

**Day in the Life of the Hudson River 10/10/13 Data  
(Salt Front RM 69.3)  
RIVER MILE 25W  
Piermont Pier**

**Margie Turrin & 5 Lamonters, Lamont-Doherty Earth Observatory  
Kathy Galione, Rockland County Americorps  
Latitude N 41 degrees 02'592 Longitude W 73 degrees 53'789**



**Tom Mullane, Eileen McCaffrey, and  
Catherine Bonanno– Pearl River HS  
APES – 18 students**



**Jen Mazza,– Clarkstown South High  
School –  
17 APES & IB Env. Sci.**



**Pat Kilkelly and Brian Newburger Tappan Zee HS –APES & Env. Sci. – 37 students  
Latitude 41°02.591N Longitude 073°53.794W**

**Location:** Piermont Pier, Piermont NY

**Area:** Man made fishing/shipping pier at the east end, long pier with paved roadway and vegetated strip along both sides

**Surrounding Land Use:** Urban/residential 80% , Forested 20%

**Sampling Site:** Pier, roadway in center of whole pier, parking area at end, Plants and trees along side. Shoreline Rip Rap, collected wood in area and piping entering river on the south of sampling site

**Plants in area:** no submerged aquatic plants in the water

**Water depth:** Varied by location on the pier and by tide

**River Bottom –** sandy/rocky bottom with marsh grass growing in or near the water

**Plants in area:** sumac and other plants 15%; phragmites 85%

<i>ITEM</i>	<i>Time</i>	<i>Temperature</i>	<i>Weather &amp; Observations</i>
<i>Physical</i>			
<b>Air Temperature</b>	9:10AM	14°C 57°F	

	9:35 AM	15.2°C	Water choppy!	
	9:50 AM	16°C	sprinkling	
	10:13 AM	15 °C	Water choppy	
	10:37 AM	15.5 °C	Water choppy	
	10:58 AM	16.25 °C	Water choppy	
	11:33 AM	16 °C	Water choppy	
	11:52 AM	16.25 °C	Water choppy	
	12:46 PM	18.5 °C	Water choppy	
	1:05 PM	18.5 °C	Water calmed a bit	
<b>Wind Speed</b>	<b>Time</b>	<b>Beaufort # &amp; Direction</b>	<b>Anenometer</b>	<b>Description</b>
	9:10AM	#2	6.5 kts. Or 13.7 mph	Cloudy, drizzle
	9:35 AM	#3	9.7 kts	Partly cloudy, drizzle
	9:50 AM	#3	7.7 kts. 8.9 mph	Cloudy, sprinkling
	10:13 AM	#3	7.7 kts 8.9 mph	North wind
	10:37 AM	#3	7.4 kts.	North wind, light rain
	10:58 AM	#3	7.8 kts 9.5 mph	Light rain
	11:33 AM		6.3 kts. 9.6 mph	overcast
	11:52 AM	#2-3	6.3 kts 8.0 mph	overcast
	12:46 AM	#2	6.2 kts. 7.1 mph	North wind,
	1:05PM	#2	5.5 kts 8.7 mph	North East wind, overcast
Weather recent	Some rain last few days, some wind			
<b><i>Water Temperature</i></b>	<b>Time</b>	<b>Surface Sample</b>		
	9:17 AM	16°C		
	9:30 AM	15.5°C		
	10:05 AM	14°C		
	10:15 AM	18°C		
	11:32 AM	15°C		
	12:45 PM	15°C		

