



# **2022**

## **WHALE RESEARCH**

### **SUMMARY**

165 Surveys

6,949 Animals

16 Different Species

7 Injured Whales



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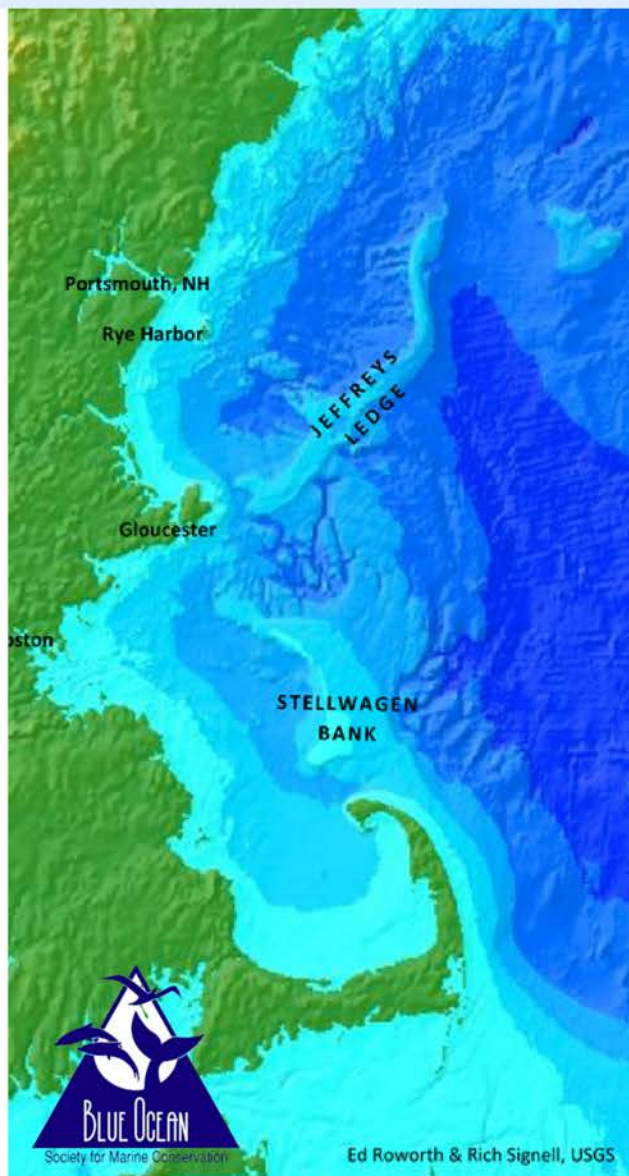


## Our Whale Research Program



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 can reflect 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?

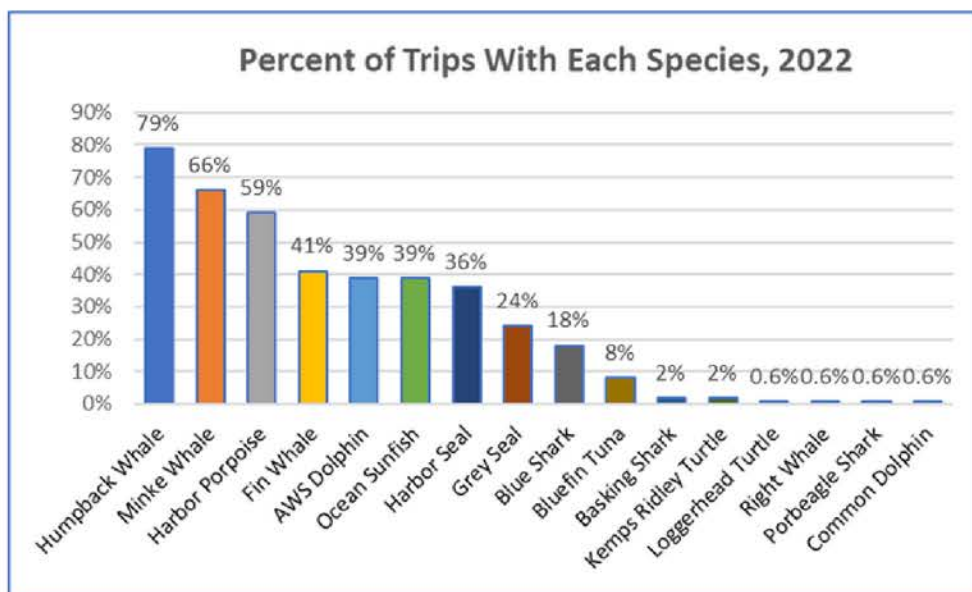


We tell whales apart by natural markings. For example, humpback whales each have a unique marking on the underside of their tail. We see some individuals every year.





## What Species Were Seen Most Often?



We saw 6,949 animals during the 2022 season. Humpback whales were seen most frequently, followed by minke whales and harbor porpoises.

While fin whales were only seen 41% of the time, this was a large increase from the previous year, when they were spotted on only 13% of the trips.



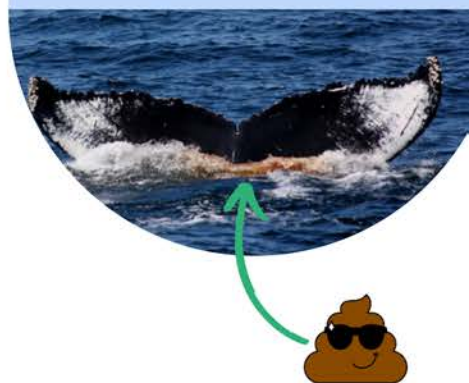
### An Easter Discovery

Our research team headed out of Seabrook, NH on Easter Sunday, 2022 in search of whales. During our trip, we spotted 4 North Atlantic right whales, two of whom had not been seen on Jeffreys Ledge previously. Perhaps they had been there in the spring before but never spotted due to the lack of survey effort at that time of year. Two of the whales were teenagers, while the other two were over 40 years old. We're planning to do more spring surveys in the coming years to fill sightings gaps!

