

Hempstead Harbor Water-Monitoring Report, July 26, 2012

Below is a copy of the water-monitoring report update for Hempstead Harbor covering the water-quality-sampling dates through July 25, 2012. The narrative and data are provided by:



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The 2012 water-monitoring season for Hempstead Harbor began on April 17 with a reconnaissance trip to check out the condition and accessibility of monitoring stations. Because of the mild winter, we expected to see the usual osprey nests completed earlier than usual, but that was not the case—the ospreys were still in the process of finishing the work. The blue sailboat that had become an osprey nesting site over the last several years was moved to the western shore of the lower harbor and remained unoccupied. The bulkhead and access ramps for the new ferry terminal in Glen Cove Creek had been completed, and work had been started to repair the bulkhead and building at Steamboat Landing. Dredging of only a small section of Tappen Marina had been completed in the spring, but repair and dredging of the boat ramp by the Tappen Marina pier had been started and completed before the opening of the 2012 beach and boating season. Work was also completed at the boat ramp at Bar Beach, and that was reopened on May 17.

Because of delays in reconditioning of electronic equipment, water-sample collection for bacteria only was conducted on May 16 and 23. Full water-monitoring surveys began on May 30. Up to 18 stations are monitored regularly, depending on tidal cycle and weather conditions. Stations CSHH #1-7 extend from the head of the harbor, near Bryant Landing, to Bell 6 near the mouth of the harbor; stations CSHH #8-13 extend from the Glen Cove STP to the head of the creek; and stations CSHH #14, 14A, 15, 15A, and 15B were established to monitor flows from Scudder's Pond and the Powerhouse Drain subwatershed, located on the eastern shore of the harbor. (We incorporated two other stations into the program—CSHH #13A and 13B—located at the head of Glen Cove Creek, but these stations are monitored less frequently and for bacteria only to try to discern differences in bacteria levels of samples that are collected directly from the 4' Nassau County outfall that drains Cedar Swamp Creek (#13A) and the dogleg at the head of Glen Cove Creek (north side) (CSHH #13B) that now drains most of the water from Mill Pond. Both stations can be accessed only at peak high tide.)

Access to CSHH 14 and 14A (adjacent to the power plant in Glenwood Landing) may be limited because of work to relocate powerhouse transmission lines and the impending demolition of the large brick building and smoke stacks that have been part of the landscape on the eastern shore of the lower harbor since the early 1900s.

Measurements are recorded for water temperature, salinity, DO, and pH for each station at a half meter below the surface and then in one-meter increments to the bottom. Turbidity is being monitored again this season at two depths—half meter below surface as the first reading and at Secchi-disk depth as the second reading.

Highlights for sampling dates through July 25 follow.



A boat owner at Tappen Marina was surprised to find this nest in the side compartment of his boat on June 6, 2012; the mallards evidently realized their mistake and decided to abandon ship (photos by Carol DiPaolo)

MAY

Our first full survey was conducted on May 30 for 5 upper harbor stations only (outgoing tide); we collected bacteria samples at 12 stations. As mentioned above, we collected bacteria samples only on May 16 and 23.

Rain, Temperature, and DO

Although the preceding months were unusually dry, worries of a drought disappeared by the end of May when the total **rainfall for the month** reached 146 mm (exceeding the May 2011 total of 138 mm).

Air temperature ranged at 22-25°C during the monitoring period. **Water temperature** was at about 20°C at the surface and 17-18°C at the bottom for midharbor stations with slightly warmer temperatures in Glen Cove Creek (about 21°C at the surface and 19-20°C at the bottom). **DO** was at supersaturated levels at the surface at most stations and ranged from about 5-7 ppm at the bottom.

Bacteria Levels

The only exceedances in bacteria levels for May monitoring dates occurred at Glen Cove Creek stations on May 16 and 23, following rain events. The exceedances were not consistent for the same indicator organism, and this has been observed previously. (For example, results for a sample taken at one station may have a CFU count that exceeds standards for fecal coliform but a CFU count for enterococcus that is extremely low.)

Color and Clarity

Water color was judged to be a normal green throughout the harbor. Secchi depth ranged from 0.75 m to 1.3 m for the stations monitored and turbidity at these depths ranged from 6.06 NTUs to 1.39 NTUs (respectively).

