

Day in the Life of the Hudson River 10/22/19 Data

PIERMONT PIER

Piermont, NY

RIVER MILE: 25.4

Salt Front: ~ RM 53

Jen Mazza, **Clarkstown South High School- 8**

Jessica Flanagan, **Clarkstown North High School- 7**

Shawn Kapusinsky, **Spring Valley High School- 12**

Brian Newburger, Pat Kilkelly, **Tappan Zee High School- 10**

Tom Mullane, Cathleen Bonanno, Eileen McCaffrey, **Pearl River High School – 33**

Margie Turrin, Laurel Zaima and 11 Lamont Scientists, **Lamont Doherty Earth Observatory**

Brent Turrin, **Rutgers University**

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 phragmites growing in our near the water

Clarkstown North High School



<i>ITEM</i>	<i>Time</i>	<i>Reading</i>		<i>Comments</i>
<i>Physical</i>				
<i>Air Temperature</i>	8:56 AM	15.8 ° C	60.4 ° F	
<i>Group A</i>	9:53 AM	15.3 ° C	59.5 ° F	

<i>Group B</i>	10:39 AM	14.1 °C	57.4 °F	
	12:15 PM	14.1 °C	57.4 °F	
	1:01 PM	15 °C	59 °F	
	8:56 AM	15.6 °C	60.1 °F	
	9:41 AM	14.2 °C	57.6 °F	
	10:42 AM	14 °C	57.2 °F	
	12:15 PM	14.1 °C	57.4 °F	
		<i>Not recorded</i>	<i>Not recorded</i>	<i>Not recorded</i>
<i>Wind Speed:</i> <i>Group A</i>	8:56 AM	<i>Anemometer</i>	<i>Beaufort</i>	
<i>Group B</i>	9:53 AM	3.4 knots	2	
	10:39 AM	3.1 knots	2	
	12:15 PM	6 knots	2	
	1:01 PM	3.8 knots	2	
	8:56 AM	10 knots	2	
	9:41 AM	5 knots	2	
	10:42 AM	3.5 knots	2	
	12:15 PM	2.7 knots	2	
	<i>Not recorded</i>	6.4 knots	2	
		6.5 knots	2	
<i>Weather today</i>	Fog, drizzling, misty, wavy, full cloud cover (100%)			
<i>Weather recently</i>				
<i>Tides-</i> <i>LT: 11:22 am</i>	<i>Time</i>	<i>Rising, Falling, Unchanged</i>	<i>Height (cm)</i>	<i>Rate of Tidal Change (cm/min)</i>
<i>Group A</i>	8:56 AM	<i>Set Group</i>	348	-
	9:53 AM	<i>Not recorded</i>	320	-0.49
	10:39 AM	<i>Not recorded</i>	319	-0.02
	12:15 PM	Flood	334	0.42
	1:01 PM	Flood	375	0.89

<i>Group B</i>	8:56 AM	<i>Set Group</i>	385	-
	9:41 AM	<i>Not recorded</i>	360	-0.56
	10:42 AM	<i>Not recorded</i>	355	-0.08
	12:15 PM	<i>Not recorded</i>	363	0.09
		<i>Not recorded</i>	378	-
<i>Currents</i>	<i>Time</i>	<i>Cm/second</i>	<i>North/South</i>	<i>Flood/Ebb/Still</i>
<i>Group A</i>	8:56 AM	6.8	South	Ebb
	9:53 AM	13.9	South	Ebb
	10:39 AM	4.1	South	Ebb
	12:15 PM	22.9	North	Flood
	1:01 PM	26.36	North	Flood
<i>Group B</i>	8:56 AM	8.9	South	Ebb
	9:41 AM	9.7	South	Ebb
	10:42 AM	5	South	Ebb
	12:15 PM	30.4	-	-
		<i>Not recorded</i>	31.5	North
<i>Water Temperature</i> <i>Group A</i>	9:00 AM	16 °C	60.8 °F	
<i>Group B</i>	9:45 AM	15 °C	59 °F	
	10:30 AM	15 °C	59 °F	
	12:12 PM	15 °C	59 °F	
	12:50 PM	15 °C	59 °F	
	9:00 AM	16 °C	60.8 °F	
	9:50 AM	15 °C	59 °F	
	10:33 AM	15 °C	59 °F	
	12:06 PM	15 °C	59 °F	

