

# Sea turtle strandings in the New York Bight and Long Island Sound From 2017-2022

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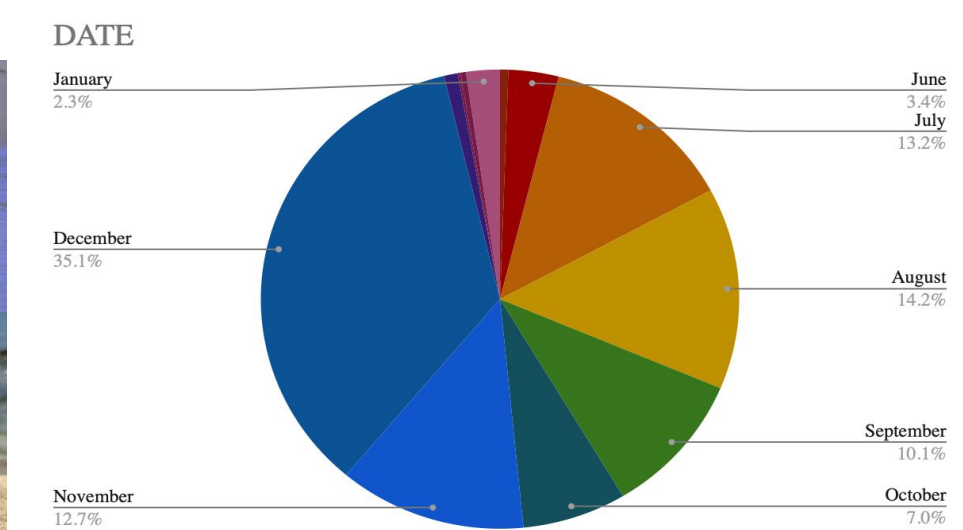
## Introduction

- The Sea turtles in our studies are:
  - Leatherback sea turtle (*D.corriacea*)
  - Kemp's ridley sea turtle (*L.kempii*)
  - Loggerhead sea turtle (*C.caretta*)
  - Green sea turtle (*C. mydas*)
- These sea turtles provide valuable services for ecosystems from Nova Scotia to Nicaragua.
- Sea turtles migrate to New York before every summer, and leave before every winter, however some get stuck and receive "cold shock" or which will endanger the turtle's life.
- Although cold stunning is common, the most common ways for turtles to be endangered is through human interaction