## 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.

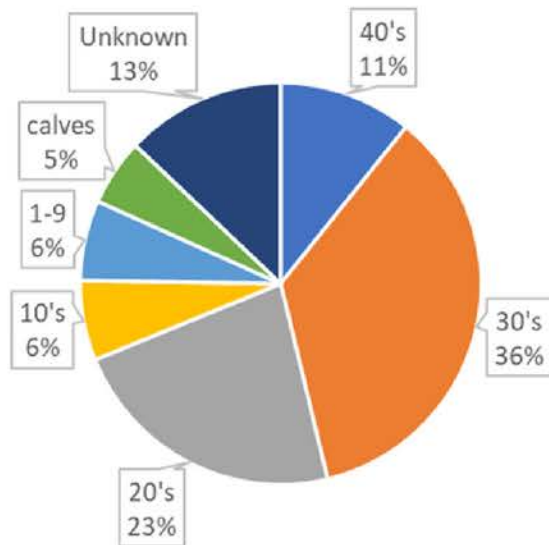
This "whale pump" stimulates plankton growth. Plankton are a food source for other animals, and produce oxygen through photosynthesis.



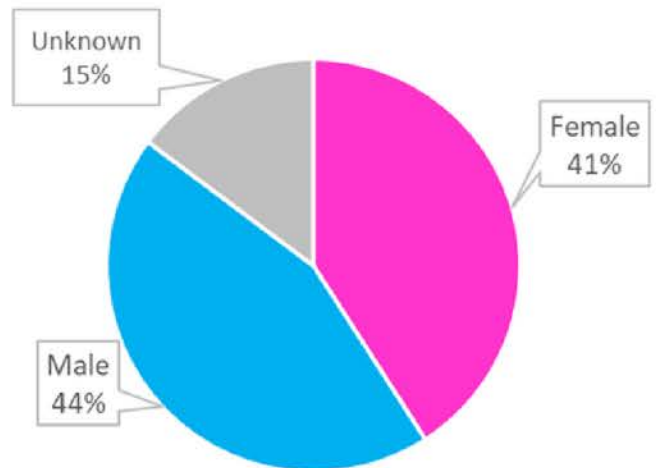
# Humpback Whales

We observed 88 humpback whales, plus 5 calves. Of the whales with known age, the majority were adults (7+ years old). More males were seen than females.

Humpback Whale Age Class, 2022



Humpback Whale Gender, 2022



## The Power of Photo-Identification

Satula is a male humpback that we see nearly every year. In 2021, we spotted him with a new wound on his back. We don't know what caused this injury, but it may have been due to blunt force trauma (boat collision).

A fellow naturalist also photographed Satula off Brier Island, Nova Scotia. We wondered what would happen to him over the winter. But in June 2022, we saw Satula again; his wound appeared to be healing!

Photo records from year to year allow us to assess whale health and learn more about the risk of injury.



Satula with an open wound on August 29, 2021, near Brier Island, Nova Scotia (photo credit Shelley Loneragan)



Satula's wound healing, June 12, 2022



## Human Impacts

We saw several whales with new injuries:

- One minke whale and two humpback whales were entangled in heavy line
- One humpback whale was observed with monofilament line trailing
- Three humpbacks exhibited injuries from unknown causes.



Clamp, a female humpback whale, was observed with monofilament fishing line draped over her fluke on September 04, 2022. She appeared free of this line when she was re-sighted five days later.



Minke whale with light-colored rope wrapping near blowholes, and with a knot of green rope on its left side.

Unfortunately, the whale disappeared before it could be disentangled by the Marine Animal Entanglement Response Team at Center for Coastal Studies.

## Marine Debris at Sea

Throughout each trip, we recorded sightings of marine debris. The debris was retrieved when practical. Litter items seen within 30m of a whale were noted.

in 165 trips, we documented 512 pieces of marine debris. Sixty-three pieces (12%) 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 2 items found on the water

# Expanding Our Range to Keep Up with Climate Change

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.

Humpback whales have been observed closer to shore. North Atlantic right whales, a critically endangered species, have significantly shifted their traditional habitats in recent years. It is up to us to protect them 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. The majority of whale research is conducted from whale-watching boats between May and October, yet we know from anecdotal information and remote sensors that whales are in the area year-round. Whales may also be further offshore than we can go on a whale watch. In 2022, we expanded our sightings network in three significant ways:

- We pilot-tested an app that will allow recreational and commercial boaters/fish harvesters to report whale sightings. We will further develop this app in 2023 so that we can better collect data on whales in our region.
- We chartered local vessels for survey cruises, getting on the water earlier in the spring than ever before. We will expand these survey cruises in the coming years.
- With colleagues, we formed the North Atlantic Whale Watch Naturalist Association, which facilitates regular information-sharing between whale watch naturalists from Canada to the Caribbean. Through this network, we were able to learn more quickly about the health status and locations of some of our regularly-sighted whales when they were in other areas.








## **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 2022 interns Ana Fernandes Costa, Kayla Kennicker, Jill Mapley and Hope Sandlin.

Thanks also to the Center for Coastal Studies and Anderson Cabot Center for Ocean Life at the New England Aquarium 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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