

# NOAA Right Whale Conservation



It's not a wrong whale!

# How can NOAA save the North Atlantic Right Whale?

**NOAA** has pushed through new regulations, but the population continues shrinking

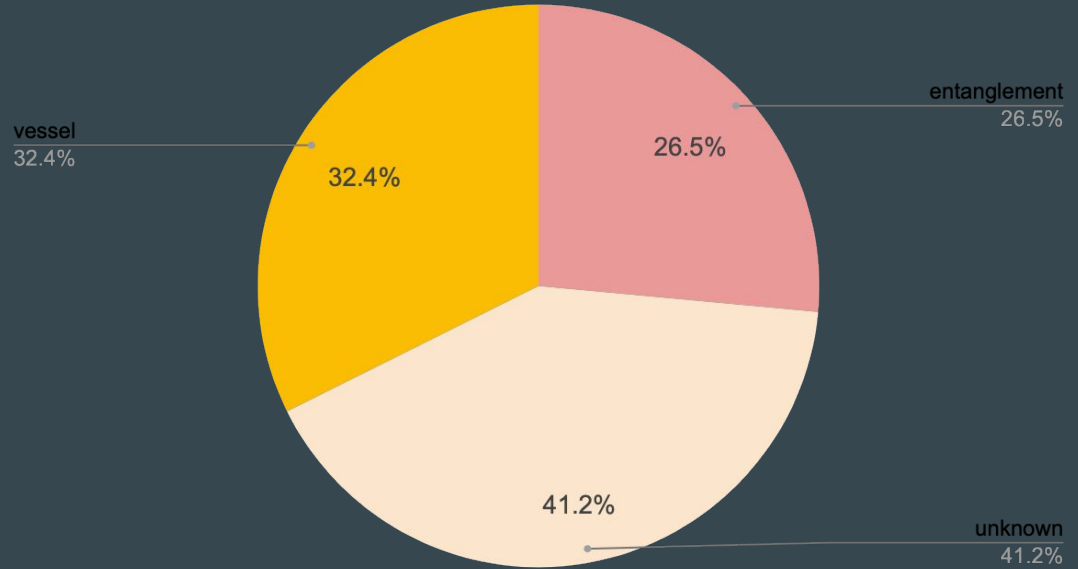
- grows 50ft in length
- Prefers shallow bays
- <400 left in the world