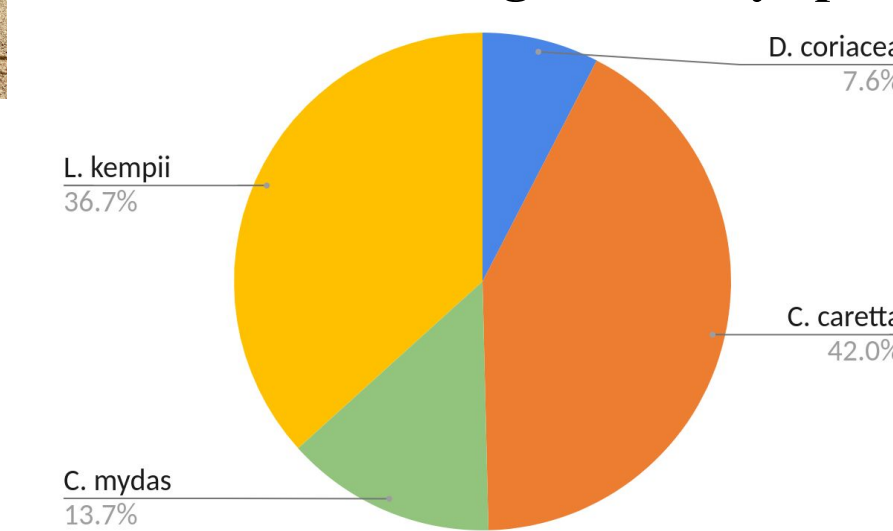


## Results

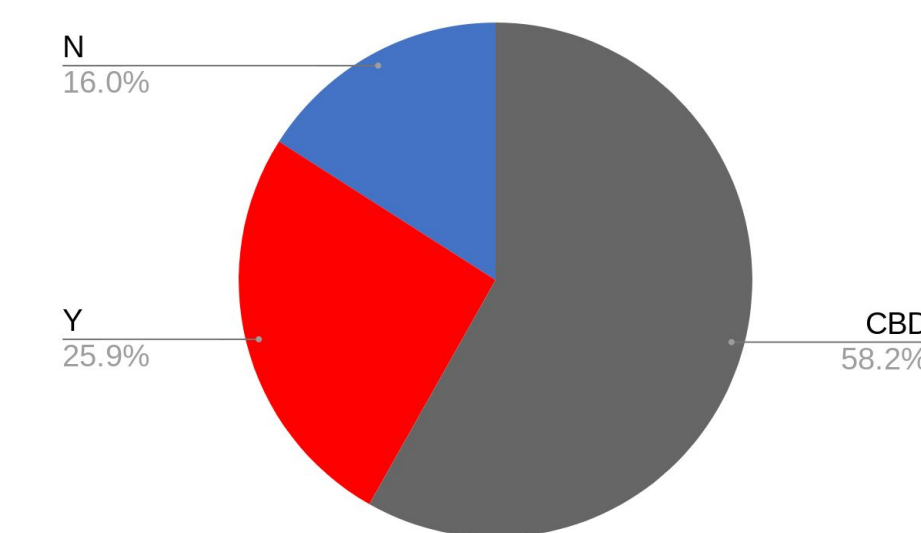
Sea Turtle Strandings by Month from 2017-2022



Sea turtle strandings in NY by species



Strandings determined to be due to human interaction



- The first pie chart shows the numbers of turtles that are stranded in different months. We observed that there is a large percentage of turtles that are stranded in November and December.
- The second chart shows the percentage of total strandings by species. The *C. caretta* (Loggerhead Sea Turtle) and *L. Kempii* (Kemp's Ridley Sea Turtle) have a significantly higher volume of strandings than the *D. Coriacea* (Leatherback turtle) and the *C. Mydas* (Green Sea Turtle)
- The final chart portrays the percentage of sea turtles stranded that were found to be because of human interaction. Although many could not be determined, there is still a larger amount of turtles that were affected through human interaction rather than other causes.