	12:45 PM	16°C		
<b>Turbidity –</b>	<b>Time</b>	<b>3 readings</b>	<b>Average</b>	<b>Pier Northside</b>
<b>Long Site Tube</b>	9:20 AM	31.8 X3	31.8 cm	<b>Long site tube</b>
	10:01 AM	35	35 cm	
	10:36 AM	27.5	27.5 cm	
	11:00 AM	27	27 cm	
	11:23 AM	33	33 cm	
	11:38 AM	36.8	36.8 cm	
	12:45 PM	38.9	38.9	
<b>Secchi</b>	9:15 AM	25,25,25	25 cm	<b>Secchi</b>
	9:15 AM	40,40,40	40 cm	
	9:45 AM	35,35,40	37 cm	
	10:13AM	90,30,31	50.3 cm	
	10:36 AM	25, 40, 35	35 cm	
	11:00 AM	40	40 cm	
	11:23 AM	29,27,22	26 cm	
	11:38 AM	30,35,25	30 cm	
	12:45 PM	25, 30, 30	28.3 cm	
<b>Chlorophyll</b>	9:20AM	1.5		<b>Pier End</b>
	10:05 AM	2.0		
	11:00 AM	2.5		
	11:25 AM	1.0		
<b>Chemical</b>	<b>SURFACE SAMPLES * see HRECOS readings appended at the end of the student reporting</b>			
<b>DO</b>	<b>TIME</b>	<b>DO Reading</b>	<b>Water Temp</b>	<b>% Saturation</b>
<b>Drop count</b>	9:45 AM	7 ppm	15.5°C	68%
	10:20 AM	7 ppm	14°C	65%
	11:11 AM	10 ppm	18°C	102%
	11:34 AM	11 ppm	19°C	70%
	11:45 AM	7 ppm	15°C	68%
	1:07 PM	9 ppm	16°C	90%
<b>pH</b>	<b>TIME</b>			
<i>colorimeter</i>	9:17 AM	7.0		
	10:05 AM	7.0		
	11:08 AM	7.0		
	11:32 AM	8.0		
	11:40 AM	7.0		
	12:55 PM	8.0		
<b>Phosphates</b>	<b>TIME</b>			
<i>colorimeter</i>	9:25 AM	0.22 mg/L		
	11:40 AM	0.6 mg/L		
	12:45 PM	0.5 mg/L		

<b>Nitrates</b>	<b>TIME</b>			
<i>Drop count</i>	9:30 AM	0 mg/L		
	10:18 AM	0 mg/L		
	11:07 AM	0.1 mg/L		
<b>Alkalinity</b>	<b>TIME</b>			
<i>Drop count</i>	10:15 AM	82 ppm		
	10:54 AM	65 ppm		
	11:05 AM	60 ppm		
	12:50 PM	45 ppm		
<b>*Salinity -</b>	<b>Refracto.</b>	<b>Hydrometer Glass Hydrometer Plastic</b>	<b>Quantab ppm cl<sup>-</sup></b>	<b>*Quantabs ppm total sal</b>
9:30 AM	12 ppt	8 ppt 8 ppt	8.8 units - 5835 ppm cl <sup>-</sup>	<b>10541 ppm</b>
10:10 AM	10 ppt	17 ppt 16 ppt	8.6 units - 5133 ppm cl <sup>-</sup>	<b>9273 ppm</b>
11:00 AM	10 ppt	Not read 11 ppt	8.4 units - 4554 ppm cl <sup>-</sup>	<b>8227 ppm</b>
11:40 AM	Not read	16.2 ppt 15 ppt	<i>Not Read</i>	
12:50 PM	14 ppt	16.6 ppt 14 ppt	8.6 units - 5133 ppm cl <sup>-</sup>	<b>9273 ppm</b>
<b>Tides- Time</b>	<b>Total Depth</b>	<b>To Water Surface</b>	<b>Tide Depth</b>	<b>Ebb/Flood</b>
9:00 -1:00				Flooding
<b>Currents</b>	<b>CM/30 SEC</b>	<b>Cm per sec</b>	<b>Knots/hr</b>	<b>North/South Ebb/Flood/Still</b>
9:27 AM	159 cm	5.3cm/sec	0.1	Flood
10:02 AM	100	3.3 cm/sec	0.06	Flood
10:20 AM	0	0 cm/sec	0	Still
10:43 AM	720	24 cm/sec	0.47	Flood
11:12 AM	0	0 cm/sec		Still
11:34 PM	680	22.7 cm/sec	0.44	Flood
12:12 PM	690	23 cm/sec	0.45	Flood
12:53 PM	255	.45 cm/sec	0.67	Flood
<b>Fish Catch Northside of pier</b>	<b>Number Caught</b>	<b>Species</b>	<b>Measure of largest</b>	<b>TIME &amp; CATCH</b>
<b>Rotation #1</b>	7	Atlantic Silverside	9 cm	9:00 AM
	5	Striped Bass	14 cm	<b>Diversity 4</b>
	2	Bay Anchovy -yoy		<b>19 total</b>
	5	Baby Blue Crab	1.5cm	
	44*	Ctenophore Comb Jelly		<b>*Not in totals</b>
<b>Rotation #2</b>	1	Atlantic Silverside		9:40 AM