# Problem

In the last 4 years, 10% of the population (34 whales) have been killed

**NOAA** must protect the Right Whales from Vessel Strikes (among other things)

## Recent Causes of Whale Death

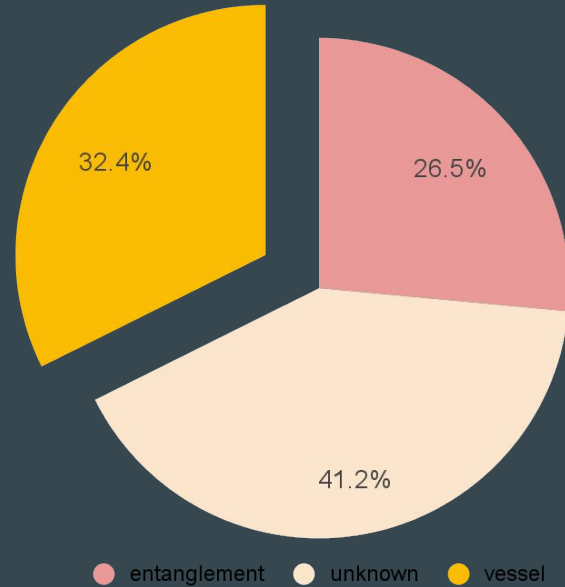


# NOAA Vision

NOAA works with  
shipping companies  
decrease vessel strikes  
to 1 a year

Whale population  
increases

Recent Causes of Whale Death



# Why are there so many vessel strikes?

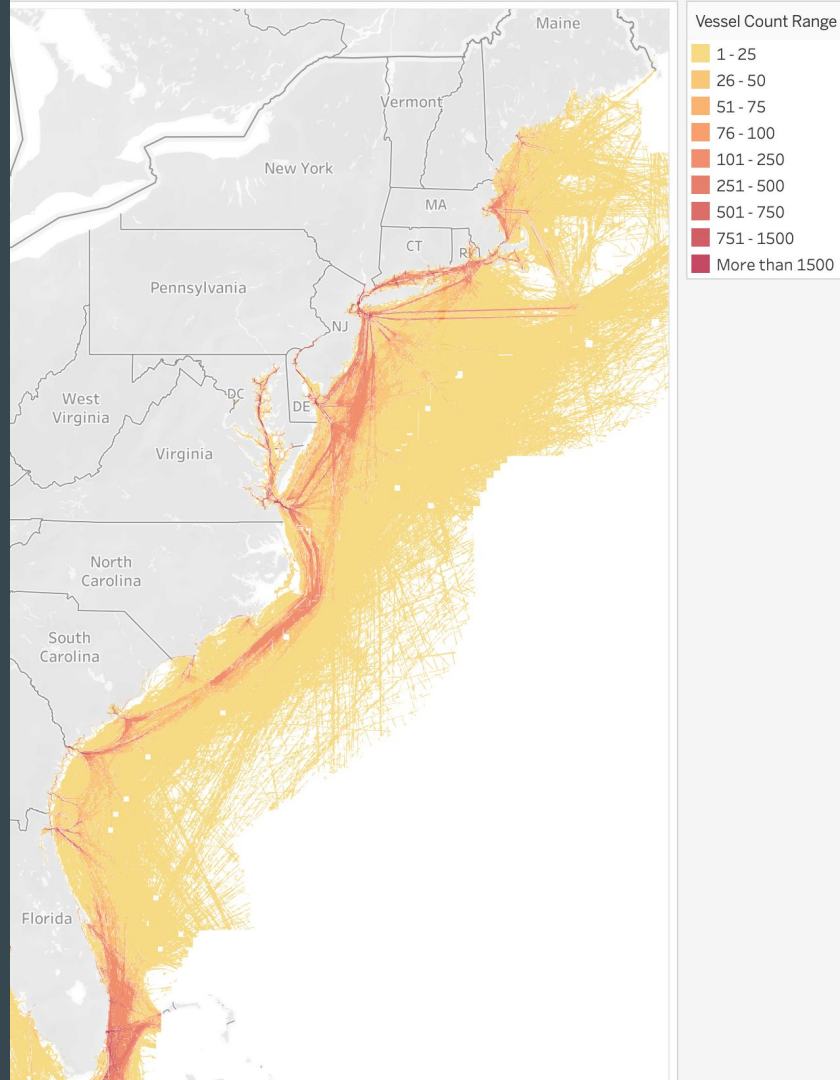
Largest Ports in United States:

Los Angeles

New York and New Jersey

Georgia ports

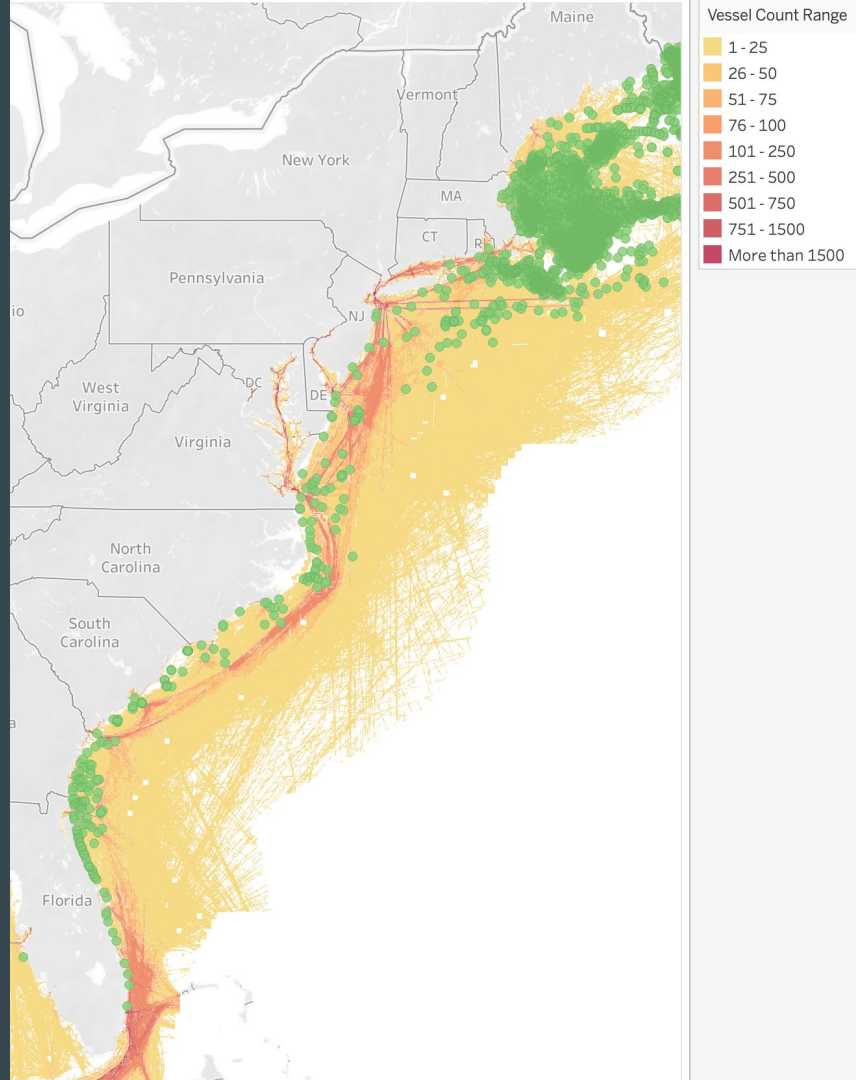
Houston



# Why are there so many vessel strikes?

Ships see each other using radar and AIS beacons.

The whales problem is that they don't have one of those.



# The Opportunity

Each ship carries:

an AIS beacon, which is a live connection to the shore

An electronic chart, with alerting capabilities



We can act as the whales radar, and send a ship an alert based on their live environment

# Hypothesis

NOAA can decrease whale deaths by alerting ships when a whale is likely to be in their vicinity



# Classification Model

Using historic locations

&

Current Temperature data from  
Buoys

&

Recent sightings

=

Is there a whale?



