

Spy Pond Plant Reports

May 27 to August 3, 2022

Brad Barber

===== *May 27, 2022* =====

No algae in the west corner. Lots of floating curly-leaf fragments. Clear water.

No goslings hatched this year.

===== *May 30, 2022* =====

9:00 am, 55 F, sunny

Two water chestnuts by with turins by north beach. root 2-3' long

One water chestnut by boat ramp

Curly-leaf in water from Boys and Girls club to Elizabeth Island.

Water flowing from the Spring Valley drain

===== *June 5, 2022* =====

Sunday June 5, 2022 3:00pm was about 75, sunny, with a light breeze. David Kaplan joined me for a tour of Spy Pond. Secchi depth at the South Basin was 10' while the North Basin was 9' (at 6:00pm). Only the sill was checked with rake tosses.

The edges of curly-leaf growth (c.a. 5' deep) show initial signs of die-off with pale green leaves. The transition to deep water west of the sill shows brownish leaves with hard, dark nodules at the leaf axils. These are the turions which become next year's plants.

Curly leaf pondweed is covering the surface on about half of the sill and north of Rock Island. As before, curly leaf pondweed also observed in the SW basin, the shoreline west of the Boy's and Girl's club, and the SE basin. Fragments are caught by rooted plants, increasing the coverage. Boat travel is becoming difficult on the sill.

No other pondweeds found on the sill.

In shallow water west of Elizabeth Island there are several areas of wild celery (*Vallisneria americana*) approx. one plant per square foot. It has tape-like, basal leaves that flop on the surface [DEP, A guide to aquatic plants in MA]

The pondweed near Sheraton Park (Kelwyn Manor) was covered in filamentous algae with algae clinging to the throw line on rake tosses. Throughout the sill, nitella was sparse to dense on most rake tosses.

As on May 22, the edge of the west corner (Rt. 2 @ Pleasant St) had an algae bloom on the surface about 3' wide. The water there was clear on May 27. Near Kelwyn Manor shore, small green algae clumps are in the water column. Algae was not seen on the bottom except for clinging to phragmites' stalks, etc. Lots of pollen throughout Spy Pond.

Details -- C-L refers to curly-leaf pondweed. Estimated site IDs from the 2019 annual report ('Spy Pond survey sites 2019.pdf').

3:00pm, 70-75 F, sunny, light breeze

SP30-45, north-east of Kelwyn-Manor ramp, 5' deep -- moderate nitella and C-L to 4.5'. C-L on the surface

South basin buoy -- secchi depth 10'

SP63, outlet -- water level at 48cm with about 2cm over the weir

SP37, 30' west of Eykamp's dock -- large snapping turtle with a shell about 1' 6" long and 1' 3" wide.

SP30-45, near Preston's, 4.5' deep -- E toss one C-L to 22", moderate nitella, muck. N toss one C-L to 26", moderate nitella. W toss no C-L, moderate nitella. S toss sparse nitella with leaves and other debris

SP30, 120 yds from Sheraton Park in 5' 10" water. Depth test pulled up moderate filamentous algae. S toss dense C-L growing to surface with up-to 1' on surface, moderate nitella, filamentous algae, muck. E toss dense C-L and nitella with filamentous algae covering everything, especially near the surface. Anchor heavy with C-L, nitella, and porous muck.

North Basin at 6:00 in sunlight -- secchi depth 9'

SP70-76, north of tip of Elizabeth Island, 5'10" deep -- S toss moderate nitella, 2 C-L to 2" long, no filamentous. N toss, sparse nitella, dense C-L just reaching the surface. Anchor sparse nitella, dense C-L, porous muck

SP69, near shore of Elizabeth Island 1' deep -- rooted plant 12" long with one or two basal leaves every sq foot [wild celery]

SP69-21, west of Elizabeth Island, 5' 3" deep -- C-L starts with a sharp break. W toss dense C-L, sparse to trace nitella, no filamentous, about half of C-L was a pale green (dying). E toss dense nitella, no C-L, no filamentous, debris. Anchor sparse C-L, no muck, some silt.

