

HUDSON RIVER ALMANAC for OCTOBER 18, 2011

A DAY IN THE LIFE OF THE HUDSON RIVER

Compiled by Steve Stanne, Hudson River Estuary Program Education Coordinator
New York State Department of Environmental Conservation

<<<< OVERVIEW >>>>

This special Hudson River Almanac offers a snapshot of the ninth annual "Day in the Life of the Hudson River," during which students sampled the Hudson from its non-tidal reaches above Troy to the Lower Bay of New York Harbor. Over 3,200 participants visited 64 sites, learning about their piece of the river and - by sharing their data online - putting it in the context of the entire system. The entries in this journal came from students, classroom teachers, environmental educators, and "runners" who visited multiple sites to document activities and pick up samples for later testing.

<<<< HIGHLIGHT OF THE DAY >>>>

Schodack Island, HRM 133: A Day in the Life was anxiously awaited by all. As the Doane Stuart School students arrived there was much buzz about all the cool things we would be doing. The children had not done the program before and loved every minute of it. I, having been there for several years, was a little sad. There were so many signs of the flooding from Tropical Storm Irene - dried cracked mud where there used to be grass and plants. When we tried to seine we could only walk down the boat ramp about eight feet before our waders got mired in mud above our ankles. On the bright side, we got a 6½" striper that thrilled the kids and a net full of spottail shiners - proof that nature recovers. As the day ended and the kids left I was packing up and looked down to see a monarch butterfly on my clipboard ... and the smile returned!

- Dawn Baldwin, Children's Museum of Science and Technology

<<<< NATURAL HISTORY NOTES >>>>

Upper Works Trailhead, Adirondack High Peaks: I woke up at 12:20 AM in the trailhead parking lot near where the river is born. It was full and fast, roaring all night out of the mountains, like the powerhouse it is through the Troy Dam and down the Hudson Valley.

- Doug Reed, Hudson Basin River Watch



Sampling at Upper Works trailhead

Corning Preserve, Albany, HRM 143: 4th graders reflect on A Day in the Life of the Hudson River:

Maura: "I learned that the Hudson River starts in the Adirondack Mts. and ends in the Atlantic Ocean."

Chrysolyte: "When we went to our next station, Karen taught us how to see how fast currents were going. We threw in an orange because it can float and it is bright so we can see it. The orange took 25.3 seconds to get from one place to another (25 ft)."

Nihara: "I learned about different types of fish, water chemistry, and we got to use a turbidity tube to check how clear the water was."



Using fish key at Albany

Matthew: "During the Day in the Life of the Hudson River, I learned that there are over 200 species of fish in the Hudson River. I observed a natural shoreline on the other side of the river."

Alexis: "My favorite part of the experience was when we pulled fish out of the river with a seine net."

Vivian: "There was very little salt in the water."

- Ms. Aiello's class and Mrs. Carras' class, Montessori Magnet School, Albany

Cohotate Preserve, Athens, HRM 115: We had 37 students from Coxsackie-Athens and Cairo-Durham school districts at Cohotate. Although the ice house site here had been under water after tropical storm Irene, the only sign of the flooding was the large pile of woody debris on the shoreline of our fishing spot, which made it challenging to pull a net during higher tide conditions. The most persistent indication of this fall's torrential rains was the turbidity of the water. I had conducted an educational program on October 12, when there was a lot of woody debris and plant matter in the water and the seine net was full of water chestnut seeds. On October 18, the reading from our long sight turbidity tube was 12.5 centimeters [cm]. Just a few days later, on October 18, the water was placid and free of debris and the reading from the turbidity tube was around 37 cm! Quite a change.

- Liz LoGiudice, Cornell Cooperative Extension of Greene County

Esopus Meadows to Ulster Landing County Park, HRM 87-96: All groups on my Ulster County run appeared to be having a great day, although I think a few 'fashionista' teenage girls found the weather a bit chilly for tights and miniskirts.

- Nancy Beard, Hudson River Estuary Program

Ulster Landing County Park, HRM 96: A cloudy, breezy morning gave way to warming sunshine by noon as Kingston students exulted in their monitoring tasks. Surprisingly, extensive mud showed up in each seine pull, forcing the catch (mostly shiners) to struggle in the muck. This is a new phenomenon for this site, which is dominated by silt and sand. The day was highlighted by a juvenile bald eagle flying north and a migrating sharp-shinned hawk migrating south. Local cormorants, Canada geese and herring gulls made their appearance over the course of our "Day in the Life" investigation - new experiences for most of the students, who proclaimed it an "excellent day"!

