

**Day in the Life of the Hudson River 10/16/18 Data**

**PIERMONT PIER**

**Piermont, NY**

**RIVER MILE: 25.4**

*Salt Front: ~RM 24*

Jen Mazza, **Clarkstown South High School-**

Shawn Kapusinsky, **Spring Valley High School-**

Brian Newburger, Pat Kilkelly, Chris Lorusso, **Tappan Zee High School-**

Tom Mullane, Brenda King, Eileen McCaffrey, **Pearl River High School –**

Margie Turrin, Laurel Zaima and 8 Lamont Scientists, **Lamont Doherty Earth Observatory**

Brent Turrin, **Rutgers University**

Kim Burgos, **Rockland County Youth & Service Corps**

Lauren Sadowski, **Bachelor of Science in Geology at University of St. Andrews**

**Latitude N 41° 02'592 Longitude W 73° 53'789**



Clarkstown South High School



Spring Valley High School



Tappan Zee High School



Pearl River High School

**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:** 80% Urban/Residential, 20% Forested

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

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

**Plants in area:** 15% sumac and other plants; 85% phragmites; No submerged aquatic plants in the water

**River Bottom description:** sandy, rocky bottom with marsh grass growing in our near the water

<i>ITEM</i>	<i>Time</i>	<i>Reading</i>	<i>Comments</i>
<i>Physical</i>			

<i>Air Temperature</i> <i>Group #1</i>	9:15 AM 10:19 AM 11:07 AM 12:15 PM	12° C *did not record 11.5° C 14° C	53.6° F  52.7° F 57.2° F	
<i>Group #2</i>	1:08 PM 9:26 AM 10:01 AM 10:46 AM 12:20 PM 1:20 PM	17.2° C 14° C 11° C 14° C 16.2° C 13° C	62.96° F 57.2° F 51.8° F 57.2° F 61.16° F 55.4° F	
<i>Wind Speed:</i> <i>Group #1</i>	9:15 AM 10:19 AM 11:07 AM 12:15 PM	<i>Anemometer</i> 10 knots 20 knots 20 knots	<i>Beaufort</i> 4 6 -	Northwest Northwest -
<i>Group #2</i>	1:08 PM 9:26 AM 10:01 AM 10:46 AM 12:20 PM 1:20 PM	7 knots 10 knots 15 knots 15 knots 15 knots 10 knots 5 knots	- 3 3 4 4 3 -	Northwest North North North Northeast North Northwest
<i>Weather today</i>	No rain, mostly cloudy (51- 75%)			
<i>Weather recently</i>	Rain, windy, cold (dropped 30 degrees F)			
<i>Water Temperature</i> <i>Group #1:</i>	9:23 AM 9:56 AM 10:36 AM 12:07 PM 12:54 PM	18° C 16° C 16° C 18° C 19° C	64.4° F 60.8° F 60.8° F 64.4° F 66.2° F	
<i>Group #2:</i>	9:23 AM 9:54 AM 10:36 AM 12:09 PM 12:55 PM	15° C 14° C 16° C 15° C 16° C	59° F 57.2° F 60.8° F 59° F 60.8° F	
<i>Turbidity-</i> <i>Group #1- long sight</i> <i>tube (cm)</i>	<i>Time:</i> 9:40 AM 9:59 AM 10:27 AM 10:43 AM 11:00 AM 12:35 PM 1:06 PM 1:33 PM	<i>Reading 1:</i> 26 26 22 23, 19 23, 16 19.2, 20 18, 18 17	<i>Average (cm):</i> 26 26 22 21 19.5 19.6 18 17	
<i>Group #2- secchi disk</i> <i>(cm)</i>	9:30 AM 9:40 AM 10:00 AM 10:23 AM 10:39 AM 11:00 AM 12:10 PM 12:26 PM 12:53 PM 1:20 PM	40, 25, 40 47, 50 30 *89 35, 28 27, 24, 80 30, 31 33 27, 33 28, 29	35 48.5 30 *89 31.5 43.67 30.5 33 30 28.5	* anomalous; high
<b>CHEMICAL</b>				
<b>Salinity-</b>	<b>Time</b>	<b>Chloride(ppm)</b>	<b>Total Salinity</b>	