Observations

Wildlife

The birds we noted while sampling included 1 cormorant, 11 ducks, over 6 dozen Canada geese, 2 hooded gulls, 3 ospreys, and 8 swans.

Large schools of bunker were noted throughout the harbor and were present during the following weeks. We had heard reports of good fishing for striped bass and saw the remains of two filleted bass in Tappen Marina. Local fisherman Rich Boehm reported catching a *sand shark* near the mouth of the harbor on May 26:

Went out early this morning. Caught another sand shark at the mouth of the harbor. No fish until we went to Week's Point where my friend caught a 16 lb bass while trying to snag a bunker. The bass hit the snag hook. There was a mantis shrimp in the belly when I cleaned it. There are lots of big bunker around. Paul got about a dozen bluefish between 8-13 lbs on Friday night.

Striped Bass Survey

As part of the NYS DEC's annual striped bass study for the NYS marine district, DEC crew members were seining in Hempstead Harbor on May 22. NYS DEC marine biologist Julia Socrates reported that the species the crew saw that day included:

*northern pipefish
Atlantic silversides
killifish sp.
summer flounder
YOY winter flounder
tautog
mud crabs
sea stars*

*grubby sculpin
seaboard goby
Asian shore crab
calico crab
spider crab
bay anchovy
horseshoe crabs*



*Diamondback terrapin below outfall north of Tappen Pool.
(photos by Carol DiPaolo, 6/20/12)*



The epitoke (reproductive) stage of a sandworm.

JUNE 6, 13, 20, 27

June 6: High tide, 1:23 PM; incoming tide for full survey at 5 upper-harbor stations and collected bacteria samples at 12 stations; calm—no wind.

June 13: High tide, 7:43 AM; an outgoing tide at start of sampling; full survey at 10 stations and collected bacteria samples at 19 stations; wind E 3-5 kt and then N 3-4 kt.

June 20: High tide, 12:31 PM.; incoming tide for survey at 5 stations; collected bacteria samples at 12 stations; calm—wind NW 2-4 kts.

June 27: High tide, 5:16 PM; outgoing tide; full survey at 5 stations; collected bacteria samples at 11 stations (no access to #14A, near power plant); wind NW 3-7 kt.

Rain, Temperature, and DO

Total rainfall for June was 175.5 mm (compared with 127.5 mm for June 2011). We had 2.5 mm of rain within 24 hours of the June 6 water-monitoring survey and 9 mm within 48 hours; 44 mm within 24 hours of the June 13 water-monitoring survey and 55.5 mm within 48 hours; and 13 mm of rainfall within 48 hours of the June 27 water-monitoring survey. **Air temperature** ranged at about 17-20°C, 21-23°C, 27-30°C, and 21-23°C on June 6, 13, 20, and 27, respectively, during the monitoring period. **Water temperature** at surface was 19°C, 20°C, 21°C, and 21-22°C for June 6, 13, 20, and 27, respectively, and at bottom was 18-19°C for June 6 and 13 and 20-21°C for June 20 and 27. **Bottom DO** varied widely, particularly between midharbor stations and stations within Glen Cove Creek. On June 6, bottom DO was above 4 ppm for all stations, but 6-7 ppm at CSHH #1-3 (deeper water). On June 13, bottom DO was at 4-6 ppm for CSHH #1-8 and 3.6 ppm at CSHH #13 (head of Glen Cove Creek). On June 20, bottom DO levels varied among the five stations tested, with levels ranging at about 4-7 ppm. On June 27, bottom DO was about 4-7 ppm for CSHH #1-3; at one station, CSHH #13 at the head of Glen Cove Creek, DO measured just under 3 ppm (hypoxic). Surface DO levels varied widely for the June monitoring dates, reaching supersaturated levels at some stations on June 20 (see attached spreadsheet for weekly data).

Bacteria Levels

On June 13, exceedances in bacteria levels occurred at all 19 stations tested—for one or both indicator organisms—following a heavy rainfall. Stations that are by outfalls and susceptible to higher bacteria levels had exceedances on other monitoring dates in June—CSHH #10 (on June 27), #13 (on June 20, 27), and #14A, #15A, #15B (on June 20).