- Dixon Onderdonk, Kingston High School



[Other sites besides Schodack Island and Ulster Landing County Park reported a layer of "new" mud on boat ramps or in shallows. Eroded from the Hudson's watershed by runoff from the heavy rains of tropical storms Irene and Lee, it settled on the bottom in the less turbulent waters of the mainstem.]



Kingston Point Beach, HRM 92: While collecting data at our respective stations we noticed a juvenile and a mature bald eagle tumbling in flight overhead. Students jumped to don binoculars as we witnessed the seemingly playful behavior. The adult then perched high in the canopy of a tree near the river's edge as the juvenile delighted our large group of citizen scientists, soaring, banking, and gliding not 75 feet overhead.

- Julie Noble, Forsyth Nature Center

Waryas Park, Poughkeepsie, HRM 76: Kids (and adults returning from previous Days in the Life) definitely noticed the debris/pollution along the shore. The 45' tree lying in the river was hard to miss too - all evidence of Irene/Lee and heavy rains since! Our fish sampling showed diversity - it was very exciting to see striped bass, yellow perch, spottail shiner, herring galore, and two nice-sized eels from the eel pot! Observing the orange flowing with the current was a surprise to most students!

- Lisa DiMarzo, Mid-Hudson Children's Museum

Riverfront Park, Beacon, HRM 61.2: It was a beautiful morning as teachers and students from Valley Central Middle School (the middle school I attended!) arrived. Four of my past middle school teachers were there to help 8th grade biology classes work through their stations, investigating the habitats and organisms of the Hudson. Introduced as Mr. Meyer, I told the students not to call me that; then, doing the calculations in my head, I realized that it had been over 15 years since I was in their shoes. The students and teachers did a great job; it was very cool to give back to my teachers in this way, and maybe show them that they played an important role in interesting at least one student in biology.

- Andrew Meyer, Hudson River Estuary Program

Long Dock, Beacon, HRM 61E: Findings from fourth graders: Our river was healthy for fish life. It was an ebb tide. We used a 30 foot seine net and caught many herring and a golden shiner and an awesome water scorpion. There was a flock of Canada geese, gulls, a heron, and many beautiful monarch butterflies. We really liked thinking about being one small group among dozens of groups of kids learning about the river and collecting data all at the same time.

- Tery Udell's students, Forrestal Elementary School, Beacon

[The water scorpion is actually an insect in the true bug family. It grabs prey with a pair of forelimbs that resemble a scorpion's pincer-tipped forelegs (though the water scorpion's arms do not have pincers). Its long tail siphon resembles a scorpion's venomous tail but serves as a breathing tube. Adult water scorpions are air breathers and use their tail siphon to keep a bubble of air filled on their belly. Measuring two inches long, this water scorpion pushed the upper size limit for this bug!]

In mid-morning I witnessed a fond farewell as Forrestal Elementary School students released a foot-and-a-half long American eel back into the Hudson. The students got a quick lesson about the oddities of eels' life cycles, and gently felt its slimy skin with its tiny scales, agreeing it felt like cold cooked pasta. We took lots of pictures. I think by the time they waved goodbye to the eel and sent it back on its way down the Hudson, some of the students were pretty close to the little spaghetti.

- Andrew Meyer, Hudson River Estuary Program



Tom Lake with spottail shiners at Cornwall-on Hudson

Donahue Park, Cornwall-on-Hudson, HRM 57: With fourth graders from Willow Avenue Elementary in Cornwall on hand, we pulled our seine ashore, burgeoning with small fish, mostly young-of-the-year blueback herring 55-62 millimeters [mm] long. There was a mix of other species including striped bass (70 mm), white perch, spottail shiners, white sucker, tessellated darters, and bluegill sunfish. The water temperature was 62 degrees F and the salinity was not measurable. We made a monarch count; by day's end we had eleven but likely missed several more.

- Chris O'Sullivan, Libby Young, Tom Lake

[Young of the year - abbreviated YOY - are fish born this year, most in early summer. Their abundance in fall is one of the reasons we schedule Day in the Life for this season. Finding them in our seines reminds us that the Hudson offers critical nursery habitat for these youngsters, feeding and sheltering them at one of the most vulnerable points in their life cycles.]