SP33-44, half way between Kelwyn-Manor Park and Pleasant St, 10.5' deep -- edge of visible C-L 20" below the surface. Some suspended fragments with turions and brownish leaves. E toss moderate C-L to 8' 9". sparse nitella, some covered with filamentous algae, some brownish C-L w/ turions, mostly green. W toss sparse C-L to 6' long, sparse to trace nitella some brown, some filamentous algae, no turions. Anchor dense muck full of decayed leaves.

===== *June 10, 2022* =====

David Morgan and I toured Spy Pond on Friday June10, followed by a plant survey of the south basin. The north basin was surveyed on Saturday June 11.

It appears that curly-leaf pondweed is collapsing. It remains just below the surface, but is seldom visible on the surface. There was widespread decay, dead plants, and fully developed turions. The globular white flowers have turned into small black seeds. The healthy plants had relatively short green leaves with strongly curled edges. These plants tend to be shorter.

David and I found six water chestnuts attached to their seeds in the gap between Elizabeth Island and Sheraton Park. Some plants were below the surface, others included reddish-orange roots. Water Chestnut was previously found there on June 13, 2017. Most of the shoreline was checked for water chestnut.

Secchi depth is decreasing. Secchi depth was 6' 11" at the south basin on Friday 1pm and 6' on Saturday 6pm. Secchi depth was 5' 8" at the north basin (Fri 2pm) and 6' 9" near Spy Pond Park (Sat 6pm). The water is murky with pollen and an occasional green glob of algae. On June 5, secchi depth was 9-10'.

Filamentous algae was heavy near the shore of Sheraton Park and in the southwest bay. It was also in the southeast bay by the condominiums. Nitella was observed throughout.

A Spy Pond mallard (with white breast) had eight baby ducklings.

A few sedges and rushes were seen near shore, e.g., at the end or near the end of Sheraton Park.

A common water creature is a worm about 1 mm long. It moves with a burst of rapid squiggles then hunts for food. It grabs the food by one end. Its mouth is at the other end. Any ideas?

Details -- 'C-L' is curly-leaf pondweed, SPnn from 2019 plant survey

6/10/2022, Friday, 1:00 pm, windy and sunny. With David Morgan for a tour of Spy Pond. Little or no C-L visible on surface, but easily visible below the surface. A tree swallow circled us for a while.

SP30-45, west of Sheraton Park (Purcell), 70 yds from shore, water 5' 8" deep -- W toss dense C-L, moderate nitella, filamentous algae, starting to decay. S toss moderate nitella and C-L with filamentous algae.

Outfall -- 50 cm

SP28-18, 10' from beach at the end of Sheraton Park (Sacco) -- three water chestnuts, two of them below the surface. Three more water chestnuts were found at the same location on June 11. They all had attached seeds. Some had reddish-orange roots.

SP-21-26, 120 yds west of Elizabeth Island near green brier, 5' 8" deep. A dozen small black seeds at the tip of C-L. A few black turions loosely attached to stalk, easily fell off. S toss many dead and decaying C-L, dense nitella very green. N toss sparse nitella, moderate C-L, long and mostly decayed, muck. W toss fine muck, moderate-dense decayed C-L, moderate nitella. Anchor lots of decayed plants in muck, dead C-L. No filamentous algae.

SP40, north of Rock Island, 200 yds from shore, 5' 11" deep -- C-L almost to surface. W toss lots of decayed C-L on rope, many black turions, moderate young C-L with small green leaves,

trace nitella, no filamentous algae. E toss heaviest pull so far, dense C-L mostly dead or small green leaves, trace nitella.

