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



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

ITEM	Time	Reading	Comments
Physical			

CHEMICAL				
	1			
	1:20 PM	28, 29	28.5	
	12:53 PM	27, 33	30	
	12:26 PM	33	33	
	12:10 PM	30, 31	30.5	
	11:00 AM	27, 24, 80	43.67	
	10:39 AM	35, 28	31.5	high
	10:23 AM	*89	*89	* anomalous;
•	10:00 AM	30	30	
(cm)	9:40 AM	47, 50	48.5	
Group #2- secchi disk	9:30 AM	40, 25, 40	35	
	1:33 PM	17	17	
	1:06 PM	18, 18	18	
	12:35 PM	19.2, 20	19.6	
	11:00 AM	23, 16	19.5	
	10:43 AM	23, 19	21	
woo (om)	10:27 AM	20 22	22	
tube (cm)	9:59 AM	26	26	
Group #1- long sight	9:40 AM	26	26	
Turbidity-	Time:	Reading 1:	Average (cm):	
	12:55 PM	16 ° C	60.8° F	
	10:36 AM 12:09 PM	15° C	59° F	
	9:54 AM 10:36 AM	14° C 16° C	60.8° F	
Group #2:	9:23 AM 9:54 AM	15° C 14° C	57.2° F	
Cuaun #2.	12:54 PM	15° C	66.2° F 59° F	
	12:07 PM	18° C 19° C	64.4 F 66.2 ° F	
	10:36 AM	18° C	60.8 F 64.4 ° F	
	9:56 AM	16° C	60.8 ° F	
Group #1:		18° C 16° C	64.4 F 60.8 ° F	
-	9:23 AM	18° C	64.4° F	
Water Temperature	Kam, willuy,	lora (aropped 30 degrees r)		
Weather recently		cold (dropped 30 degrees F)		
Weather today		ly cloudy (51- 75%)		1 (OTEN V COL
	1:20 PM	5 knots	-	Northwest
	12:20 PM	10 knots	3	North
	10:46 AM	15 knots	4	Northeast
•	10:01 AM	15 knots	4	North
Group #2	9:26 AM	15 knots	3	North
	1:08 PM	10 knots	3	North
	12:15 PM	7 knots	-	Northwest
	11:07 AM	20 knots	_	-
· T	10:19 AM	20 knots	6	Northwest
Group #1	9:15 AM	10 knots	4	Northwest
Wind Speed:		Anemometer	Beaufort	
	1:20 PM	13 ° C	55.4° F	
	12:20 PM	16.2 ° C	61.16° F	
	10:46 AM	14°C	57.2 ° F	
3.0up 112	10:01 AM	11 ° C	51.8° F	
Group #2	9:26 AM	14° C	57.2° F	
	1:08 PM	17.2° C	62.96° F	
	12:15 PM	14° C	57.2° F	
	11:07 AM	11.5 ° C	52.7° F	
Group #1	9:15 AM 10:19 AM	*did not record	33.0 1	
		12° C	53.6° F	