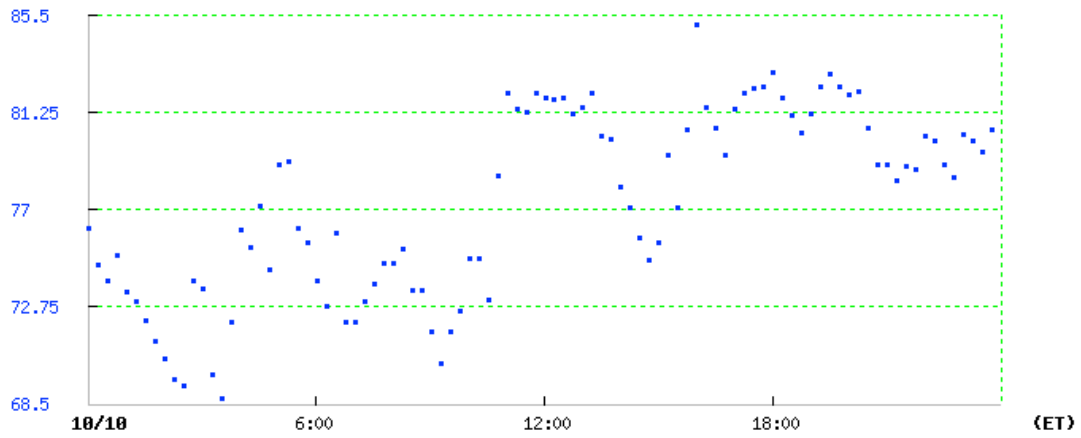
	3	Striped Bass	8 cm	<b>Diversity 3</b>	
	3	White Perch	21 cm	<b>7 total catch</b>	
	174*	Ctenophores			
<b>Rotation #3</b>	135*	Ctenophores		<i>10:30 AM</i>	
	2	Naked Goby from trap		<b>Diversity 1</b>	
				<b>2 Total catch</b>	
<b>Rotation #4</b>	1	Mummichog	10 cm	<i>11:30 PM</i>	
	2	Blue Crab		<b>Diversity 2</b>	
	63*	Ctenophores*		<b>3 Total Catch</b>	
<b>Rotation #5</b>	1	Atlantic Silverside		12:45 PM	
	3	Naked Goby		<b>Diversity 3</b>	
	2	Blue Crab		<b>6 Total Catch</b>	
	132*	Ctenophore			
<b>Grand Total</b>	<b>Count 37</b>	<b>w/o ctenophores</b>	<b>548 Total Ctenophores</b>	<b>Diversity 7 + ctenophores</b>	
<b>Plankton</b>	<b>Time</b>	<b>ID</b>	<b>Magnific.</b>		
	9:20 AM 9:30 AM	Algea, Diatom chain	2X		
	9:40 AM 9:45 AM 9:58 AM	Phyto-Diatom chain, biddulphia Cosciniscus species	2X 10/0.25		
	10:17 AM 10:27 AM 10:44 AM 11:26AM	Corophium Lacustre Van hoffen Diatom	3X 2X 20X		
	11:43 AM 11:22 AM 11:13 AM	Polychate worm larvae Phytochain	20 X 20 X 2.5X		
	1:10 PM 1:26 PM	Anaostis Species Skeletonema Species Copepod – Calanus Dinoflagellate Copepod – Nauplius Zoo copepod Coscinodiscus X 3	35		
<b>Sediment Cores</b>	<b>Length</b>	<b>H2S Smell</b>	<b>Rare</b>	<b>Common</b>	<b>Abundant</b>
<b>9:00 AM</b>			Mud	Sand	Clay
<b>9:35 AM water 34 cm</b>	7 cm		Gravel, pebbles (plastic)		Clay, mud, sand
<b>10:00 AM</b>			Wood,		Clay, gravel,

