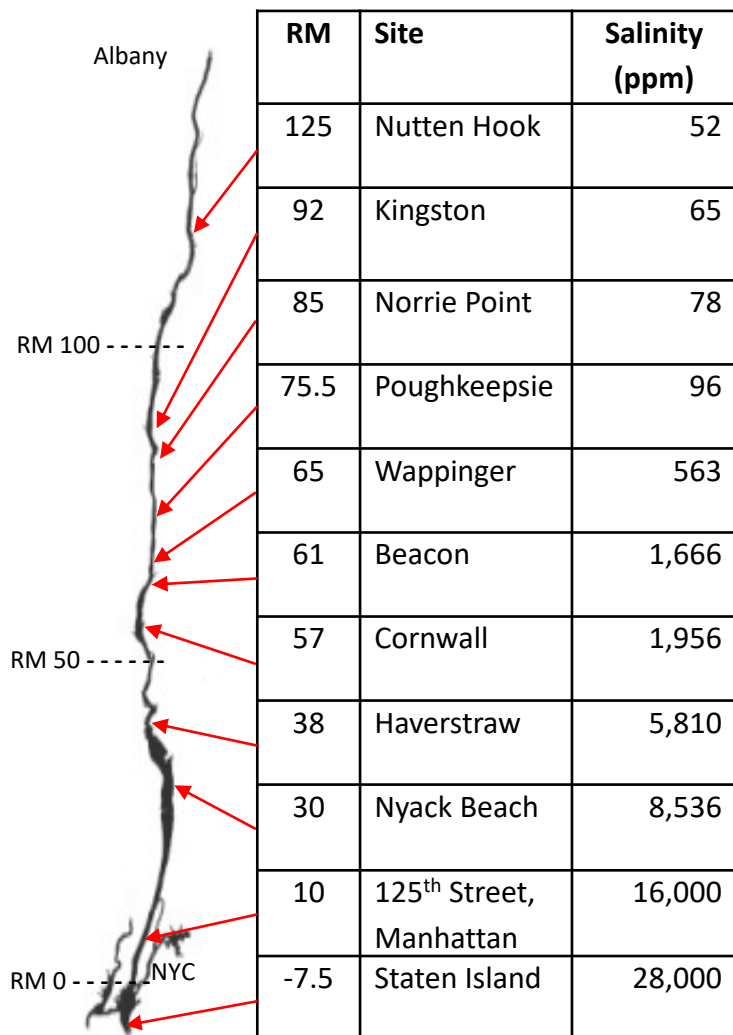


A Day in the Life of the Hudson and Harbor 2022: Salinity

Salinity Data 2022

Salinity can be reported in many different units. Here the units are **parts per million (ppm)** (a ratio of salt per one million parts of water) to compare results from sites far apart on the estuary. In saltier areas, like New York City, salinity is usually measured in **parts per thousand (ppt)**. **River miles (RM)** are measured north from the Battery in NYC.



Where was the salt front on October 13, 2022?

The **salt front** (the leading edge of dilute sea water) in the Hudson River is located where salinity reaches 100 ppm.

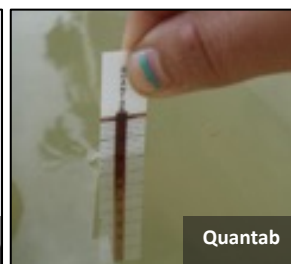
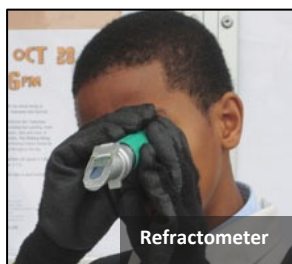
The salt front is where the river water becomes completely fresh, as opposed to salty or **brackish** (a mixture of salt and fresh water).

