**Day in the Life of the Hudson River 10/16/14 Data**

**(Salt Front RM 69.5)**

**RIVER MILE 118**

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**40 students 11th -12th grade, 7 adult helpers**

**Latitude – N 42.253830 Latitude – W -73.800476**

**Location:** Hudson River Waterfront Park, City of Hudson, Columbia County

**Area:** 1st dock in thewaterfront propertyused for fishing, marina, picnics, large grassy area, just north of the old quarry site, has a parking lot

**Surrounding Land Use:** 60% urban/residential, 20 % forested, 20% Industrial/Commercial

**Sampling Site:** waterfront with banks altered to include wooden & concrete bulkheads and large riprap on shoreline,

**Plants in area**: 15% water chestnut

**Water depth –** ~ 1 foot

**River Bottom** – muddy, rocky

**Plants in area –** Grass, Water Chestnut, trees

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | ***Time*** | ***Reading 1*** | ***Reading 2*** | ***Comments*** |
| ***Physical*** |  |  |  |  |
| Air Temperature | 9:20 AM  9:28 AM  9:34 AM | 24.4°C  25.5  24.3 | 75.9°F  78  76 |  |
|  | 9:46 AM  10:00 AM  10:15 AM | 23.4°C  23.5  24 | 75.2°F  74.3  75.2 |  |
|  | 10:30 AM  10:37AM | 24°C  23.8 | 75.2°F  74 |  |
|  | 12:05 PM  12:15 PM  12:22 PM | 24.7 °C  23.5  23.2 | 76.46°F  74.3  73.7 |  |
|  | 12:37 PM  12:41  12:50 | 23°C  23.8  25.7 | 73.4 °F  74.8  78.3 |  |
| Cloud Cover | 9:22 AM  >75% | 9:44 AM  >75% | 10:35 AM  >75% | 12:50 PM  >75% |
| Wind – wind picked up during day | **Time**  9:21 AM  9:44 AM  10:30 AM  12:13 PM  12:50 PM | **MPH**  0.4; 1.1; 1.3 m/s  2.0 m/s  3.1 m/s  4.6 m/s  3.1 m/s | **Average**  0.7 m/s | **Direction**  W  SE  SE  NE  ? |
| Weather today | 9:23 AM Rain | 9:44 AM Rain | 12:00 PM Rain |  |
| Weather recently | Rained/pour all night - | Rainy & Windy | Last 3 days humid |  |
| Water | calm |  |  |  |
| ***Water Temperature –*** | 9:54 AM  1 m depth | 19°C  19  19 |  | 19°C |
| Taken in full sun, water still | 10:10 AM  1 m depth | 20 °C  20  20 |  | 20°C |
| Full sun | 10:21AM  1 m depth | 20 °C  20  20 |  | 20°C |
| In shade | 10:36 AM  1 m | 17.1 °C | 62.78 °F | 17.1°C |
| In shade | 10:46 AM  1 m. | 19 °C | 66.20 °F | 19°C |
| In shade | 10:56 AM  1 m | 19.1°C | 66.38°F | 19.1°C |
|  | 12:10 PM  3 m | 19.2 °C  19.2 | 66 °F | 19.2°C |
|  | 12:20 PM  2 m | 19.8°C  19.6 | 67.6 °F  67.3 | 19.7°C |
|  | 12:30 PM  1.8 m | 19.7°C  19.4 | 67.4°F  66.9 | 19.55°C |
|  | 12:40 PM 3 m | 19 °C |  |  |
|  | 12:50 PM 1.5 m | 20°C  19.5  19.75 |  |  |
|  | 1:00 PM 1m | 19.5°C  19.5 |  |  |
| ***Turbidity – secchi–*** | 9:23 AM | 114 cm |  | Yes the water was very turbid |