SP68, southwest bay near 2nd stone walk, 200 yds first dock and 70' from shore, 4.5' deep -- Lots of C-L fragments, seeds but no turions found. S toss moderate C-L, sparse nitella, filamentous algae, fine muck. E toss sparse dead C-L, lots filamentous algae, a few C-L with small green leaves. W toss sparse dead C-L, lots filamentous algae, trace nitella

===== *June 11, 2022* =====

Saturday, 6 pm, sunny, light breeze

SP03, halfway between north beach and platform, 30' from shore, 7' deep -- secchi 6' 9". N, E, W, and S toss with minor flotsam and no plants.

SP10, 70' from 1st condominium, 5' 11" deep -- C-L near surface with filamentous algae. E toss dense muck with embedded nitella, two -L dead or dying, one nitella. W toss dense muck, sparse C-L dead, dying or small leaf

S10-12, southeast bay, 150' from Alfred Rd, 5' 1" deep -- C-L up to surface, filamentous algae covering C-L, turions on floating fragments. S toss dense C-L dead-dying-or-small, no filamentous but some filamentous algae on rope. W toss sparse C-L and nitella with filamentous. N toss sparse C-L and some muck. Anchor a couple of C-L dense muck

SP28, end of Sheraton Park (Sacco), E edge of beach -- sedge 1' in water.

SP30, Sheraton Park (west of Purcell) -- rushes 2' in water.

===== *June 23, 2022* =====

It is a week after Steve Johnson and Joel Harris' survey of Spy Pond on June 15-16.

On June 23, the water is murky with a green tint. Secchi depth is 2' 2" in the south basin, compared to 6' on June 10 and 3' 2" on June 14. The North basin is 2' 10" compared to 6' 9" on June 11 and no secchi reading on June 14.

There were clumps of green algae floating on the surface next to my dock. Other algae were not observed, including filamentous algae.

The curly-leaf pondweed has thoroughly decomposed. In areas of previous, curly-leaf growth, rake tosses revealed a small number of dead curly-leaf stalks, one or two stalks with newly formed leaves, and substantial quantities of muck.

In some areas, the rake was heavy with nitella. No other plants were found. No water chestnuts.

The buoy at the South Basin has been lost. The yellow pipe marker remains OK.

A young fisherman caught a bass and other fish near Sheraton Park (south basin). Other

fishermen have reported poor fishing.

Details -- 'C-L' is curly-leaf pondweed

6/10/2022, Tues 6:30 pm

West of Sheraton Park (Preston), 200 yds from shore, 5' 8" deep -- E and S toss sparse dead C-L (two with small leaves) and trace nitella. Collected some C-L seeds. Only C-L with small leaves visible near the surface. No filamentous. N and W toss moderate dead C-L stalks, moderate nitella, lots of muck.

At end of Sheraton Park on the north basin -- a floating C-L fragment with filamentous algae

Halfway between Kelwyn Manor marsh and Pleasant Street, 15' deep -- secchi 3' 2" at 7pm with sunshine.

Northeast of Rock Island, 5' 11" deep -- floating mats of C-L fragments with small turions, green seeds, some green leaves. Duckweed 1-2 mm floating disks with one root. W toss moderate dead and decaying C-L, multiple developed turions, trace nitella.

6/15-16/2022, Wed-Thur -- SWCA plant survey of Spy Pond by Steve Johnson and Joel Harris.

No aquatic plants found at survey sites. Some plants along the edges, e.g., pipewort (*Eriocaulon aquaticum*) at my dock.

6/23 Thurs 6:00 pm, sun and clouds

100 yds from my dock, 5' 9" deep -- S N and W toss sparse nitella and dead C-L, 1 green C-L, lots of muck. E toss sparse nitella and dead C-L, muck

South basin -- secchi 2' 2" murky water

Southwest bay, 2nd stone walk @ 1st doc, 6' deep -- S toss, trace nitella, some dead C-L, W toss muck and dead C-L, N toss dead C-L, on green sprout

North of Rock Island 200 yds from shore, 6' deep -- E and W toss nitella present, 1 C-L small leaf. N toss muck, dead C-L, nitella present

70' northwest of Elizabeth Island, 5' 2" deep -- S toss moderate nitella, E toss rake full of nitella. N and W toss muck and sparse nitella

No water chestnut along north shore, Spy Pond park, and Sherwood beach.