Steamboat Dock, Verplanck, HRM 41: As the morning started off a bit chilly, I thought finding student volunteers to retrieve a sediment core sample would be difficult. However, an eager group of students immediately volunteered. Despite their initial excitement, they entered the water somewhat apprehensively and began by taking the first core sample in as shallow water as possible. Within five minutes that same group of students had completely embraced the chilly water as they waded out further into the river. After collecting their third core sample, they came ashore drenched from head to toe, asking through chattering teeth if I needed any more samples! Their excitement for science was great to experience on this wonderful Day in the Life of the Hudson River.



A core sample from Verplanck

- Laura Heil, Student Conservation Association Hudson Valley Corps, and Bob Connick's Mahopac High School students

Bowline Point, Haverstraw, HRM 37: The river was warmer (63 degrees F) than the air (53), so it felt good to slip into the water for our Day in the Life program. Students from Nanuet High School took notes as senior Anna Gremli hauled the deep end of our 85-foot seine out into Haverstraw Bay. With a

salinity reading of about 0.2 parts per thousand [ppt] on our pen meter, expectations of catching exotic marine species were limited. As our net unfolded we were delighted to find seaward-bound YOY blueback herring (60-65 mm), American shad (85-90 mm), and striped bass (70-75 mm). As a reminder of the lower-than-usual autumn salinity, we also caught YOY gizzard shad (80-85 mm) - a fish more common in upriver freshwater reaches.

- Chuck Barone, Tom Lake

[The U.S. Geological Survey located the salt front at HRM 35.7 on Day in the Life 2011.]



Day in the Life at Ossining

Louis Engel Waterfront Park, Ossining, HRM 32: Ossining High School had a glorious morning at Louis Engel Waterfront Park. By the time I arrived, students and teachers were hard at work seining, sampling, laughing, and videotaping. We tested salinity using a plastic hydrometer, and it was hard to tell if readings were low (one ppt) or really low (closer to zero)! The likely proximity of the salt front was suggested by our fish catch: Atlantic silversides (which prefer salty or brackish water) and spottail shiners (which prefer freshwater) came up in the same hauls.

- Chris Bowser, Bridget Bauman, Artie Carlucci

Nyack Beach State Park, HRM 31: Many Blue Rock School children were back for a second year, making the day rich and dimensional as they built on their 2010 experiences. Irene had rearranged things: we had to work around large driftwood debris on the beach and in the water when seining. Core sampling brought up gravel mixed with silt. The clay/silt that we cored last year to make art was buried down below - we twisted our toes and worked our feet down to find it. This year's art/science station played off of the river's salinity (970 parts per million chloride). Students worked with salt and watercolors, watching the salt's interaction with pigments on their wet paper. They considered how fish have to adapt to migrate back and forth between salt and fresh water. Awareness of the shifting salt front and where fresh and salt water originate was also tied in. As teachers, we join all the day's leaders in loving Day in the Life for the pure joy it brings of seeing children step into the water in waders for the first time. We know this a life-changing experience for them. They immediately strike up a new relationship with the river - from this they will forevermore know the river differently.

- Laurie Seeman and Joanna Dickey, Strawtown Studio

When I went to the Hudson River, I learned that the murkiness of the water is not pollution; it is actually some nutrition for the fish. I was so surprised that the tides came up high so quickly, and the wind got really strong. I enjoyed seining because my group caught four fish! I liked it because I loved the feeling when the waders kind of squeezed my body - I felt like I was on the moon. I also enjoyed the art because we used salt and added drops of paint; it blended together and looked cool. I liked the texture of the salt. I found Chemistry and the Physical stations challenging because of all the big and fancy words. Even though some things were challenging it was still fun to go and help the environment.

- Ashley, 5th/6th grader, Blue Rock School



Painting with watercolor at Upper Nyack

Mathiessen Park, Irvington, HRM 25E: Upon arriving at Mathiessen Park in Irvington, I was told that they had caught nothing last year. With that, despite many unsuccessful hauls, we persevered. Surprisingly we were rewarded with eight blueback herring, seven Atlantic silversides, and even an immature female blue crab! A great start to a lesson on Hudson River fish and invertebrate ecology for Irvington's Main Street School fifth graders!