<b>water 45 cm</b>			shells, mussels		sand, pebbles
<b>10:26 AM –</b>	8 cm			Clay, sand, gravel, pebbles, living vegetation	
<b>10:45 AM (saved core)</b>	11 cm –			Pebbles	Clay
<b>11:04 AM (core stuck in tube - photo) water 50 cm</b>	22 cm – layers with sandy top 6 cm & clay below		Living vegetati on	leaves	Clay, sand
<b>11:30 AM</b>	22 cm		Gravel	Clay, sand, pebbles, leaves, wood, slag	
<b>11:52 AM</b>	17 cm				Clay, sand, leaves
<b>12:50 PM</b>	8 cm		Sand, gravel, pebbles	Mud	clay
<b>1:12 PM</b>	9-10 cm		Leaves, brick	Gravel, pebbles	Clay, sand
<b>Other Observations</b>	During much of our sampling day an Osprey circled out and around the southern end of the pier. We never saw him dive for food but his vigilance was noted.				

***HRECOS Screen Captures on following pages***

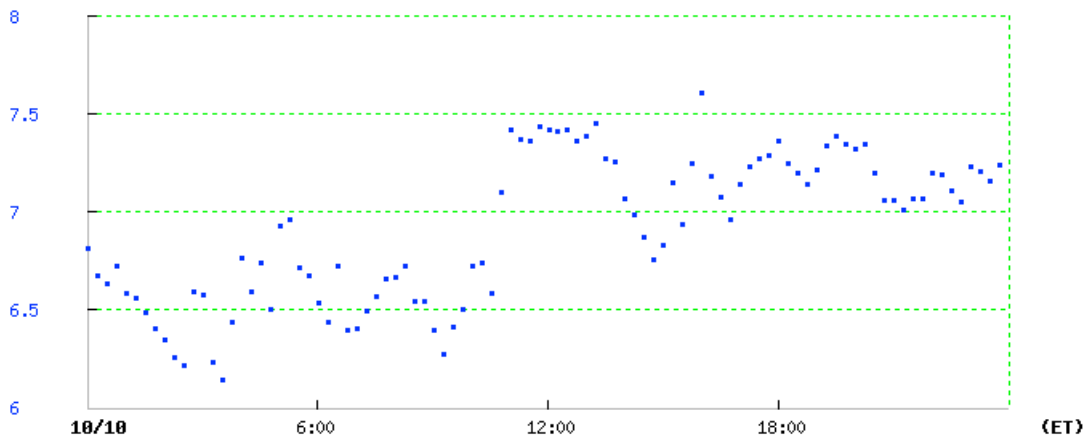
HRECOS site is located just behind the rectangular eastern end of the pier attached to one of the pier stations. When operational it is a continuous data feed recorded every 15 minutes.

Piermont Pier, NY (hydro) Dissolved Oxygen Percent (%) (verified through: 2013-04-



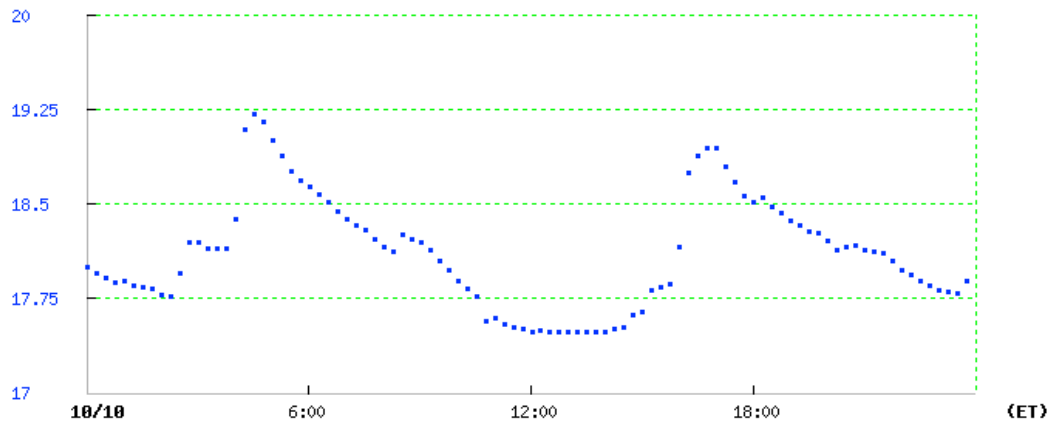
### DO % Saturation

Piermont Pier, NY (hydro) Dissolved Oxygen (ppm) (verified through: 2013-04-14)