North basin, 7pm -- secchi 2' 10"

Southeast bay, west of Alfred Rd, 5' 3" deep -- secchi 2' 10", S and E toss heavy muck, W toss some young green C-L

===== *June 26, 2022* =====

10am, sunny, calm

South basin -- secchi depth 3'.

Algae floaters on top and in the water column by my dock and throughout the south basin.

The water was a murky dark green.

Secchi depth 3' in the south basin and 3' 3" in the north basin. Similar or better depths for June 26-28. The previous report on June 23 was 2' 2" and 2' 10" resp.

Spiny naiad (*najas minor*) was found at sample sites on June 28 and July 1. Fragments were floating by my dock. I also found an unidentified delicate, thread-like plant.

Clumps of green algae were on the surface and in the water column in the north basin and along the shore in the south basin. No filamentous algae was observed.

The pipewort by my dock occurs every 2' or so.

Moderate nitella was found west of Elizabeth Island. At other locations trace nitella was found.

This year is similar to 2017, the year after the 2016 sonar treatment. By June 13, 2017 curly-leaf pondweed was throughout the littoral zone, Snail-seed pondweed was not reported for 2017. By August 4, 2017 there was dense spiny naiad in the southeast cove, north Elizabeth island, Kelwyn Manor, southwest cove and along Rt. 2. On August 28, 2017 naiad was treated with diquat on 38 acres.

===== *June 27, 2022* =====

1:30pm cloudy with light rain

dock at 74 Spy Pond Pkwy -- No algae clumps were visible from my dock. Water color is nearly a brownish grey.

South basin -- secchi depth 3'

===== *June 28, 2022* =====

6pm, sunny with a light breeze

South basin -- secchi depth 3' 6"

Floating green algae especially near Kelwyn Manor. Some algae in water column.

North of Rock Island, 6' deep -- W toss heavy muck. 1 small sad C-L. trace nitella

E, N, and S toss -- muck, trace nitella, 1 small C-L

North basin, 19' deep -- secchi depth 3' 2"

120' from south end of Eliz. Island, 4' 9" deep -- W toss muck, sparse nitella, trace curly-leaf. E toss sparse nitella, no muck. S toss med. nitella, two C-L, one possible thin leaf and a small najas minor 1" long, some translucent green algae globs embedded in the nitella. N toss moderate nitella, some gritty mud, a few green algae globs.

Water color a steel gray

On June 28, I talked with a fisherman new to Spy Pond. He was fishing with double treble hooks as recommended by a fellow fisherman. He had caught a large bass (10" ?) and several other fish. He also snagged a large snapping turtle. While removing the hook from the turtle's mouth, a flipper was snagged with the other treble hook. With difficulty he removed the treble hooks.

===== *June 30, 2022* =====

6pm sunny light northwest breeze

South basin -- secchi depth 6'

===== *July 1, 2022* =====

10am sunny west breeze

90' from 76 Spy Pond Pkwy (Preston), 5' deep -- E and N toss lots of muck, one C-L, a few nitella in bad shape. W toss no muck, three Najas minor 1" long. S toss into shallow water, several Najas minor, a thin leaf with a delicate thin long leaf, some nitella encrusted with muck, gritty muck coating the rake. Anchor thoroughly decomposed gritty muck

North basin -- secchi depth 3' 3" in sunshine. Green algae clumps on surface and in water column

At 8am rode by Alfred Road, southeast cove, calm -- water looked murky, no algae visible

dock at 74 Spy Pond Pkwy (Barber) -- two floating Najas fragments, one substantial. These fragments are upwind of the earlier sample site. Pipewort in shallow water every 2' or so. Green algae on surface and in water column

===== *July 8, 2022* =====

On July 8, secchi depth was 3' 11" in the south basin and 4' 2" in the north basin. From June 26 to July 1, secchi depth ranged from 3' to 3' 6". On June 23, secchi depth was 2' 2" and 2' 10" resp.