- Rachel Lowenthal, Student Conservation Association Hudson Valley Corps

[Based on 2011 data received to date, blue crabs were few and far between compared to past years.]

Piermont Pier, HRM 25W: Tappan Zee, Pearl River and Clarkstown South high school students spent the day as one of 10 different fish species moving through the various sampling stations. Would they survive with the salinity, oxygen or pH levels they encountered? Would they be eaten by other fish pulled up in the net, and would they have enough to eat themselves with the assortment of biota we pulled up in the plankton pump and seine? The students found that all but one of their species was actually pulled from the river that day between the anglers on the pier and our seining. It was fun to reflect that all through the estuary these same quests for survival are ongoing for river species.

- Margie Turrin, Lamont-Doherty Earth Observatory; Tom Mullane, Jo Mosella & Eileen McCaffrey, Pearl River High School; Jen Mazza, Clarkstown South High School; Ellen Pollina & Pat Kilkelly, Tappan Zee High School

Kinnally Cove, Hastings-on-Hudson, HRM 22: The day was picture perfect! The Hastings students were thrilled to be outside, exploring the river and enjoying the sunshine. The favorite activity was putting on the waders and getting in the water to find fish. Other students commented that they liked the chemical analysis because they felt like real scientists. Overall the day was a great success!

- Melissa Shandroff, Hastings-on-Hudson High School

Mt. St. Vincent College, Riverdale, HRM 17: After a long walk from the train station, the scene at the College of Mount Saint Vincent was sheer delight. Dr. Grove's college students worked alongside high schoolers from Manhattan's Frederick Douglass Academy. Teacher Jeanine Brown led a group of students in measuring dissolved oxygen, while several other students constructed a strange device of branches and string to attempt to recover a minnow pot trapped by the rising tide. The creature feature was a small male mud crab.



Mud crab caught at Riverdale

- Chris Bowser, Jeannine Brown, Dr. Pat Grove

Englewood Boat Basin, HRM 13: Ramapo College's Meadowlands Environment Center staff set up three learning stations on the shore, competing for space with logs, lumber, and other flotsam swept into the river and onto the beach, in large part by tropical storms Irene and Lee. Among the fish caught at the seining station were a number of YOY river herring, usually an infrequent catch in the lower estuary during Day in the Life. The huge volumes of fresh water poured into the Hudson during the storms had given these young fish an express ride on their seaward migration. They didn't look ready for the rigors of life in the ocean.

- Steve Stanne, Hudson River Estuary Program



On the beach at Englewood

Inwood Hill Park, Harlem River, Manhattan: One of the last groups of the day was Ms. Ramirez's afterschool group from Marble Hill. They walked across the Harlem River on Broadway and into Inwood Hill Park at Manhattan's northern tip. When Steve asked for volunteers to seine with him in the cove, the students jumped at the chance, oblivious to their neckties and school clothes. Several hauls revealed a variety of species, including white perch, YOY striped bass, Atlantic silversides, lots of mummichogs, and three gizzard shad, which the ranger said they hadn't seen there before. It was a perfect place to wrap up a great day, with the setting sun lighting up the trees, the Henry Hudson Bridge over the Spuyten Duyvil, and the Bronx neighborhoods across the Harlem River.



Collecting a water sample at Inwood Hill Park

- Chris Bowser, Steve Stanne, Beth Roessler, Ranger Sonny Carrao, Olivia Ramirez

Pier 45, Hudson River Park, Manhattan, HRM 3: Kindergarten and first grade students from PS 3 walked to Hudson River Park's Pier 45 for a slightly chilly and rainy start to their Day in the Life of the Hudson. They didn't seem fazed by the cold (14.5 degrees C) as they measured dissolved oxygen, pH, and salinity with Shino Tanikawa of the New York City Soil and Water Conservation District. My favorite moment was when Shino held up a device and asked the young students "What is this?" They responded in unison, "A hydrometer!" "And what does it measure?" "Salinity!"

- Sarah Mount, Shino Tanikawa, Susan Solar



Pier 40, Hudson River Park, Manhattan, HRM 2: Students from Trevor Day School joined River Project educators to sample the river at Hudson River Park's Pier 40. The third graders rotated through stations - at one they looked at some of the fish River Project has caught locally and kept for education programs, including oyster toadfish, a horseshoe crab, and even a seahorse!

