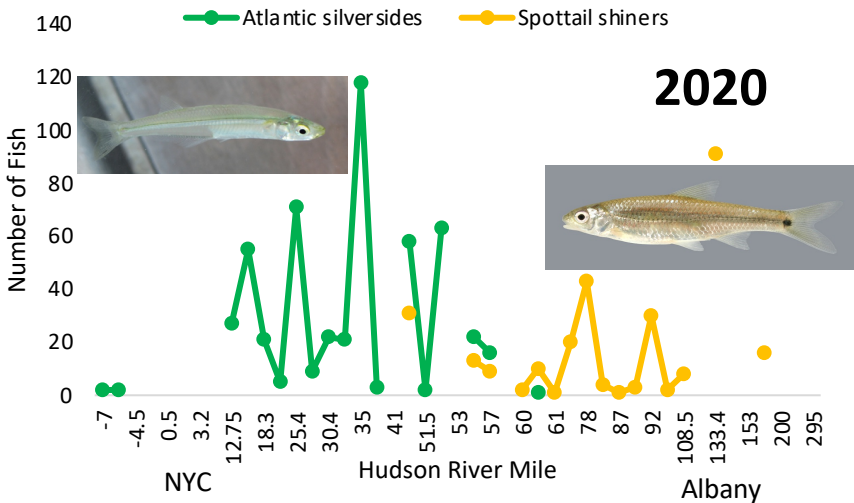


A Day in the Life of the Hudson and Harbor 2020: Fishing

Teacher Version

Just as Atlantic silversides are found in salty water up to the salt front, spottail shiners are found in freshwater down to the salt front (100 ppm Cl). You can use where the ranges of those two species of fish meet to predict the location of the salt front.



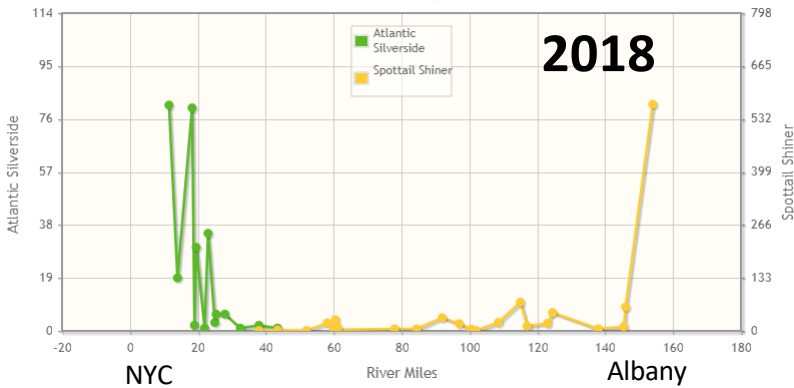
Data on distributions of Atlantic silversides and spottail shiners from 2020's Day in the Life of the Hudson and Harbor are shown in the graph to the left. What Hudson River Mile (starting at lower Manhattan) do you estimate the salt front was located on October 22nd?

2020 salt front (100 ppm Cl):

River Mile _____

This year the salt front was around RM 74. With less sampling sites, it was harder to pinpoint an exact location. There was also significant overlap between Atlantic silversides and spottail shiners in 2020.

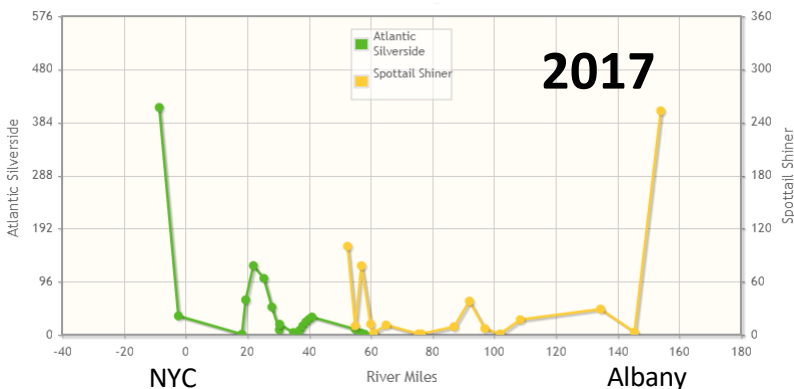
Below are graphs from 2018 and 2017 also showing where Atlantic silversides and spottail shiners were caught. Where do you predict the salt front was in those years?



2018 salt front (100 ppm Cl):

River Mile 25

Students will likely predict higher based on the graph, but you can discuss with them that the fish and salinity data may not match up quite perfectly, but rather gives you a general sense of the location of the salt front.



2017 salt front (100 ppm Cl):

River Mile 70

Again, the location of the salt front is not EXACTLY where the fish catches match up, but it is close. Here the spottails were found a little below the salt front, whereas in 2017 the silversides were found a little above the salt front.

What could cause the difference in the location of the salt front from year to year?

Precipitation amount is a key factor in the location of the salt front. This year and in 2017 there was less rain than in 2018, which had a rainy summer and fall and pushed the salt front downriver.