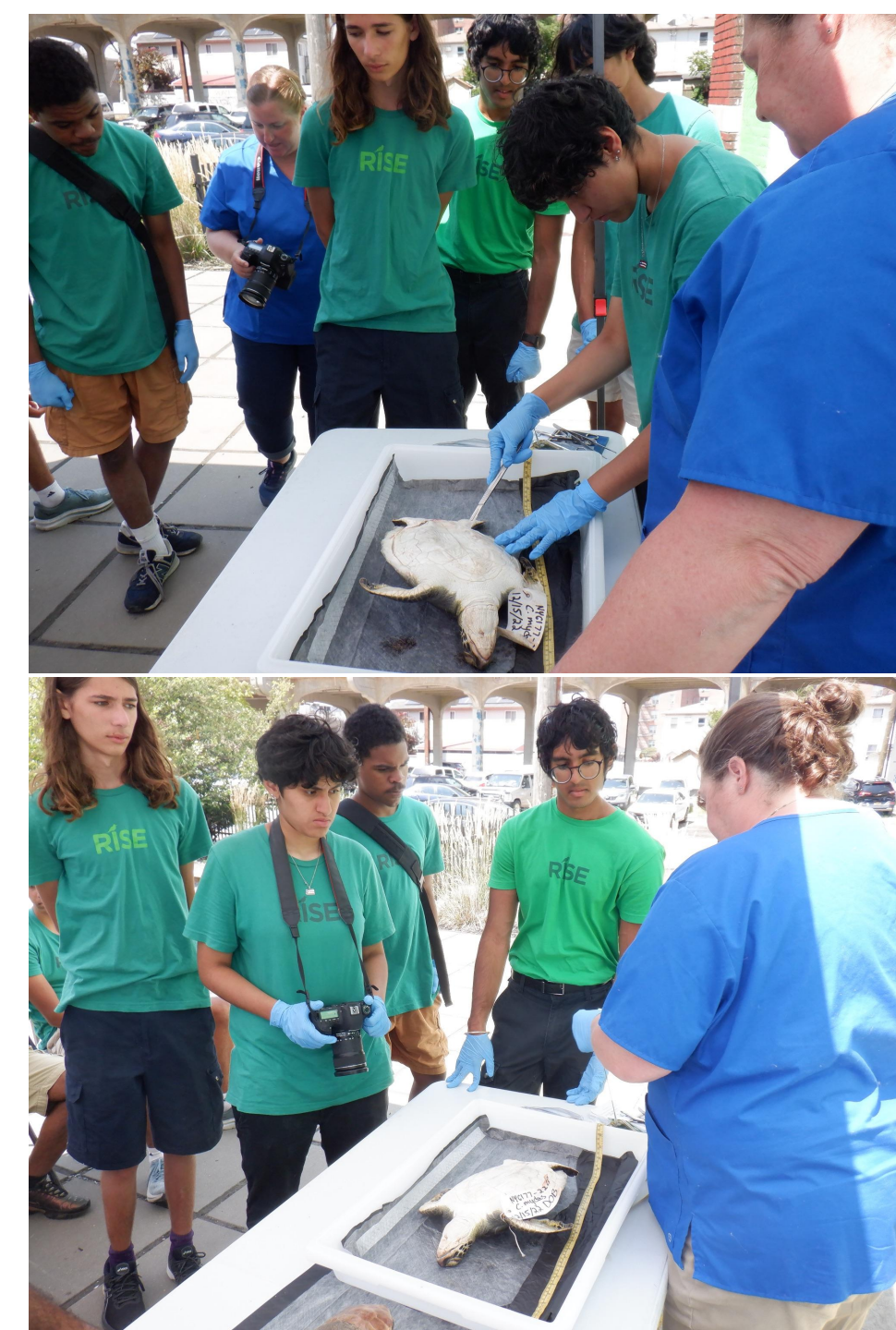
## Conclusion

November and December are the months with the most amounts of strandings, this is most likely due to cold stunning, even if the cause of death was not directly related to the condition. This is because early symptoms of cold stunning would make a turtle more susceptible to predation, disease or human interaction. Months from February to may have no reported strandings because no turtles migrate back into New York, and the ones who got stuck in the cold waters have died.