Spiny naiad (najas minor) was found at the sample sites on the sill west of Elizabeth Island.. Moderate density spiny naiad up to 9" was observed at Sheraton Park in Kelwyn Manor

[corrected]. The spiny naiad at Sheraton Park was mixed with moderate density Chara.

Chara is a stonewort that is stiffer than Nitella. Nitella was common earlier this year. No filamentous algae was observed. Long thin threads of algae were also found. It could be a spirogyra. The shiny green threads were about 0.1 mm wide and 2-4" long. With a 10x loupe, some sections had no structure, other sections had beads every 0.25 mm.

Water color is a dark olive drab, turning black as the sunlight fades.

Details -- 'S-N' is spiny naiad (najas minor), 'C-L' is curly-leaf pondweed

5pm, mixed clouds and sun, west wind

100' from 74 Spy Pond Pkwy (Barber), 5' 10" deep -- E toss muck with trace nitella and two C-L. S toss no muck, trace nitella, six S-N 1.5"-2" with white roots. W toss no muck, a few S-N. N toss muck with nitella present. Anchor had a C-L 20" .

South basin secchi depth in sun 3' 11". Water color a dark-olive drab

Outfall at 45.5 cm with water over the center of the board. Some floating green algae. Not observed elsewhere.

Southwest bay inside of 1st dock and 2nd stone steps, 3' 11" deep -- E, W, S, and N toss muck with nitella present. Also two native clams 1.5"

Northeast of Rock Island 100 yds from shore, 5' 10" deep -- E and S toss muck with nitella present. W toss heavy muck and nitella present. N toss moderate muck and nothing.

A young fisherman caught two 9" perch by Sheraton Park.

50' west of Elizabeth Island, 4' deep. S toss on gravel with 1 nitella. W toss muck and moderate nitella with two S-N to 3". A 4" long thin green stem (spirogyra?). E and N toss not recorded. Three S-N on anchor to 3".

North basin secchi depth partial sun 4' 2"

West border of 22 Sheraton Park (Purcell), 5' deep -- N toss nothing. E toss sparse S-N to 5' and trace chara to 5". S toss into shallow water, no muck, moderate S-N to 9" and moderate chara. W toss S-N present, no muck. Water color is black.

===== *July 8 to July 22, 2022* =====

On July 22, secchi depth was 4' 2" in the south basin. On July 14, secchi depth was 4' 5" in both the south and north basins. On July 8, secchi depth was 3' 11" in the south basin and 4' 2" in the north basin. On June 23, secchi depth was 2' 2" and 2' 10" resp.

The past week has been hot and the past month dry. Water level at the outfall is 39 cm. The center and left edge of the boards are 4 cm above water level. The left edge is 6 cm above water level. In 2001, the height of the boards (top-of-weir) was 39 cm. In

2013, it was 41 cm. The boards were removed for shoreline restoration in 2019.

Three sites had moderate density spiny naiad, 8 to 10" long -- east edge of Kelwyn Manor marsh, northwest shore of Elizabeth Island, and Sheraton Park. One plant was 12" long. These sites have a sandy bottom.

On July 8, Sheraton Park had moderate density spiny naiad, 9" long. A year ago (7/23/21), spiny naiad was moderate to full-rake in the southwest cove, north basin near Pleasant Street, and north to northeast of Rock Island. It was 18-27" long. It was also present in the southeast cove to 9". The treatment for curly-leaf pondweed was May 20. The spiny naiad treatment was September 3.

Other than spiny naiad, no other rooted plants were observed.

The mucky areas were devoid of vegetation. While swimming on the sill, if feet are placed near the bottom, muck is detected, but offers no resistance. The bottom appears to have an opaque layer.

Chara was found at multiple sites. It has replaced nitella.