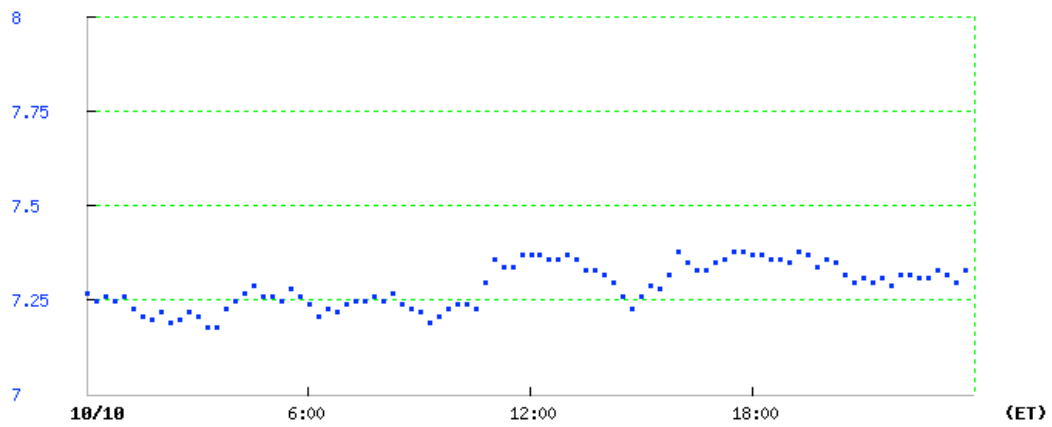
### DO ppm

Piermont Pier, NY (hydro) Water Temp (C) (verified through: 2013-04-14)



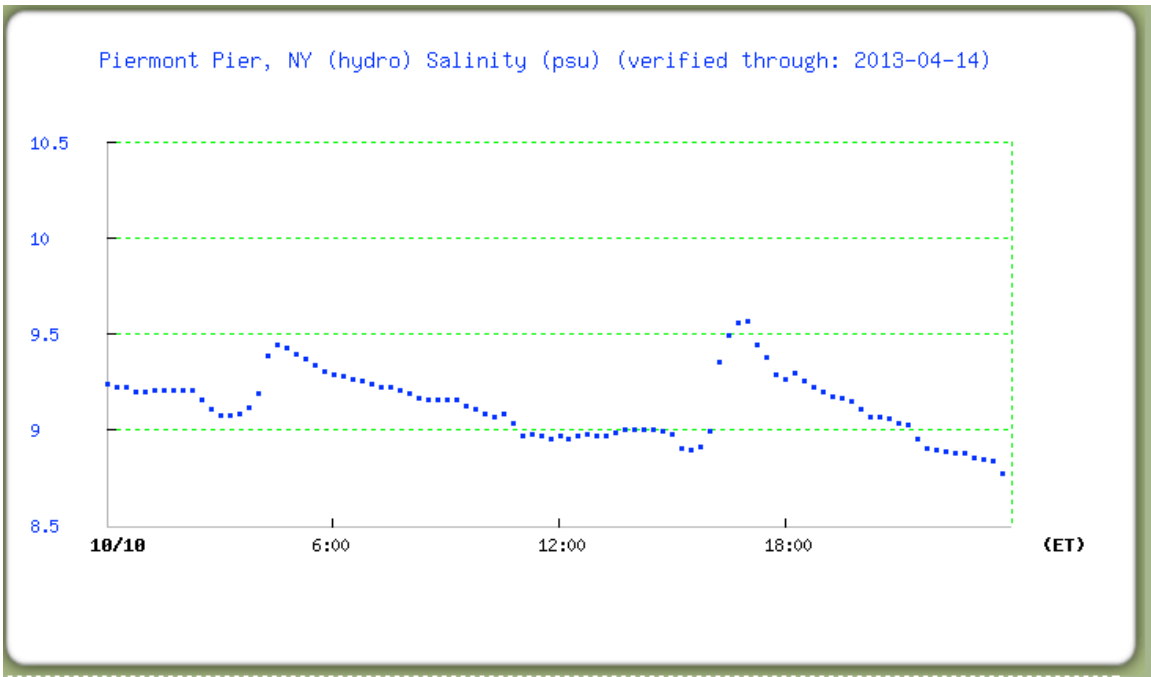
**Water temperature**

Piermont Pier, NY (hydro) Acidity (pH) (verified through: 2013-04-14)