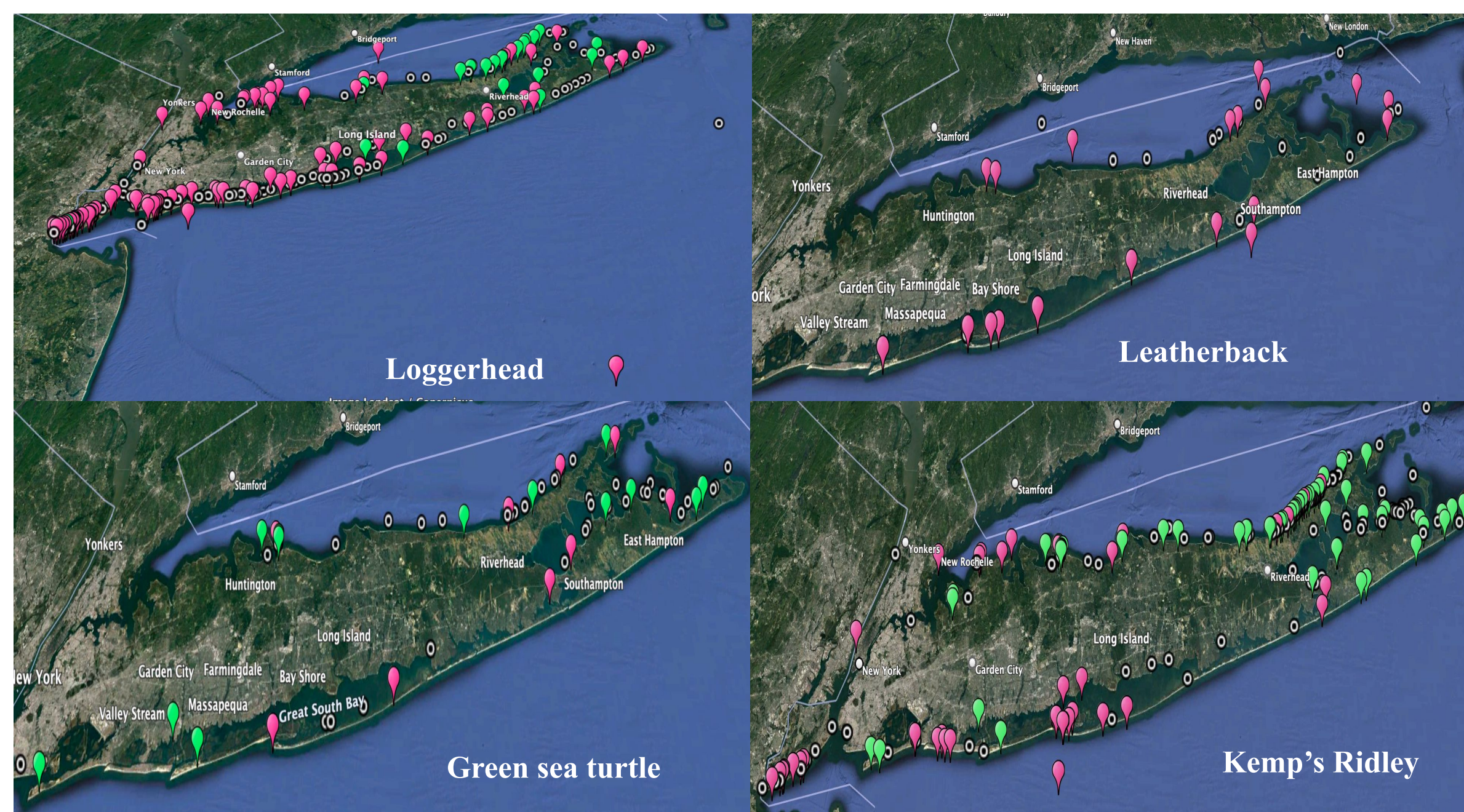
Our plotting of the data revealed stranding hotspots in Staten Island, New Jersey, and Riverhead. However most strandings caused by human interaction were found in Staten Island and the general city area while natural deaths are found in the east of Long Island. This is most likely due to the increased amount of boat traffic in these areas. The loggerhead sea turtle was the most affected by human interaction, we can also see that loggerheads have the most amount of strandings in the city area.

## Methodology

Data was acquired by the AMSEAS (Atlantic Marine Conservation Society) nonprofit which responds to calls on marine animal strandings at the beaches of New York State. The AMSEAS team collects level A data (Surface level measurements and observations) and conducts necropsies on-site. Sometimes if a carcass is fresh or there are limited resources and help available, the team would take the carcass back to their office to perform a necropsy or freeze it to conduct a necropsy later. Data concluded from necropsies includes cause of death, overall health, and evidence of prior human interaction. All this information was compiled by us into charts, graphs and maps for better visualization



Maps of sea turtle strandings by species and human interaction



KEY

- Evidence of human interaction
- No evidence of human interaction
- Could not be determined

## Sources & acknowledgements

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- Plumer, Brad. "This Is an Incredible Visualization of the World's Shipping Routes." Vox, April 25, 2016. <https://www.vox.com/2016/4/25/11503152/shipping-routes-map>
- Shoutout to Alli and the AMSEAS team for providing their valuable knowledge and data as well as holding a turtle necropsy at the rise building!
- A huge thank you to Marvin Lopez for helping guide us through our research