwater mountain range teeming with marine life. Blue Ocean Society is the only organization that consistently studies whales in this region known as Jeffreys Ledge.

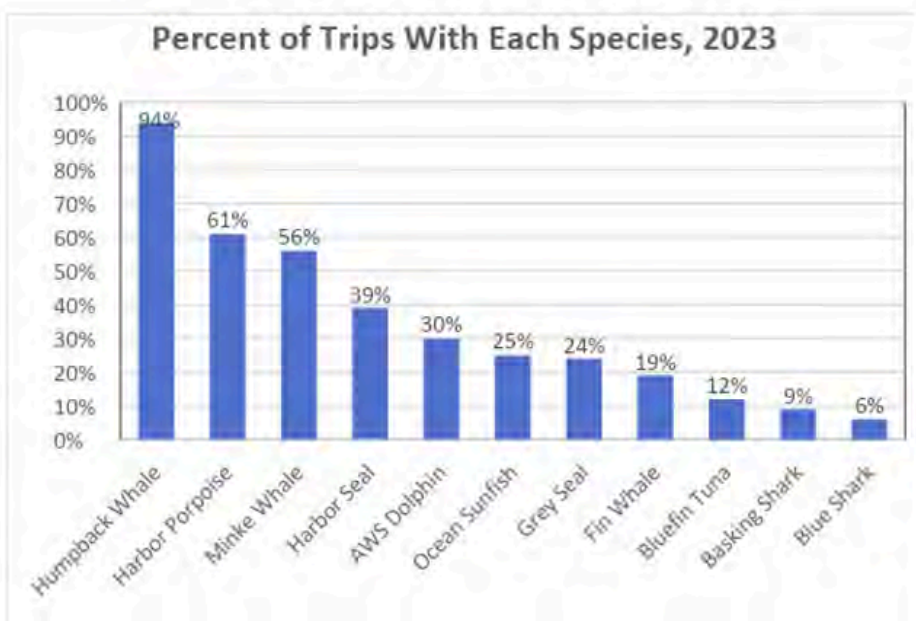
How do we study whales?



We tell whales apart by natural markings. For example, humpback whales each have a unique marking on the underside of their tail. We see some individuals every year.



What Species Were Seen Most Often?



We saw a minimum of 5,865 animals during the 2023 season. Humpback whales were seen most frequently, followed by harbor porpoises and minke whales.

Eleven species were documented including 3 species of baleen whales, 2 species of toothed whales, 2 species of sharks, 2 species of large fish (non-shark), and 2 species of pinnipeds.

We were the first organization to spot the well-known humpback whale Pinball and her new calf in Spring 2023! Unfortunately, Pinball was entangled in fishing gear later in the summer, but was freed of gear by the The Marine Animal Entanglement Response (MAER) team at Center for Coastal Studies (CCS)

The "Whale Pump"