<i>Group #1: Low Range Quantabs</i>	9:23 AM	90	<i>(ppm)</i>			
	9:56 AM	86			162.6	
	10:36 AM	86			155.4	
	12:07 PM	91			155.4	
	12:54 PM	91			164.4	
	<i>Group #2: Low Range Quantabs</i>	9:23 AM			99	164.4
		9:54 AM			163	178.8
		10:36 AM			99	294.5
		12:09 PM			91	178.8
		12:55 PM			91	164.4
			164.4			
<b>DO – Titration Kit</b>	<b>Time</b>	<b>Temp</b>	<b>ppm DO</b>	<b>% saturation</b>		
<i>Group #1</i>	9:23 AM	18° C	11	115		
	9:56 AM	16° C	9	90		
	10:36 AM	16° C	*16	*>140% err		
	12:07 PM	18° C	8	83		
	12:54 PM	19° C	10	106		
<i>Group #2:</i>	9:23 AM	15° C	3 <i>*bad reagent</i>	29		
	9:54 AM	14° C	3 <i>*bad reagent</i>	28		
	10:36 AM	16° C	<i>pulled</i>	80		
	12:09 PM	15° C	8	49		
	12:55 PM	16° C	5	100		
			10			
<i>Group #1:</i>	<b>Time</b>	<b>pH- color match kit</b>		<b>Alkalinity (ppm)</b>		
		9:23 AM	8.2		60	
		9:56 AM	7.5		80	
		10:36 AM	7.5		80	
		12:07 PM	7.4		50	
		12:54 PM	7.5		50	
		<i>Group #2:</i>	9:23 AM		7.2	110
			9:54 AM		7.2	85
			10:36 AM		7.0	100
			12:09 PM		7.0	72
12:55 PM	7.1		80			
<i>Group #1:</i>	<b>Time</b>	<b>Nitrates (ppm)</b>		<b>Phosphates (ppm)</b>		
		9:23 AM	0.88		0.2	
		9:56 AM	0		0.12	
		10:36 AM	0		0.2	
		12:07 PM	0		0.68	
		12:54 PM	0		0.24	
		<i>Group #2:</i>	9:23 AM		0.88	0.48
			9:54 AM		0	0.1
			10:36 AM		0.44	0.64
			12:09 PM		0.44	0.5
12:55 PM	0		0.4			
<b>Fish- Seine</b>	<b>Number</b>	<b>Name</b>	<b>Length of longest (cm)</b>			
<i>9:26 AM Brook Silverside Group</i>	1	Atlantic Silverside	6			
	1	Bay anchovy	4			
<i>9:30 AM Atlantic Silverside Group</i>	15	Striped Bass	11.5			
	1	White Perch	9.5			
	4	Striped Bass	12			

9:53 AM <i>White Catfish Group</i>	1	White Perch	15	
	1	American Eel	10.5	
9:53 AM <i>Chanel Catfish Group</i>	1	Striped Bass	YOY	
11:00 AM <i>Striped Killifish Group</i>	1	White Perch	13	
	5	Striped Bass	9	
11:07 AM <i>Mummichog Group</i>	7	Striped Bass	10.5	
12:00 PM <i>Alewife Group</i>	7	Striped Bass	9.15	
12:45 PM <i>Blueback Herring Group</i>	1	Striped Bass	9	
	1	Atlantic Silverside	4	
			16	
12:55 PM <i>White Perch Group</i>	3	White Perch	11	
	5	Striped Bass		
			5	
12:55 PM <i>Yellow Perch Group</i>	4	Atlantic Silverside	4.5	
	22	Herring	12.5	
		Striped Bass		
<b>Fish Totals</b>	<b>TOTAL: 63</b>	<b>Diversity: 6</b>		
<b><i>Macroinvertebrates</i></b>	<b><i>Number</i></b>	<b><i>Name</i></b>	<b><i>Length of longest (cm)</i></b>	
9:26 AM <i>Brook Silverside Group</i>	0			
9:30 AM <i>Atlantic Silverside Group</i>	0			
9:53 AM <i>White Catfish Group</i>	5	Blue Crab	5.5	
9:53 AM <i>Chanel Catfish Group</i>	2	Blue Crab		
11:00 AM <i>Striped Killifish Group</i>	0			
11:07 AM <i>Mummichog Group</i>	0			
12:00 PM <i>Alewife Group</i>	6	Blue Crab	6.1	
12:45 PM <i>Blueback Herring Group</i>	0			