Quantabs 9.36 AM 86 153.4 155.4 155.4 12.97 PM 91 164.4 164.4 164.4 165.4 166.4	Group #1: Low Range	9:23 AM	90	(ppm)	
10-36 AM 86 155.4 1207 PM 1254 PM 91 164.4 91 164.4 923 AM 99 164.4 91 164.4 10-36 AM 10-36 AM 99 294.5 high 1255 PM 1255 PM 91 164.4	-				
12-07 PM 91 155.4 164.4 923 AM 99 164.4 923 AM 99 164.4 924.5 high 12-55 PM 164.4	Quantaos				
12-54 PM					
Group #2: Low Range Quantabs					
Quantabs 9.54 AM 10.36 AM 10.36 AM 10.36 AM 12:09 PM 12:09 PM 12:55 PM 12:09 PM 12:55 PM 10.44 178.8 164.4 164.4 164.4 *anomalous; high 178.8 high 178.8 high 164.4 164.4 DO - Titration Kit Time Temp ppm DO % saturation Group #1 9.23 AM 16° C 9 9 90 10.36 AM 16° C 9 9 90 10.36 AM 16° C 12:07 PM 18° C 8 8 83 12:54 PM 19° C 10 106 106 106 106 106 106 106 106 106	Group #2: Low Panga				
10.36 AM 99 178.8 164.4 164.					*anomalous:
12:09 PM 91 178 8 164.4	Quantabs				· ·
12:55 PM					nign
DO − Titration Kit Time Temp ppm DO % saturation					
DO - Titration Kit Time Properation		12:55 PM	91		
Group #I 9:23 AM 9:56 AM 10:36 AM 12:07 PM 12:07 PM 12:07 PM 12:07 PM 12:07 PM 12:07 PM 12:07 PM 10:06	DO Tituation Kit	Time	Tamp		0/ saturation
9.56 AM					
10:36 AM	Group #1				
12:07 PM					
12:54 PM					
Group #2: 9:23 AM 15° C 3 *bad reagent 29 3 *bad reagent 28 10:36 AM 16° C pulled 80 49 12:55 PM 16° C 5 100					
9.54 AM	G #2				
10:36 AM	Group #2:				
12:09 PM					
12:55 PM					
Time pH-color match kit Alkalinity (ppm)					
Time 9H-color match kit 8.2 60 9.56 AM 8.2 60 80 10:36 AM 7.5 80 12:54 PM 7.5 50 12:54 PM 7.5 50 12:55 PM 7.0 1100 72 12:55 PM 7.1 80 80 7.2 7.1 80 7.2 7.1 80 7.2 7.1 80 7.2 7.1 80 7.2 7.1 80 7.2 7.1 80 7.2 7.1 7.1 80 7.2 7.1 7.1 80 7.2 7.1		12:55 PM	16°C		100
Group #1: 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 Group #2: 9:23 AM 7.2 110 9:54 AM 7.0 100 12:09 PM 7.0 12:09 PM 7.0 72 72 12:55 PM 7.1 80 Time Nitrates (ppm) Phosphates (ppm) 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 Group #2: 9:23 AM 0.88 0.48 9:54 AM 0 0.1 0.68 12:55 PM 0 0.4 0.5 15 Striped Bass 11.5				·	
9:56 AM	~ "*		_		
10:36 AM	Group #1:				
12:07 PM					
12:54 PM 7.5 50 110 9:23 AM 7.2 85 10:36 AM 7.0 100 12:09 PM 7.0 72 12:55 PM 7.1 80 Phosphates (ppm) 9:23 AM 0.88 0.2 0.12 12:07 PM 0 0.68 0.2 12:07 PM 0 0.68 0.2 12:54 PM 0 0.24 0.54 0.64 12:09 PM 0.44 0.64 12:09 PM 0.44 0.5 12:55 PM 0 0.4 12:55 PM 0 0.5 0					
Group #2: 9:23 AM 9:54 AM 7.2 110 9:54 AM 10:36 AM 12:09 PM 12:55 PM 7.0 72 12:09 PM 12:55 PM 7.1 80 Time 9:23 AM 10:36 AM 10:36 AM 12:54 PM Nitrates (ppm) 0 0.88 Phosphates (ppm) 0.2 Group #1: 9:23 AM 10:36 AM 10:36 AM 10:36 AM 12:54 PM 0 0.44 0.2 Group #2: 9:23 AM 9:54 AM 10:36 AM 12:09 PM 12:55 PM 0.88 0.44 0.44 0.5 0.4 0.1 0.64 0.4 Fish-Seine Number Name Length of longest (cm) 9:26 AM Brook Silverside Group 1 1 15 1 1 15 1 15 16 17 17 18 10 1					
9:54 AM					
10:36 AM	Group #2:				
12:09 PM 7.0 72 80					
12:55 PM					
Time					
Group #1: 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 Group #2: 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 Fish- Seine Number Name Length of longest (cm) 9:26 AM 1 Atlantic Silverside 6 Group 15 Striped Bass 11.5 9:30 AM 1 White Perch 9.5				80	
Group #1: 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 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 Fish- Seine Number Name Length of longest (cm) 9:26 AM 1 Atlantic Silverside 6 Group 15 Striped Bass 11.5 9:30 AM 1 White Perch 9.5		Time	Nitrates (ppm)	Phosphates (ppm)	
10:36 AM 0 0.2 0.68 12:54 PM 0 0.24 0.24 0.24 0.24 0.24 0.24 0.24 0.35 0.48 0.48 0.44 0.64 0.5 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.4 0.5 0.5 0.4 0.5	Group #1:	9:23 AM			
12:07 PM 0 0.68 12:54 PM 0 0.24 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 Fish- Seine Number Name Length of longest (cm) 9:26 AM 1 Atlantic Silverside 6 Bay anchovy 4 Group 15 Striped Bass 11.5 9:30 AM Atlantic Silverside Group 9.5 Atlantic Silverside Group 9.5 1		9:56 AM	0		
12:54 PM 0 0.24 9:23 AM 0.88 0.48 9:54 AM 0 0.1 10:36 AM 0.44 0.5 12:55 PM 0 0.4		10:36 AM	0	0.2	
Group #2: 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 Fish-Seine Number Name Length of longest (cm) 9:26 AM 1 Atlantic Silverside 6 Brook Silverside 1 Bay anchovy 4 Group 15 Striped Bass 11.5 9:30 AM 1 White Perch 9.5 Atlantic Silverside Group 9.5		12:07 PM	0		
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12:09 PM 0.44 0.5 12:55 PM 0 0.4 Fish- Seine Number Name Length of longest (cm) 9:26 AM 1 Atlantic Silverside 6 Brook Silverside 1 Bay anchovy 4 Group 15 Striped Bass 11.5 9:30 AM 1 White Perch 9.5 Atlantic Silverside Group 9.5					
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Fish- SeineNumberNameLength of longest (cm)9:26 AM1Atlantic Silverside6Brook Silverside1Bay anchovy4Group15Striped Bass11.59:30 AM1White Perch9.5Atlantic Silverside Group1White Perch9.5			0.44		
9:26 AM 1 Atlantic Silverside 6 Brook Silverside 1 Bay anchovy 4 Group 15 Striped Bass 11.5 9:30 AM 1 White Perch 9.5 Atlantic Silverside Group Inches of the perch Inches of the perch		12:55 PM	0	0.4	
9:26 AM Brook Silverside Group 1 Striped Bass 9:30 AM Atlantic Silverside Group 15 Striped Bass 11.5 9.5 Atlantic Silverside Group	Fish- Seine	Number	Name	Length of longest	
Brook Silverside Group 1 Bay anchovy 4 Striped Bass 9:30 AM Atlantic Silverside Group 1 Bay anchovy 4 Striped Bass 9.5 White Perch 9.5				(cm)	
Group 15 Striped Bass 9:30 AM Atlantic Silverside Group 15 White Perch 9.5	9:26 AM	1	Atlantic Silverside	6	
9:30 AM		1	Bay anchovy	4	
9:30 AM					
Atlantic Silverside Group		15			
Group	9:30 AM	1	White Perch	9.5	
	Atlantic Silverside				
	Group				
		4	Striped Bass	12	