# Historical whale movement

Whale patterns stay the  
same year after year

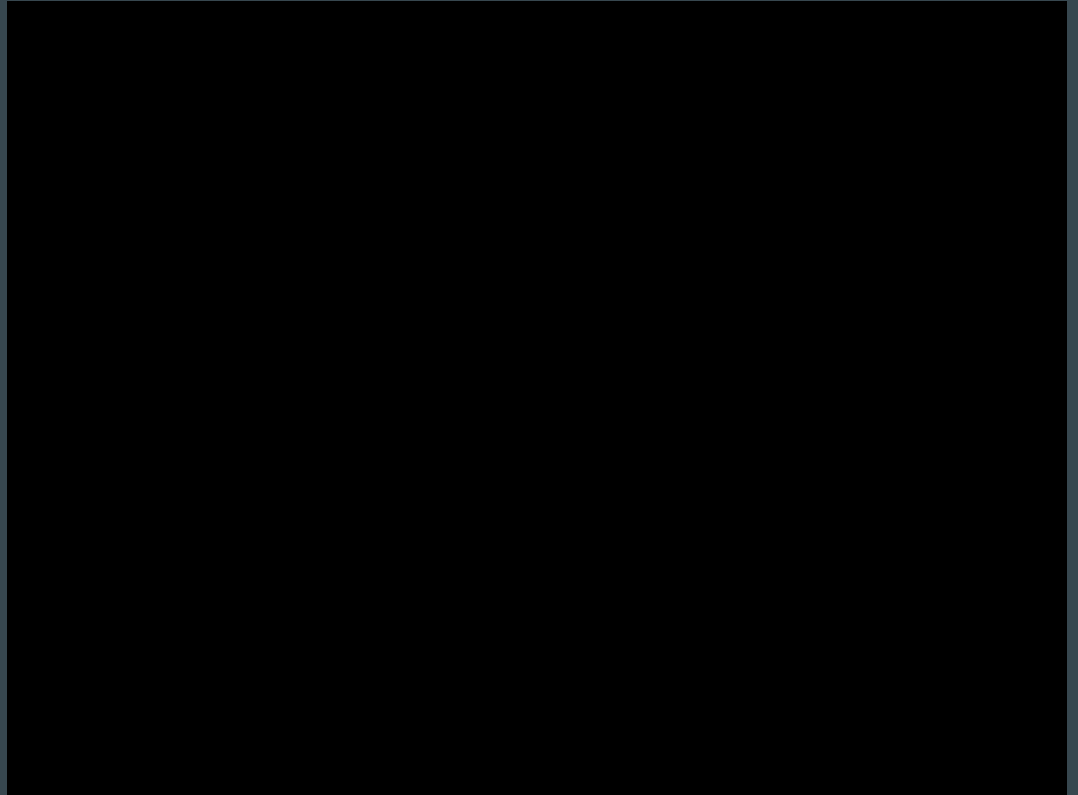


# Whales and Food

Whales eat zooplankton

Zooplankton are affected by temps, salinity

Live into on temps and salinity available  
from buoys



# Place a higher risk on calving temps

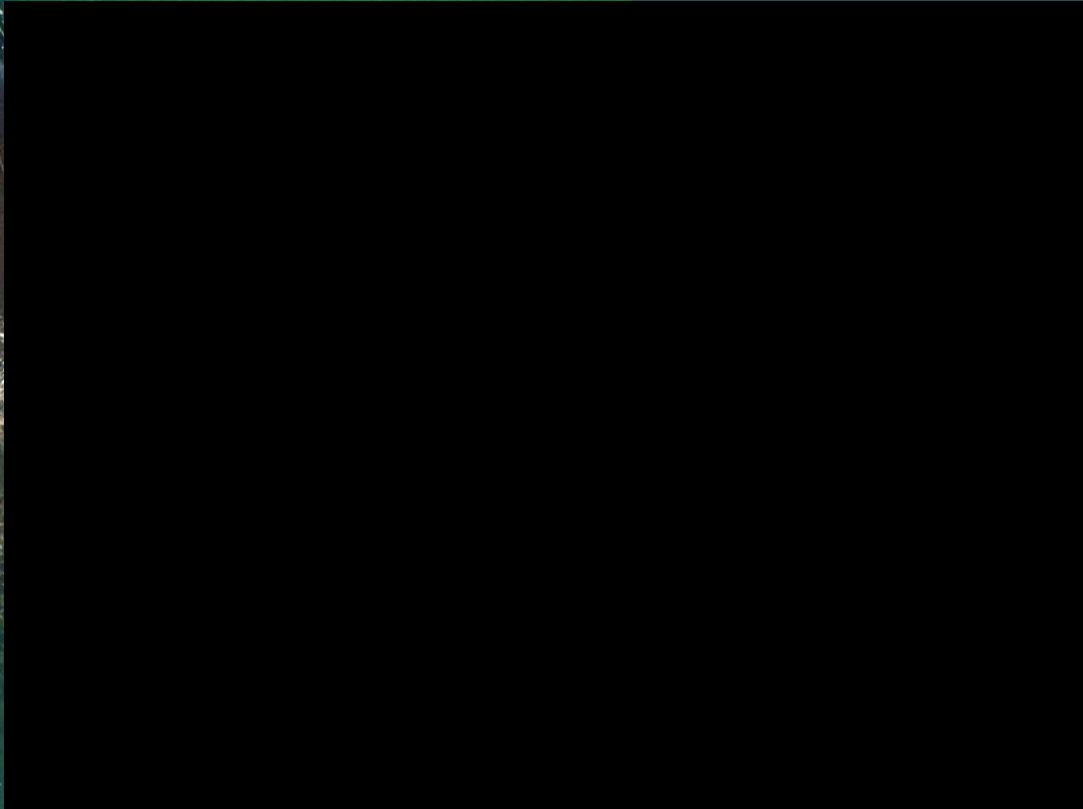
Whales calve between  
55 and 60 degrees

+

Few Locations

=

We can find the whales



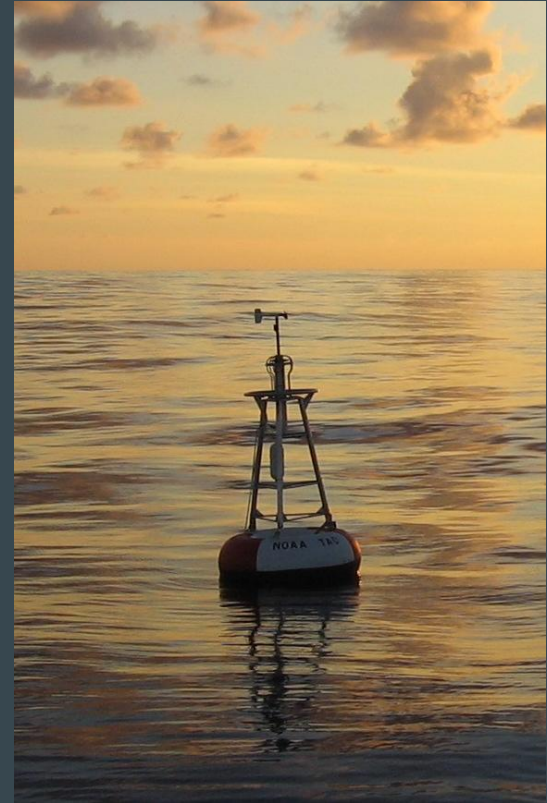
# How to We Push this Info to Ships and Future Path

## We build an app

Because ships already have beacon alerts and electronic chart plotters, no additional equipment is needed

## The Future

Research on identifying whale sounds from small sensors is readying production. Mounting these on buoys and ships will provide data without human intervention



**Lets Save Some Whales!**