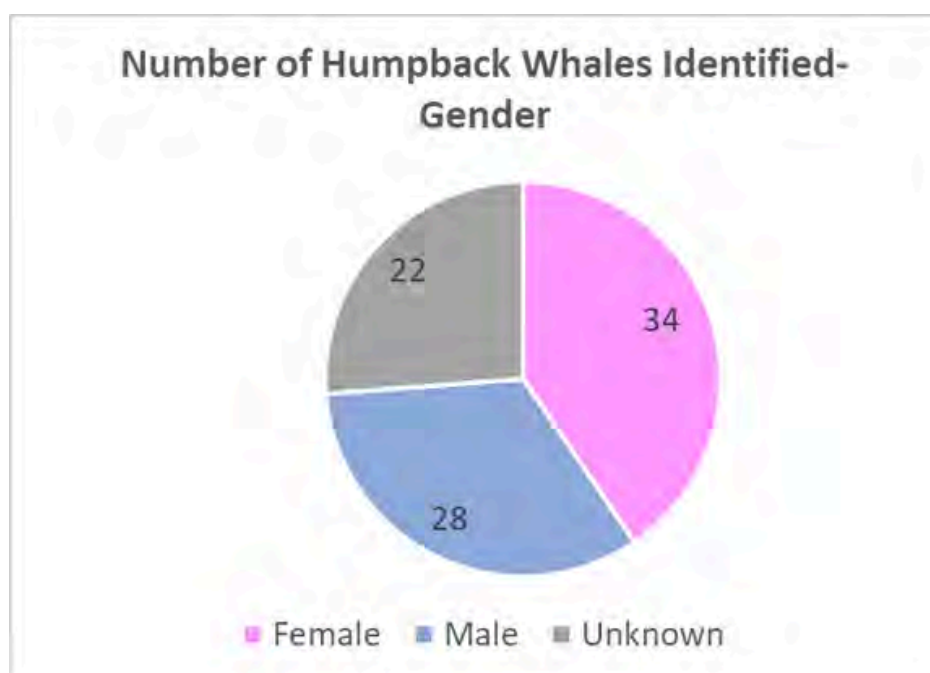
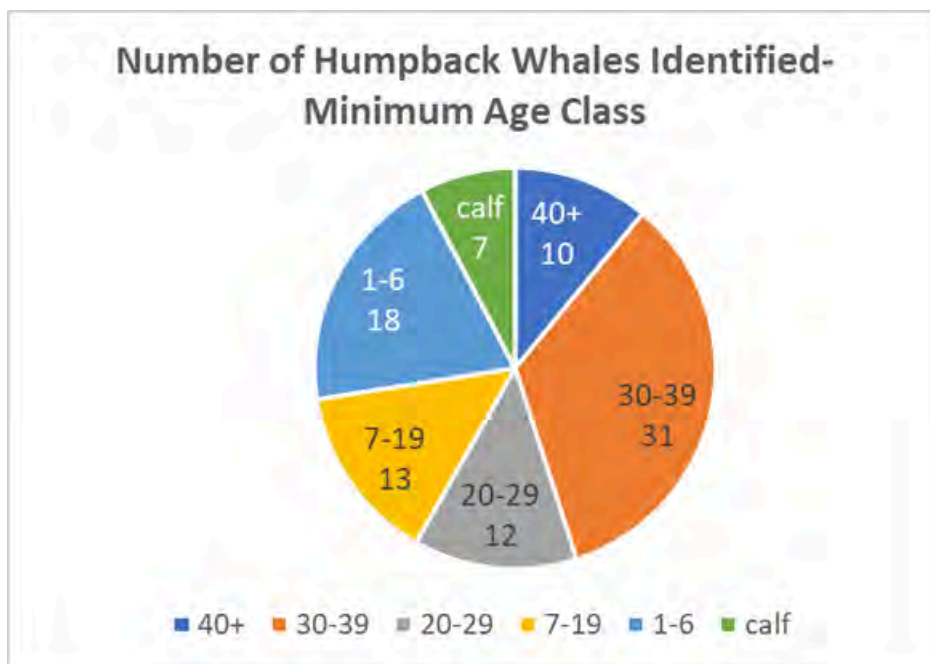
Did you know... healthy whales are critical to a healthy ocean! Whales recycle nutrients by eating and "fertilizing" surface waters with their poop.

This "whale pump" stimulates plankton growth. Plankton are a food source for other animals, and produce oxygen through photosynthesis.



Humpback Whales

We observed 91 individual humpback whales, including 7 calves. Of the whales with known age, the majority were adults (7+ years old). Ten of the whales were estimated to be 40 years old or more. More females were seen than males.



Data on age and gender provided by the Center for Coastal Studies

Human Impacts

One humpback whale showed evidence of a recent ship strike. Woodwind was observed on September 5, 2023, with fresh cuts on its left fluke tip indicative of a propeller cut (below). This sighting was the first and only time we had seen Woodwind on Jeffreys Ledge in our history.