	•			
9:53 AM	1	White Perch	15	
White Catfish Group				
	1	American Eel	10.5	
9:53 AM	1	Striped Bass	YOY	
Chanel Catfish Group		T I I		
Chanci Caijish Group				
11:00 AM	1	White Perch	13	
	1			
Striped Killifish	5	Striped Bass	9	
Group				
11:07 AM	7	Striped Bass	10.5	
Mummichog Group				
12:00 PM	7	Striped Bass	9.15	
Alewife Group		1		
i i i i i i i i i i i i i i i i i i i				
12:45 PM	1	Striped Bass	9	
		Atlantic Silverside	4	
Blueback Herring	1	Atlantic Silverside	4	
Group				
			16	
12:55 PM	3	White Perch	11	
White Perch Group	5	Striped Bass		
			5	
12:55 PM	4	Atlantic Silverside	4.5	
Yellow Perch Group	22	Herring	12.5	
Tellow Teren Group	22	Striped Bass	12.3	
Fish Totals	TOTAL: 63			
FISH Totals	101AL: 03	Diversity: 6		
Macroinvertebrates	Number	Name	Length of longest	
Macroinvertebrates	Number	Name	Length of longest (cm)	
		Name	Length of longest (cm)	
9:26 AM	Number 0	Name		
9:26 AM Brook Silverside		Name		
9:26 AM		Name		
9:26 AM Brook Silverside Group	0	Name		
9:26 AM Brook Silverside Group 9:30 AM		Name		
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside	0	Name		
9:26 AM Brook Silverside Group 9:30 AM	0	Name		
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside	0	Name		
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside	0	Name Blue Crab		
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9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group	0		(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group	0 0 5	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM	0		(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group	0 0 5	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group	0 0 5	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish	0 0 5	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM Mummichog Group	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM Mummichog Group 12:00 PM	0 0 5 2 0	Blue Crab Blue Crab	(cm) 5.5	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM Mummichog Group	0 0 5 2	Blue Crab	(cm)	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM Mummichog Group 12:00 PM Alewife Group	0 0 5 2 0	Blue Crab Blue Crab	(cm) 5.5	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM Mummichog Group 12:00 PM Alewife Group	0 0 5 2 0 0	Blue Crab Blue Crab	(cm) 5.5	
9:26 AM Brook Silverside Group 9:30 AM Atlantic Silverside Group 9:53 AM White Catfish Group 9:53 AM Chanel Catfish Group 11:00 AM Striped Killifish Group 11:07 AM Mummichog Group 12:00 PM Alewife Group	0 0 5 2 0	Blue Crab Blue Crab	(cm) 5.5	