	1:01 PM	15° C	59° F	
Turbidity- Secchi disk (cm)	<i>Time:</i>	<i>Readings:</i>	<i>Average (cm):</i>	
<i>Group A-</i>	9:05 AM	85, 52, 142	93	
	9:45 AM	102, 96, 101	99.6	
	10:26 AM	92, 70, 81	81	
	12:09 PM	77, 87, 82	82	
	12:42 PM	68, 66, 84	73	
<i>Group B-</i>	-	-	-	
	10:00 AM	82, 73, 80	78.3	
	10:45 AM	84, 89, 91	88	
	12:36 PM	69, 68, 66	68	
	1:13 PM	40, 64, 84	63	
Long sight tube (cm)				
<i>Group A-</i>	9:05 AM	51.2, 54.6, 50.5	50.4	
	9:45 AM	63.2, 64.5, 64.7	62.5	
	10:26 AM	63.5, 67, 63.5	63	
	12:09 PM	65.5, 51, 43.2	58.13	
	12:42 PM	54, 52.4, 42.4	47.9	
<i>Group B-</i>	-	-	-	
	10:00 AM	55, 56.9, 54.1	53.6	
	10:45 AM	59, 58.5, 62.7	58.4	
	12:36 PM	56.8, 58, 57.4	55.73	
	1:13 PM	55, 39.5, 36.5	42	
CHEMICAL				
Salinity-	Time	Refractometer Total Salinity (ppt)	Hydrometer Total Salinity (ppm)	
<i>Group A:</i>	9:00 AM	5	5	
	9:45 AM	5	4	
	10:30 AM	4	4	
	12:12 PM	-	6	
	12:50 PM	5	*0	<i>*anomalous; low</i>
<i>Group B:</i>	9:00 AM	4	4	
	9:50 AM	5	7	
	10:33 AM	5	*12	<i>*anomalous; high</i>
	12:06 PM	5	6	
	1:01 PM	5	5	
DO – Titration Kit	Time	Temp	ppm DO	% saturation
<i>Group A:</i>	9:00 AM	16° C	5	50
	9:45 AM	15° C	11	109
	10:30 AM	15° C	-	-
	12:12 PM	15° C	12 <i>*high</i>	120
	12:50 PM	15° C	9	89
<i>Group B:</i>	9:00 AM	16° C	9, 10	90, 100
	9:50 AM	15° C	10, 10	99, 99
	10:33 AM	15° C	10	99
	12:06 PM	15° C	7, 10	70, 99
	1:01 PM	15° C	9	90
<i>Group A:</i>	Time	pH- color match kit	Alkalinity (ppm)	
	9:00 AM	8	20	
	9:50 AM	7.5	60	
	10:33 AM	8	162	
	12:06 PM	7.75	158	
	1:01 PM	7.75	-	
<i>Group B:</i>	9:00 AM	7	100	<i>*anomalous; low</i>
	9:45 AM	7	94	