Water Color and Clarity

On all four survey dates in June, water color was judged to be a normal brown or green, although on June 20, the water at Tappen Marina appeared to be an abnormal reddish brown (a plankton sample was collected but has not yet been analyzed). Secchi depths varied widely among stations, reaching 1.5 m on June 6, 13, and 20 at some stations and falling as low as 0.3 m at some lower harbor stations on June 20. On June 27, Secchi depth was more consistent among stations—1-1.2 m.

Observations

Wildlife

No comb jellies were noted on any of the June monitoring dates. The usual variety of birds we see around the harbor were observed on all monitoring dates in June, and they included cormorants, mallards, egrets, and Canada geese (large numbers and mostly at the beaches—North Hempstead Beach Park and Tappen Beach), ospreys, swans, terns, herons, as well as a belted kingfisher.

There were some striking events that occurred during the June water-monitoring surveys. On June 6, after we completed the survey, [a boat owner at Tappen Marina reported finding a nest and eggs in the side compartment of his boat](#); two mallards had pulled threads from the carpeting from the bottom of the compartment, added some down feathers, deposited 8 eggs and then abandoned them. The ducks were seen nearby on the dock near the boat slip.

On June 20, as we started out from the dock at Tappen Marina, we noticed a few of the bright red and green [epitokes—the reproductive stages of the sandworms](#)—swimming at the surface. The females shed their eggs in light, milky clouds (which were also seen in the marina) and the males release their sperm. This is an annual event that usually occurs in early to mid-July in Hempstead Harbor, within two to three days on either side of a new or full moon. As we traveled to other stations in the harbor, we saw hundreds of these worms swimming so quickly at the surface that they created their own little wake. Fishermen often refer to these as cinder worms. We received reports that they were also seen in Oyster Bay and even Montauk at about the same time—within a day or so of the new moon.

On June 27, while collecting the first sample of the morning at the outfall just north of Tappen Pool, I was surprised to see a [large diamond back terrapin](#) (about 12 inches long) in the shallow water.

Fishing Report

The summer of 2012 was off to a great start for recreational fishing. It was amazing to see *so many large schools of bunker* around the harbor so early. They were often observed finning at the surface. Reports from local fishermen described lots of striped bass catches and more *sand sharks* near the mouth of the harbor. On June 20, Paul Boehm reported:

I went out last night and got a sand shark. Paul got 4 bass 12-16 lb range the night before.

The shark was about 3 ft long and was caught in about 50 ft of water west of Matinecock Point. On June 22, local fisherman Paul Boehm reported:

Yep, tons of bunker around, and they are consistently very large. Been getting a lot of bass, all very healthy looking, thick-bodied fish. So much food around I'm not surprised. Haven't caught a lot of blues this year which is strange as last year was consistently picking up giant blues (8-14lbs) at Execution [the light off Sands Point]. Usually I have to switch to wire leaders by this time of year to avoid bluefish cutoffs. Other species I'm running into are a lot of sea robins and some dogfish (also big specimens >3 ft). The ospreys must be fat and happy.

On June 22, Pete Emmerich, member of the Hempstead Harbor Anglers Club, reported:

Ask any local fisherman, we have never seen so much bunker in Hempstead Harbor as we have this year. We have been so lucky. What has been very strange is the amount of bunker finning. We don't know what has been causing this but it actually has made it difficult to snag. The bunker are on the surface and not so much stacked up underneath. I should have been practicing with the cast net. I was not in the harbor for the cinder worm hatch but we saw cinder worms in Montauk Harbor Wednesday night.

Bass have been all over these bunker. Two weeks ago this Sunday we found a very active bunker school right near the barges. On the first cast I snagged a bunker which was eaten immediately by a bass. The neat thing is we caught 5 bass on the snagged bunker to 30 pounds, couldn't get the bunker back to the boat. We finally got some bunker and anchored near the asphalt company on the West side of the harbor and caught 7 more bass on chunks. All of this from 6 to 9 am and we went home with the fish biting.

Striped Bass Survey

NY DEC staff were seining in Hempstead Harbor on June 19 as part of the DEC's annual striped bass study for the NYS marine district. DEC marine biologist Julia Socrates provided preliminary information on the seining and reported the following:

We also saw the sand worms on Tuesday... caught a whole bunch unfortunately. They are in Oyster Bay as well. We didn't see anything else out of the ordinary.... silversides, killifish, striped bass, bluefish, tautog, sculpins, winter flounder, etc. We saw the large schools of menhaden at the surface, but did not catch any in our seine.