Some sites had a branching macro-algae. The algae was not identified. Its end branches are short and straight, about an inch, two to six from a node. The nodes occur along the main stem and end of stem. The main stem sometimes branches into stems with nodes and end branches.

Shiny green threads of algae continue to be observed, up to three inches without an internal structure.

A slight algae smell is sometimes observed at the southwest bay and Kelwyn Manor boat ramp. The southeast bay sometimes had an algal smell. A reddish growth was observed at 23 Sheraton Park prior to July 8.

On July 17, I collected four samples for the smell test of Palmer 1962 [p. 61 and App. C, <https://www.isws.illinois.edu/pubdoc/CR/ISWSCR-450.pdf>]. The samples looked clear. The covered samples were heated in a water bath to 40 C, 104 F. On opening the jars, no smell was detected in three samples. A slight off smell was detected from Spy Pond Park, perhaps due to a dozen geese nearby.

Water color is a dark brown, turning black as the sunlight fades.

Details -- 'S-N' is spiny naiad (najas minor)

===== *July 8, 2022* =====

23 Sheraton Park (Miettinen) reported a reddish growth, perhaps algae. I was not able to find it. It has gone away.

===== *July 12, 2022* =====

Eagle eating large fish on roof of 74 Spy Pond Pkwy

===== *July 14, 2022* =====

1:00pm, mixed clouds.

South basin secchi depth in sun, 4' 5".

Outfall at 42 cm, about 1 cm below boards.

North basin secchi depth in sun, 4' 5"

West border of 22 Sheraton Park (Purcell) -- S toss (towards shore) moderate spiny naiad to 10". E toss 2 S-N to 9".

===== *July 16, 2022* =====

2:30pm

Paddle along Rt. 2, water had a greenish tint

Swim later, no shower needed.

===== *July 8, 2022* =====

Collected water samples for smell test after heating in a water bath to 104 F.

#1 West corner by Rt. 2 infall, sampled the shallow bay in the far corner. Sample looked clear. No smell detected.

One foot wide snapping turtle was resting, mostly above water. It then buried itself in the muck.

#2 Southeast bay off of Alfred Rd in shallow water. The water was murky with an algae

smell. Sample looked clear. No smell detected.

#3 Spy Pond Park, south beach in shallow, clear water. No algae smell. Lots of geese nearby. Sample looked clear. The sample had a bit of an off odor.

#4 74 Spy Pond Pkwy (Barber) in shallow water. Murky water, no algae smell. Sample looked clear. No smell detected.

===== *July 21, 2022* =====

Swim, a slight algal smell. Shower needed.

===== *July 22, 2022* =====

6pm, sunny 90F, west wind. After a hot week with highs in 80s and 90s. The month of July was dry.

100yds from 76 Spy Pond Pkwy (Preston), water 5' deep -- E toss no mud trace chara and algal threads. S toss light mud, sparse algal threads, a branching macroalgae, one S-N. N toss no mud, trace branching algae.

150 yds from east edge of Kelwyn-Manor marsh (silver maple), 4' 8" deep -- N toss moderate S-N to 9" and moderate chara. Sandy bottom. E toss sparse S-N and trace chara, one algal thread, no mud. S toss trace S-N and chara.

South basin -- Secchi depth 4' 2". Nearby (ca 30') DEP buoy was a 1' 6" shallower than the PVC marker.

Southwest bay, 250' from 2nd stone walk, 1st dock. 5' 8" deep -- S toss dense mud no plants. W toss no plants no mud.

Southwest bay, 150' offshore north of 1st stone walk, 1st dock, 3' 9" deep -- W and S toss mud, no plants, one branched algal stem. N toss nothing. E toss S-N present to 2".

Southwest bay, water black with slight algal smell

Outfall at 39cm. Left edge of boards is 6cm above water level. Center and right (north) edge of boards is 4 cm above water level.