	10:30 AM 12:12 PM 12:50 PM	7.5 7 7.5	100 100 -	
<i>Group A:</i>	Time 9:00 AM 9:50 AM 10:33 AM 12:06 PM	Nitrates (ppm) <0.88 1.32 <0.88 -	Phosphates (ppm) 0.16 0.18 0.19 0.22	
<i>Group B:</i>	1:01 PM 9:00 AM 9:45 AM 10:30 AM 12:12 PM 12:50 PM	<0.88 0 0 .0044 <0.88 -	0.34 0.5 0.16 0.1 0.22 0.3	
Fish- Seine	Number	Name	Length of longest (cm)	
<i>Atlantic Silverside Group</i>	7 1	Atlantic Silverside Striped Bass	11 9	Total Striped Bass - 8
<i>Brook Silverside Group</i>	19	Atlantic Silverside	10.1	Total Eel – 1
<i>White Catfish Group</i>	1	Atlantic Silverside	9 cm	Total Mummichog – 1
<i>Chanel Catfish Group</i>	62 2	Atlantic Silverside Striped Bass	10.5 9.5	Total Atlantic Silverside -221
<i>Mummichog Group</i>	60 1 1	Atlantic Silverside Mummichog Striped Bass	10.0 9.0 7.0	
<i>Striped Killifish Group</i>	5	Atlantic Silverside	9.2	
<i>Menhaden Group</i>	2	Atlantic Silverside	9.5	
<i>Blueback Herring Group</i>	16 1 1	Atlantic Silverside American Eel Striped Bass	11.5 14 9	
<i>Yellow Perch Group</i>	8 3	Atlantic Silverside Striped Bass	10.5 11	
<i>White Perch Group</i>	41	Atlantic Silverside	11	
Fish Totals	TOTAL: 231	Diversity: 4		
Macroinvertebrates	Number	Name	Length of longest (cm)	
<i>-Atlantic Silverside Grp</i>	0			Total Blue Crab = 17
<i>-Brook Silverside Group</i>	4 6	Blue Crab Sand Shrimp	9.1 5	Total Sand Shrimp – 1
<i>White Catfish Group</i>	1	Blue Crab	2.9	Total Comb Jelly = 4
<i>Chanel Catfish Group</i>	4	Blue Crab	6.5	
<i>Mummichog Group</i>	2	Blue Crab	3.0	

-Striped Killifish Group	0				
-Menhaden Group	3	Comb Jelly			
-Blueback Herring Group	4	Blue Crab		3	
	1	Comb Jelly			
-Yellow Perch Group	2	Blue Crab			
-White Perch Group	0				
Macroinvertebrate Totals	TOAL: 27	Diversity: 3			
Sediment Cores	Time	Length (cm)	Oxid Top	Grain Size	Other Items
White Perch Group Northside	9:15 AM	15.5	Yes	Abundant: Clay, Mud, Gravel, Pebbles Common: Sand	Oil Rare: Brick, Coal, Slag
Yellow Perch Group Southside	9:15 AM	6.5	No	Abundant: Clay, Mud Common: Sand, Pebbles	H ₂ S smell Rare: Brick, Slag, Living Veg
Atlantic Silverside Group Southside	10:00 AM	10	No	Abundant: Clay, Mud, Pebbles Common: Sand, Gravel	Common: slag Rare: Leaves, wood, oyster shells Brick *Fruity smell?
Brook Silverside Group Northside	10:00 AM	14	Yes	Abundant: Pebbles Common: Gravel Rare: Clay, Mud, Sand	H ₂ S smell Common: Brick Rare: leaves, woods, oyster shells, macroinvert, coal slag
Chanel Catfish Group Northside	10:33 AM	13	Yes	Abundant: Clay Common: Mud, Sand Rare: Pebbles	H ₂ S smell Common: Brick, Living vegetation Rare: Wood
White Catfish Group	10:40 AM	10	No	Abundant: Mud, Sand Rare: Pebbles	Rare: Brick, Slag, living vegetation
Mummichogs Group Northside	12:11 PM	12	Yes	Abundant: sand, pebbles Common: mud, gravel Rare: clay	Common: Brick Rare: Coal
Striped Killifish Group Northside	12:13 PM	25.5	No	Abundant: clay, mud Common: sand Rare: gravel, pebbles	H ₂ S smell Abundant: leaves Common: brick Rare: shells oysters, macroinvertebrates
Menhaden Group Northside	1:00 PM	10.5	Yes	Common: Sand, gravel, pebbles Rare: clay, mud	H ₂ S smell Rare: Brick, slag
Blueback Herring Group Northside	1:00 PM	9	No	Common: Sand, Gravel, Pebbles Rare: Clay, Mud	H ₂ S smell Rare: Brick, coal, slag