|  | 9:45 AM | 100 cm |  |  |
|  | 10:30 AM | 100 cm |  |  |
|  | 11:00 AM | 100 cm |  | Chocolate milk look |
|  | 12:48PM | 417 cm |  | Water clear and yellowish |
| ***Chlorophyll*** | 9:23 AM | 0.1 | 10:35 AM | 0 |
|  | 12:00 PM | 0 |  |  |
| ***Chemical*** | **Time** | **Temp** | **DO** | **% sat.** |
| DO | 9:20 AM  9:34 AM | 17.6 C  17.5 C | 8.0  9.3 | 83%  95% |
|  | 9:48 AM  10:01 AM  10:16 AM | 17.7°C  17.7°C  17.8°C | 7.1 ppm  7.3  7.2 | 74 %  76 %  78 % |
|  | 10:31 AM  10:41  10:51 | 17.7 °C  17.8  17.8 | 8.6 ppm  7.3  7.2 | 87%  75%  76% |
| ? | 10:50 AM  11:00 AM  11:12 AM | 17.6  17.1  17.1 | 10.5 ppm  13.3\*  11.6 | 108%  135  105 |
| \*air bubble | 12:05 PM  12:15  12:25 | 17.8 °C  17.7  17.7 | 9.6 ppm  8.1  14.4 | 100%  85  151 \*expect airbubble |
| \*air bubble | 12:35 PM  12:45  12:55 | 17.9°C  17.9  17.9 | 13 ppm\*  12.1  15.3\* | 138%  122  152 \*expect airbubble |
| pH – ***probe was broken*** |  |  |  |  |
| **Salinity** | **Time** | **Total Salinity/conductivity?? But** |  | **Average** |
| ***Meter - conductivity*** | 9:33 AM | 34.0 µs/cm  28.1  28.1 |  | 30.1 µs/cm |
|  | 10:28 AM  10:31  10:35  10:44 | 29 µs/cm  29  28  28 |  | 28.5 µs/cm |
|  | 11:00 AM | 28.7 µs/cm  29.5  29.7 |  | 29.3 µs/cm |
|  | 12:05  12:14  12:23 | 29 µs/cm 29  28 |  | 28.9 µs/cm |
|  | 12:48 PM  12:57 PM | 28.6 µs/cm  29.5 |  | 29.1 µs/cm |
| **Conductivity Meter** | 9:30 AM  9:33 AM  10:38 PM  12:00 PM  12:40 PM | 29.05 us/cm  30 us/cm  28.5 us/cm  29.3 us/cm  28.6 us/cm |  |  |
| ***Fish Catch***  Seine net 20 feet X 4 ft., 1.4 inch mesh | ***Time*** | ***Species*** | ***number*** | ***Size of largest*** |
| ***Diversity 1***  ***Total Catch 2*** | 9:30 AM | *American Shad* | *2* | small |
| ***Diversity 0***  ***Total Catch 0*** | 10:15 AM | *0* | *0* |  |
| ***Diversity 0***  ***Total Catch 0*** | 11:00 AM | *0* |  |  |
| ***Diversity 1***  ***Total Catch 1*** | 12:00 PM | *American Shad* | *1* | 4 inch |
| ***Diversity 1***  ***Total Catch 22*** | 1:00 PM | *American Shad* | *22* | 3.5 inches |
|  | **For the Day** | ***Total Diversity 1*** | ***Total Catch 25*** |  |
| ***Macro invertebrates*** |  |  |  |  |
| Rotation #1  9:30 AM | Rotation #2  10:15 AM | Rotation #3  11:00 AM | Rotations #4 12:00 PM\*\* | Rotation #5  1:00 PM |
| Unknown protist | Algae 20+  Red algae | Algae 20 +  Eucopepoda 3  Daphnia 1 | Daphnia (2)  2 copepods | Stylaria (worm)  Diatoms  Scenedusmus  Scud |
| ***Tides*** | 9:15 AM  9:24 AM  9:32 AM  9:38 AM | 45cm  47.5 cm  49 cm  50 cm | Set  Rising  Rising  Rising | *Tidestick Set* |
