A Day in the Life of the Hudson River 2013: Salinity

Your site: ______If measured, your salinity on Oct 10:__



2013 was the eleventh year of A Day in the Life of the Hudson River. Thanks to all of the participants who made this year a success! Let's compare some of the data you collected with data from earlier years. Salinity Data Table RM 150 - - - - -Albany Salinity can be reported in many different units. Here the units are **parts per million** (**ppm**) of chloride (Cl⁻) to help 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. RM 2010 2012 2013 Site 2011 RM 100 -97 Ulster Landing 28 ppm 18 ppm 28 ppm 40 ppm 28 ppm 76 Poughkeepsie 28 ppm 32 ppm 32 ppm 57 Kowawese 29 ppm 26 ppm 96 ppm 447 ppm 41 Verplanck 1,610 ppm 55 ppm 55 ppm 3,212 ppm 25 **Piermont Pier** 488 ppm 1,250 ppm 4,428 ppm 5,136 ppm Pier 84 NYC 4 8,580 ppm 9,415 ppm 3,321 ppm 1,383 ppm **RM 50** Blue crabs can live in a wide range of salinities. Comb jellies (ctenophores) live in brackish to marine water. RM 0

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

a) In which of the four years shown in Table 1 did the salt front reach up to or past Verplanck?

b) Which sites were considered freshwater in 2013?

c) What might be a reason for the **differences** in salinity at all sites between 2013 and 2011? Hint: How might weather affect salinity?

2. Where was the salt front on October 10, 2013?

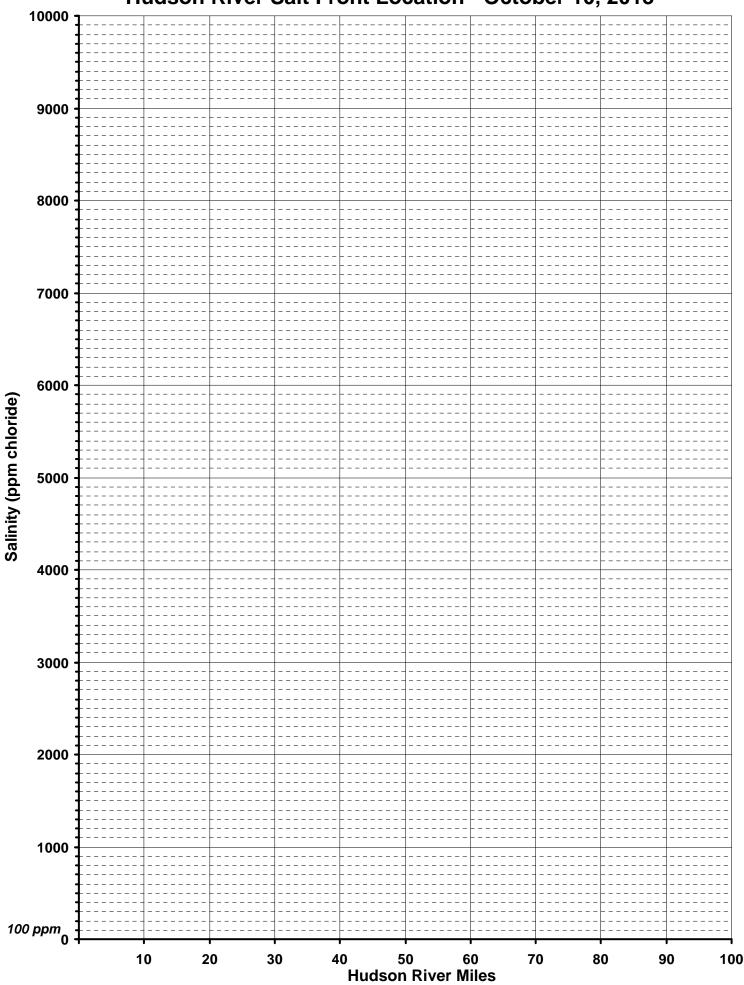
Use a pencil to plot salinity readings for 2013 (found in Table 1) on the graph below.

a) Place a point for all salinity readings directly above the listed river mile.

b) 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.

c) The salt front is located where salinity equals 100 ppm. Using your graph plot and the horizontal line at 100 ppm, estimate (in river miles) the position of the salt front on October 10.

River Mile _____



Hudson River Salt Front Location - October 10, 2013