Woodwind (foreground) with propeller cuts on its left fluke tip



Patricia Alvarado Núñez

Unfortunately, our adoptable whale Pinball was briefly entangled. Fortunately, a vigilant boater reported the incident, allowing the CCS MAER team to successfully free her. During the rescue, her calf stayed close, returning intermittently to nurse. We had observed them both the day before and after the entanglement, confirming that she was entangled for less than 24 hours, which was a relief.

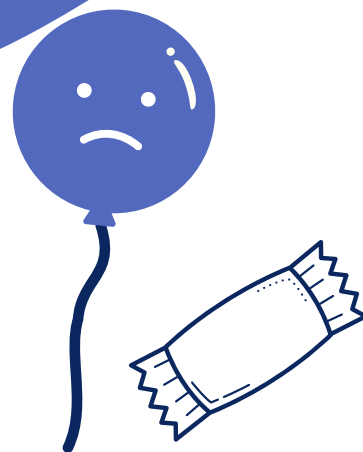
Other Human Interactions:

- Humpback whale Startrail was observed entangled in gear. The gear configuration was difficult to assess as the water was murky brown due to a heavy algal bloom that had persisted in the area since spring, but the CCS MAER team was able to respond and disentangle the whale. Startrail was seen a few weeks later with no signs of gear.
- Humpback whale Diablo was seen by a whale watch boat on southern Stellwagen Bank on August 12, 2023 with monofilament line trailing from her flukes. We spotted her on southern Jeffreys Ledge on August 11 and 13, 2023, with no line visible.
- Humpback whales Mogul and Quote were seen with new entanglement injuries, but we do not know where or when they were entangled.
- **Four of the seven humpback whale calves we spotted in 2023 already had injuries indicative of an entanglement.**
- We documented a healed injury (possibly from a boat collision in 2022) on the humpback whale Valley.

Marine Debris at Sea

Throughout each trip, we recorded sightings of marine debris. The debris was retrieved when practical.

On 155 trips, we documented 924 pieces of marine debris, nearly double the number of pieces we spotted last year. One hundred and twenty-five pieces (13.5%) were located near whales. We use data on litter at sea, combined with our other litter studies, in our educational programs and to develop solutions.



Balloons and wrappers were the top two litter items found on the water

Expanding Our Research

The Gulf of Maine is warming faster than 99% of the rest of our Earth's waters. Our ocean is changing quickly and marine mammals are having to adapt faster than evolution can keep up. It is up to us to protect these animals from the habitat destruction that we have caused over the past 150 years.

Knowing when and where these animals will appear has been a challenge over the past decade, making management protections difficult at best. We need a better understanding of the annual movements and habitat usage of whales. Thus, we have been expanding our research in recent years:

- We continued working on an app that will allow recreational and commercial boaters/fish harvesters to report whale sightings. Learn more at blueoceansociety.org/boss
- We chartered local vessels for survey cruises to document whales in the spring. A number of whales we spotted in 2023 were ONLY spotted on these survey cruises, pointing to a need to do more of these cruises in coming years.
- We partnered with other naturalists and scientists via the North Atlantic Whale Watch Naturalist Association and shared data with other organizations.



Want to Help Whales?

- Watch out for whales at all times when boating. In recent years, whales have been seen in the Merrimack River, Piscataqua River, and within 3 miles of local beaches.
- Retrieve fishing lines from the water when whales are near. Recycle used fishing line and spools in one of our shoreside recycling bins.
- Report whale sightings! Contact us for more information.
- Support our research! Donate boat time, give financially, adopt a whale, or sponsor an intern.

Thank You

We are grateful to Granite State Whale Watch, the Seacoast Lady, our research affiliates and staff naturalists, our 2023 whale research interns Hannah Brown, Julia Collum, Graham Piercey, Avery Settele, and Hannah Stairs.

Thanks also to the Center for Coastal Studies for assistance with identifications and demographics.





**Our mission is to protect marine life in the
Gulf of Maine through research, education
and inspiring action.**

Join us for a beach cleanup, whale watch, or
educational program, and visit our Blue Ocean
Discovery Center!

To learn more, visit us online or connect with us on
social media!

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