|  | 9:45 AM  9:50 AM  9:55 AM  10:00 AM  10:05AM  10:10 AM  10:15 AM | 52 cm  54 cm  56 cm  58 cm  57 cm  56 cm  55cm | Rising  Rising  Rising  Rising  Falling (maybe waves action) |  |
|  | 10:30 AM  10:37 AM  10:45 AM  10:53 AM  10:58 AM  11:03 AM  11:08 AM | 60cm  60 cm  61 cm  61 cm  59 cm  60 cm  60 cm | Appears to be holding steady for this period |  |
|  | 12:05 PM  12:12 PM  12:18 PM  12:26 PM  12:30 PM | 42 cm  42 cm  39 cm  37 cm  34 cm | Falling |  |
|  | 12:40 PM  12:25 PM  12:50 PM  12:56 PM  12:59 PM | 35 cm  33 cm  29 cm  31 cm  27 cm | Falling |  |
| ***Currents*** | **Time** | **Cm/30 secs** | **Cm/sec** | **Kts - E/F/S** |
|  | 9:19 AM. |  | 19.5 | 0.37 |
|  | 9:26 AM |  | 11.7 | 0.23 |
|  | 9:32 AM |  | 18.28 | 0.35 |
|  | 9:49 AM |  | 32.3 | 0.6 |
|  | 9:56 AM |  | 28.4 | 0.5 |
|  | 10:15 AM |  | 7.3 | 0.14 |
|  | 10:30 AM |  | 7.5 | 0.197 |
|  | 10:37 AM |  | 8.1 | 0.158 |
|  | 10:45 AM |  | 4.2 | 0.082 |
|  | 10:53 AM |  | 2.79 | 0.059 |
|  | 12:09 PM |  | 8.12 | 0.159 |
|  | 12:23 PM |  | 5.46 | 0.107 |
|  | 12:29 PM |  | 12.2 | 0.239 |
|  | 12:30 PM |  | 18.2 | 0.36 |
|  | 12:40 PM |  | 20.7 | 0.402– Flood |
|  | 12:47PM |  | 24 | 0.461 – Flood |
|  | 12:51 PM |  | 11.7 | 0.227 Flood |
|  | 12:57PM |  | 6.7 | 0.130 - Flood |
| ***Core Sample*** | ***Length/Grain size/H2S*** | ***Abundant*** | ***Common*** | ***Rare*** |
| 9:25 AM | 4-5 inches – oil and oxidized top | Clay, Mud, Sand, Gravel, Pebbles, macroinvert, brick, slag, living things | Wood, Shells | Leaves, coal, zebra mussels |
| 10:45 AM | No length - Oxidized top | Clay, Mud |  | coal |
| 12:10 PM | 2 inches | Mud | Gravel, Pebbles | Brick, Living Vegetation |
| 12:16 PM | None listed | Clay |  | Mud, gravel, pebbles |
| 12:40 PM | None listed | Clay | Mud | pebbles |
| ***Traffic - commercial*** | ***Time*** | ***Name*** | ***Color*** | ***Direction/Loaded or Light*** |
|  | 10:32 AM | Mobile Pearl | Red & Black | Northbound, loaded |
|  | 10:37 AM | Riverkeeper | White | North |
|  | 11:16 AM | Bouchard | Black & Red | North/loaded |
|  | 11:45 AM | Barge | Black | North/light |
|  | 12:20 PM |  | Black | South |
|  | 12:31 PM | Barge | Red & Black | North/loaded |
|  | 12:53 PM | Pretty Lamb | Black & Red | South/ light |
| ***Recreational*** | 10:10 AM | sailboat | White | southbound |
|  | 10:25 AM | Sadie | Blue | Docked/light |
|  | 10:37 AM |  | White | southbound |
|  | 10:46 AM |  | White | southbound |
|  | 12:21 PM |  | Black | Southbound/loaded |
| ***Other Items*** | Water chestnut seeds | Ore pieces in rocks | Clay | Bald eagle, seagulls, bees |