- Sarah Mount, Chris Anderson, Karen Johnson

Gantry State Park, East River, Queens: Students from Baruch College Campus High School (Manhattan) were the station leaders for Day in the Life water monitoring conducted by elementary students from PS 78 in Long Island City. Teachers and students worked together to plan and implement this unique approach to Snapshot Day.

- Kim Estes-Fradis, New York City Department of Environmental Protection

[High schoolers and college students in teacher training programs helped teach younger students at a number of sites including Henry Hudson Park in Bethlehem, Norrie Point in Staatsburg, Waryas Park in Poughkeepsie, Croton Point Park, and Pier 45 in Manhattan.]

Brooklyn Bridge, East River, Manhattan: A beautiful day beneath the Brooklyn Bridge in Manhattan. I arrived to gather samples from Ella Baker School students and faculty and the able staff from the Lower East Side Ecology Center. The middle schoolers were engaged in learning about the estuary, joyful at being outside near the water on a sunny day. Participants admired a shining young striped bass brought in by the net. As might be expected, some more exotic finds were noted in our urban estuary too, the most curious being a coconut floating in on the morning tide. "Not from around here!" (although it was anybody's guess how and where the coconut got into the water). As the group set out for the school buses, I noticed that more than a few of the kids would be spending at least part of the rest of the day happily drying out from this morning's watery adventure.

- Nordica Holochuck, New York Sea Grant

Governor's Island, Upper Bay of New York Harbor: A ferry ride took me to Governor's Island to meet with an AP class from the Harbor School. The water testing pros split into stations to sample Upper New York Bay on what had turned into a beautiful sunny day. They recorded an average of 6.5 mg/L dissolved oxygen, 16 ppt salinity, 19 degree C water temperature, and 7.3 pH.

- Sarah Mount, Roy Arezzo, Tizoc Gomez



Valentino Pier, Upper Bay of New York Harbor, Brooklyn: Valentino Park was busy during Day in the Life 2011. NY/NJ Baykeeper and PS 230 teamed up and seined the beach, catching only Atlantic silversides - nearly 50 in the first early morning seine, but fewer each pull as the day went on. The pier held half a dozen local anglers, some working up to four poles at a time. Many youngsters in our group, avid anglers themselves, were delighted to see fish after fish reeled in. A school of bunker [Atlantic menhaden] had come in and were jumping out of the water trying frantically to escape hungry striped bass and bluefish. One fisherman caught a three-foot-long striper!

- Katie Mosher-Smith and Kerstin Kalchmayr, NY/NJ Baykeeper

<<<< ABOUT A DAY IN THE LIFE OF THE HUDSON RIVER >>>>

"A Day in the Life of the Hudson River" is organized by DEC's Hudson River Estuary Program, with assistance from the Lamont-Doherty Earth Observatory of Columbia University. The event is held in conjunction with National Estuaries Day, which celebrates these remarkably productive and valuable ecosystems. Many environmental education centers along the river join in the effort, partnering with classroom teachers to help students better understand their local piece of the Hudson and then share their experiences and data to gain wider perspective on the entire ecosystem. For more information about "A Day in the Life," visit <http://www.ldeo.columbia.edu/edu/k12/snapshotday>.

<<<< HUDSON RIVER MILES >>>>

The Hudson is measured north from Hudson River Mile 0 at the Battery at the southern tip of Manhattan. The George Washington Bridge is at HRM 12, the Tappan Zee 28, Bear Mountain 47, Beacon-Newburgh 62, Mid-Hudson 75, Kingston-Rhinecliff 95, Rip Van Winkle 114, and the Federal Dam at Troy, the head of tidewater, at 153. Entries from points east and west in the watershed reference the corresponding river mile on the mainstem.

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National Ocean Service tide predictions: <http://tidesandcurrents.noaa.gov/tides11/tpred2.html#NY>

Tidal current predictions: <http://tidesandcurrents.noaa.gov/currents11/cpred2.html#NY>

Information on the movements of the salt front in the Hudson estuary is available from the U.S. Geological Survey at http://ny.water.usgs.gov/projects/dialer_plots/saltfront.html.

For real-time information on Hudson River weather and water conditions from eight monitoring stations, visit the Hudson River Environmental Conditions Observing System website at www.hrecos.org

Information about the Hudson River Estuary Program is available on DEC's website at <http://www.dec.ny.gov/lands/4920.html>