Pete Emmerich with a 30-lb striped bass on the left and other caught in Hempstead Harbor on June 5 (photos by Pete Emmerich)

JULY 3, 11, 18, 25

July 3: High tide, 11:25 AM; incoming tide for full survey at 11 stations (upper and lower harbor) and collected bacteria samples at 18 stations; calm— wind at N 3-4 kt.

July 11: High tide, 6:27 PM; outgoing tide for full survey at 5 stations and collected bacteria samples at 10 stations (no access #14A, near power plant); wind NW-NE at 3-5 kt.

July 18: High tide, 11:37 AM.; incoming tide for full survey at 11 stations; collected bacteria samples at 20 stations; wind NW-W-SW 3-8 kt.

July 25: High tide, 3:29 PM; outgoing tide; full survey at 5 stations; collected bacteria samples at 12 stations; whitecaps— wind N 7-12 midharbor but 3 kt in Glen Cove Creek.

Rain, Temperature, and DO

Total **rainfall** so far for July is 105.5 mm (compared with 48.5 mm for July 2011). We had no rainfall within 24 hours of any of the July monitoring dates and only 2-2.5 mm of rain within 48 hours of three of the monitoring dates. **Air temperature** was wide ranging at about 24-31°C (July 3), 24-27°C (July 11), a sweltering 30-37°C (July 18), and a comfortable 22-24°C (July 25), during the monitoring period. **Water temperature** at surface was about 23-25°C, 23-24°C, 23-25°C, and 22-23°C for July 3, 11, 18, and 25, respectively, and at bottom was about 19-23°C, 21-23°C, 20-24°C, and 22-23°C for those dates, respectively, during the monitoring period.

Bottom DO varied widely and was at hypoxic levels at three of the 11 stations monitored on July 3 and at three out of five stations monitored on July 11. We recorded hypoxic conditions at several stations on July 18 but were concerned that the QC titration that was done at the first station was not close enough to the bottom meter reading at that station, so we did QC titrations at several other stations (see attached data spreadsheet). On June 6, bottom DO was above 4 ppm for all stations, but 6-7 ppm at CSHH #1-3 (deeper water). The electronic meter was serviced before the July 25 survey and checked against the backup meter. On July 25 bottom DO increased as a result of high winds and wave action to a range of about 4-6 ppm.

Bacteria Levels

On July 11 there were exceedances in bacteria levels at three of the stations monitored (#11, in Glen Cove Creek, and #15A and 15B, Scudder's Pond outfalls). On July 18 there were exceedances in bacteria levels at 6 of the 20 stations monitored—#13 and #13A (at the head of Glen Cove Creek), #14A (outfall adjacent to power plant), #15, #15A, #15B (all related to Scudder's Pond). The analyses of July 25 bacteria samples are not yet available.

Water Color and Clarity

On all four survey dates in July, water color was judged to be a normal brown or green, although on July 18, water in parts of Tappen Marina and areas of the lower harbor appeared to be a thick mossy green. Secchi depths varied widely among stations, at 0.5-1 m (July 3), 0.8-1.3 m (July 11), 0.5-1.4 m (July 18), and 0.5-1 m (July 25).

Observations

Wildlife

No comb jellies were noted on any of the July monitoring dates. (It is unusual for us not to observe comb jellies by this time in Hempstead Harbor.) Bunker were present in large schools throughout the harbor. On July 18 we observed bunker finning in Glen Cove Creek and saw large bunker and peanut bunker jumping at CSHH #3, near the entrance to Glen Cove Creek. On July 3, we saw small snappers by CSHH #14, adjacent to the power plant.

The usual variety of birds we see around the harbor was observed on all monitoring dates in July; they included cormorants, mallards, egrets, and Canada geese (still in large numbers and mostly at the beaches—North Hempstead Beach Park and Tappen Beach), ospreys, swans, terns, herons, and 1 belted kingfisher. On July 11, a dog was seen chasing a duck in the low water at the head of Glen Cove Creek.