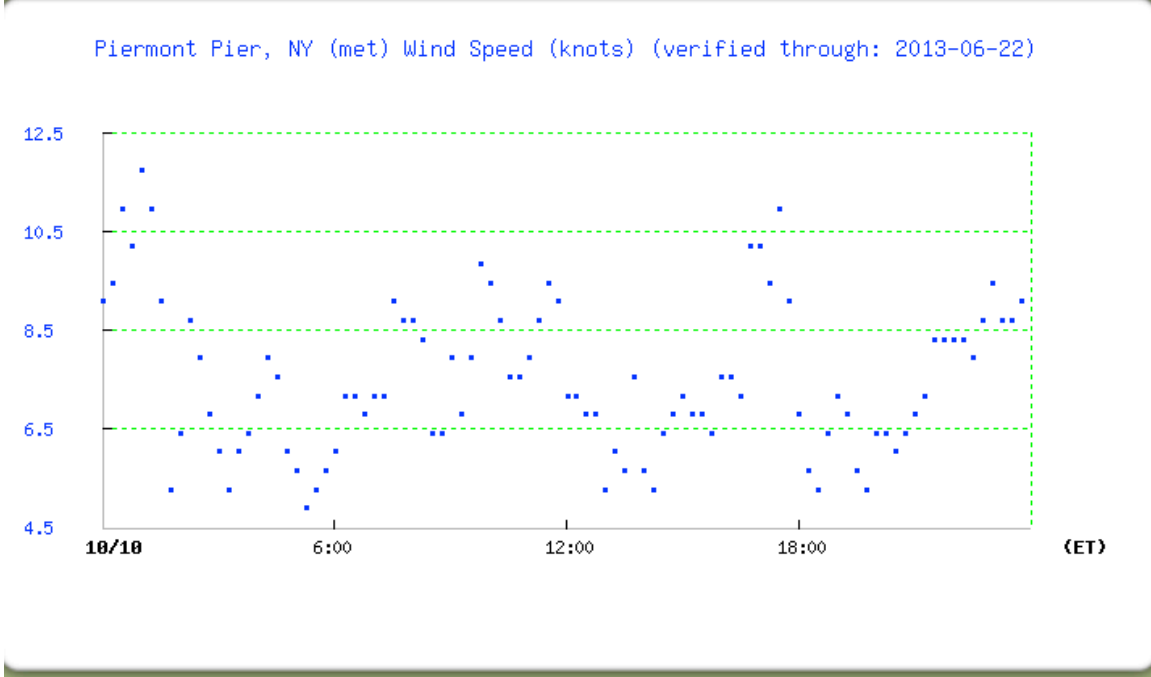


**pH**

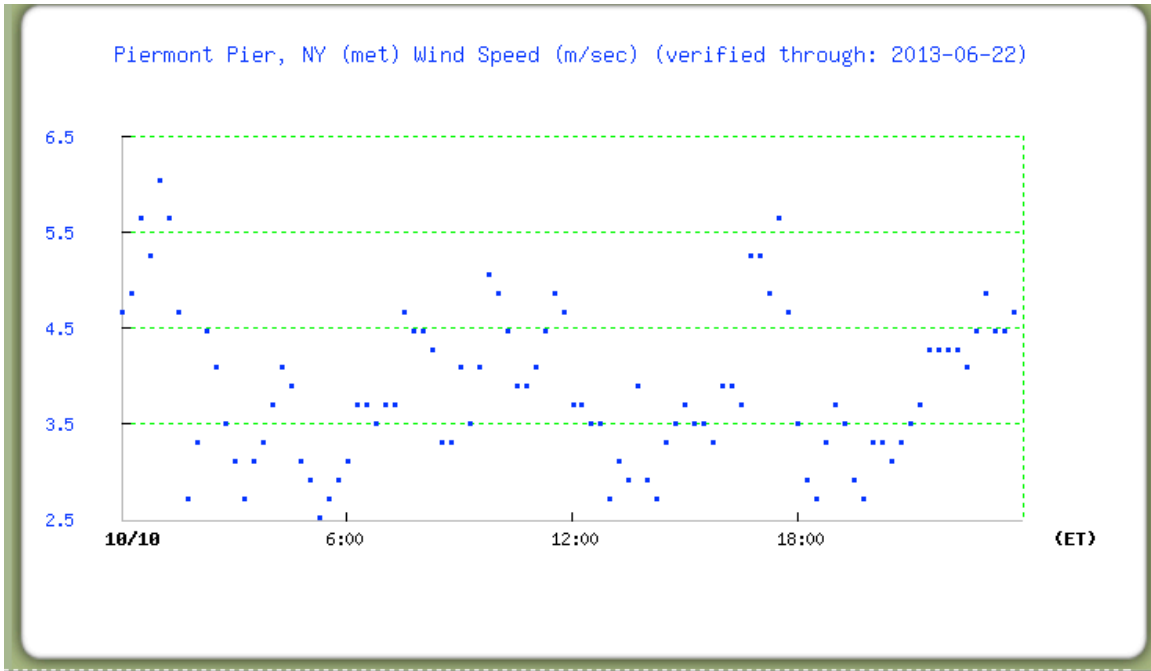




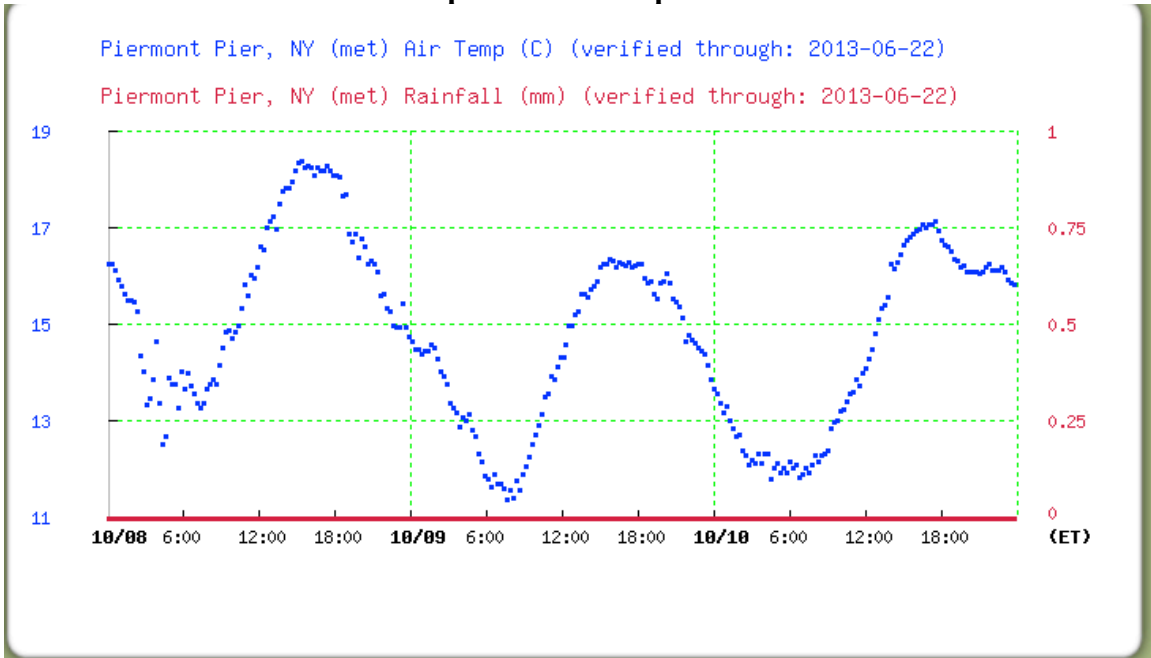
**Salinity in psu (equates in the Hudson to ppt) (compare to Quantab conversion)**



**Windspeed in knots**



**Windspeed in meters per second**



**Air Temperature & Rainfall for 3 days**