12:55 PM	0				
White Perch Group					
mme i eren Group					
12:55 PM	0				
Yellow Perch Group					
Macroinvertebrate	TOTAL: 13	Diversity: 1			
Totals	101112.10	Diversity. 1			
Tides-	Time	Rising,	Height (cm)	Rate of Tidal	
		Falling,		Change (cm/min)	
		Unchanged			
Group #1	9:15 AM	Group #1	262	-	
	10:19 AM	did not	320		
	11:07 AM	record tide	317		
	12:15 PM	direction	327		
	1:08 PM		360		
Group #2	9:26 AM	Falling	392	-	
	10:01 AM	Falling	401	.257	
	10:46 AM	Rising	399	.044	
	12:20 PM	Rising	433	.39	
<u> </u>	1:20 PM	Rising	450	.378	
Currents	Time	Cm/second	North/South	Flood/Ebb/Still	
Group #1	9:15 AM	6.25	Group #1		
	10:19 AM	3.21	did not		
	11:07 AM 12:15 PM	21.7	record current		
	1:08 PM	26.25	direction		
Group #2	9:26 AM	10.15	South	Ebb	
Group #2	10:01 AM	6.85	South	Ebb	
	10:46 AM	18	South	Ebb	
	12:20 PM	31.5	North	Flood	
	1:20 PM	40.3	North	Flood	
Sediment Cores	Time	Length	Oxid Top	Grain Size	Other Items
		(cm)			
White Perch Group	9:20 AM	7.62	Yes	Abundant: Sand,	H ₂ S smell,
				gravel, pebbles	leaves,
					coal (rare)
Yellow Perch Group	9:25 AM	28.5	No	Abundant: Clay	Oil,
•				Rare: mud, sand,	living
				pebbles	vegetation (rare)
Atlantic Silverside	10:00 AM	14	No	Abundant: Sand	Coal (rare)
Group				Common: Gravel,	
				Pebbles	
Brook Silverside	10:10 AM	17	Yes	Abundant: Clay	Clam shells
Group				Rare: mud, sand,	(rare)
				gravel, pebbles	
Chanel Catfish Group	10:30 AM	6.5	Yes	Abundant: clay,	Brick (rare)
				mud	
				Common: sand (top)	
				Rare: gravel,	
With Care Loc	10.42 43.5	10	NI.	pebbles	H.C. 11
White Catfish Group	10:42 AM	19	No	Abundant: clay,	H ₂ S smell,
				mud Common: sand	leaves (rare),
				Rare: gravel,	oyster shells (rare)
				pebbles	(raie)
				peooles	

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