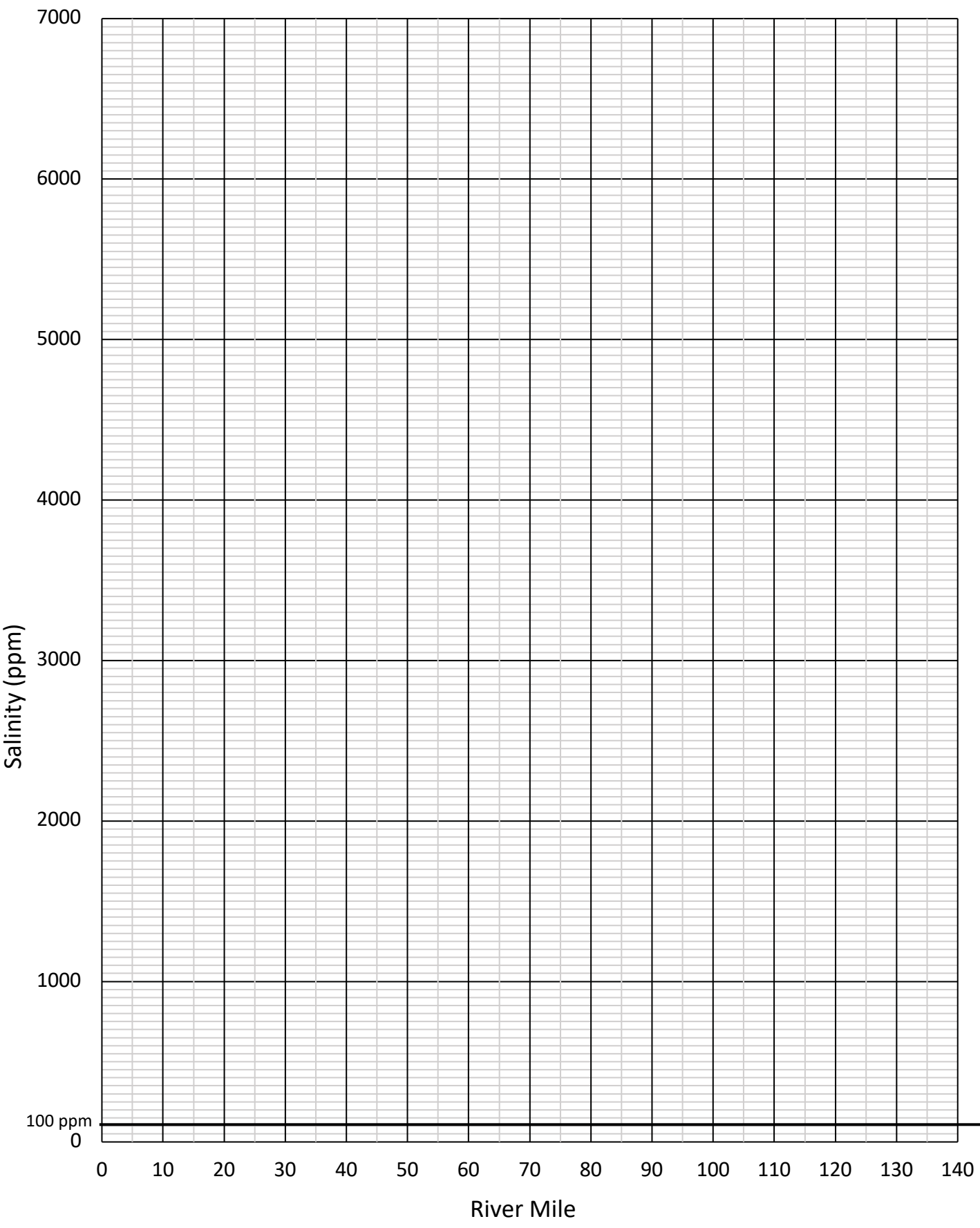
Use a pencil to plot salinity readings for 2022 (found in the table to the left) on the graph on the next page.

- Place a point for salinity readings from **Kingston through Haverstraw** directly above the listed river mile.
- Using a ruler, draw a line from one point to the next. Start at the point for the lowest river mile and continue to the highest.
- Using your graph plot and the horizontal line at 100 ppm, estimate (in river miles) the position of the salt front on October 13.

River Mile _____

People use different tools to measure salinity. Hydrometers and refractometers are best used in saltier water, while quantabs are best for fresh and slightly salty water.





20 Years of Day in the Life Salinity Data!

Hudson River Salt Front Locations



The salt front changes locations annually because of different environmental conditions.

- a. In what year shown did the salt front reach the farthest north? Why might this be? Hint: How might weather affect salinity?

- a. In what year shown was the salt front the farthest south? What conditions would cause this?

Bonus Questions:

What else might change year to year with the salinity?

Would you predict higher or lower turbidity in years when the salt front is farther downriver? Why?