12:55 PM White Perch Group	0				
12:55 PM Yellow Perch Group	0				
<b>Macroinvertebrate Totals</b>	<b>TOTAL: 13</b>	<b>Diversity: 1</b>			
<b>Tides-</b>	<b>Time</b>	<b>Rising, Falling, Unchanged</b>	<b>Height (cm)</b>	<b>Rate of Tidal Change (cm/min)</b>	
Group #1	9:15 AM 10:19 AM 11:07 AM 12:15 PM 1:08 PM	Group #1 did not record tide direction	262 320 317 327 360	-	
Group #2	9:26 AM 10:01 AM 10:46 AM 12:20 PM 1:20 PM	Falling Falling Rising Rising Rising	392 401 399 433 450	- .257 .044 .39 .378	
<b>Currents</b>	<b>Time</b>	<b>Cm/second</b>	<b>North/South</b>	<b>Flood/Ebb/Still</b>	
Group #1	9:15 AM 10:19 AM 11:07 AM 12:15 PM 1:08 PM	6.25 3.21 .2 21.7 26.25	Group #1 did not record current direction		
Group #2	9:26 AM 10:01 AM 10:46 AM 12:20 PM 1:20 PM	10.15 6.85 18 31.5 40.3	South South South North North	Ebb Ebb Ebb Flood Flood	
<b>Sediment Cores</b>	<b>Time</b>	<b>Length (cm)</b>	<b>Oxid Top</b>	<b>Grain Size</b>	<b>Other Items</b>
White Perch Group	9:20 AM	7.62	Yes	Abundant: Sand, gravel, pebbles	H <sub>2</sub> S smell, leaves, coal (rare)
Yellow Perch Group	9:25 AM	28.5	No	Abundant: Clay Rare: mud, sand, pebbles	Oil, living vegetation (rare)
Atlantic Silverside Group	10:00 AM	14	No	Abundant: Sand Common: Gravel, Pebbles	Coal (rare)
Brook Silverside Group	10:10 AM	17	Yes	Abundant: Clay Rare: mud, sand, gravel, pebbles	Clam shells (rare)
Chanel Catfish Group	10:30 AM	6.5	Yes	Abundant: clay, mud Common: sand (top) Rare: gravel, pebbles	Brick (rare)
White Catfish Group	10:42 AM	19	No	Abundant: clay, mud Common: sand Rare: gravel, pebbles	H <sub>2</sub> S smell, leaves (rare), oyster shells (rare)

<i>Striped Killifish Group</i>	12:05 PM	9.5	No	<i>Abundant:</i> clay, mud <i>Common:</i> sand <i>Rare:</i> pebbles	Oil
<i>Mummichogs Group</i>	12:05 PM	13	No	<i>Abundant:</i> mud <i>Common:</i> clay <i>Rare:</i> sand, gravel, pebbles	Brick (rare), slag (rare)
<i>Alewife Group</i>	12:52 PM	9	No	<i>Abundant:</i> mud, sand <i>Common:</i> gravel, pebbles <i>Rare:</i> clay	Brick (rare), coal (rare)
<i>Blueback Herring Group</i>	1:10 PM	12	Yes	<i>Abundant:</i> clay <i>Common:</i> mud <i>Rare:</i> gravel, pebbles	