NNE of Rock Island, 100' from shore, 5' 3" deep -- E W N and S toss, some mud with one or two algal threads. Flushed an osprey who then circled and dived for fish.

4 Devereaux (Berman) -- Spy Pond duck with a newborn swimming

50' from northwest shore of Elizabeth Island, 4' deep -- E toss sparse S-N to 8" with chara and algal threads. N and W toss trace chara. S toss moderate chara and S-N to 8". Anchor one S-N 12".

Spring Valley -- strong flow from stormwater drain. Cold water, clean look, slight chlorine smell. Reported to DPW. Previous report June 6.

50' from 36 Peabody (Hatch), 4' deep -- S toss sparse chara. N and W toss nothing.

200 yds from Alfred Rd, 5' 4" deep -- E W N and S toss mud no plants

100' from south end of Elizabeth Island, 4' deep -- N toss trace S-N to 5" and chara. E toss nothing. S toss trace chara, S-N present with white roots. W toss trace S-N to 4" with one chara.

100' from west edge of 22 Sheraton Park (Purcell), 4' 4" deep - N toss trace S-N to 5" with chara. W toss sparse S-N no muck.

===== *August 1-3, 2022* =====

On August 3, secchi depth was 3' 4" in the south basin. On August 2, secchi depth was 4' 3" in the north basin. On July 22, secchi depth was 4' 2" in the south basin. On July 14, secchi depth was 4' 5" in both the south and north basins. On July 8, secchi depth was 3' 11" in the south basin and 4' 2" in the north basin. On June 23, secchi depth was 2' 2" and 2' 10" resp.

The past week has been hot. A half inch or rain fell on July 25 and 0.2" rain on July 28. Water level at the outfall is 33 cm. On July 22, water level was 39 cm. Dry sand along much of the shoreline.

Cheryl Miller removed a water chestnut plant at the Spy Pond Condominiums. This is the tenth water chestnut found this year (six on Sacco beach (Sheraton Park), one near the boat ramp, two near north beach, one at condominiums). Water chestnuts were previously seen in 2017-2018.

Moderate spiny naiad 6" to 12" long has been found near Kelwyn-Manor marsh, the southwest bay, 74 Spy Pond Pkwy, 22 Sheraton Park (July 8), 8 Devereaux Street, and northwest of Elizabeth Island (July 22). Water depth is 3' 5" to 5'. Except for the southwest bay, the bottom has been sandy or light mud. The muck on the sill and the southeast bay is mostly devoid of plant life.

Most the spiny naiad is covered in milk-white dots. Near Kelwyn-Manor marsh, the dots are gritty or encrusted. They may be algae.

Several areas shows mats of bright green algal threads, especially north of Rock Island.

The low water shows the damage to Kelwyn-Manor marsh. The east end has mostly mud. Some

thin-leaf cattails are growing. Except for the outer edge, the marsh near the silver maple and further west is healthy. The outer edge may have retreated. The pond bottom with marsh remains (including phragmites stalks) extends about 15' into the pond.

Near Elizabeth Island, the muck contained fragments of white roots.

The herons of Spy Pond August 2-3 -- black-crowned night heron, green heron, and great blue heron.

Water color is a dark muddy brown.

Details -- 'C-L' is curly-leaf pondweed, 'S-N' is spiny naiad (najas minor), 'encrusted S-N' has milk-white gritty dots, 'dotted S-N' has milk-white dots, 'branch algae' is 2-4 short branches from stems, 'algal thread' is bright green threads which may form into algal mats (July 14-22 for details).

===== *August 1, 2022* =====

5:00 pm, cloudy, 80 F, no rain

Kelwyn-Manor park -- pictures of bank. It has grown back after pruning this spring. Thin leaf cattails are slowly returning.

Kelwyn-Manor marsh -- pictures of stake at edge of marsh (from phragmites) about a canoe length from the current shore. Much of the east end of the marsh is bare mud. Previously it was full of marsh plants and cattails.

Middle of Kelwyn-Manor marsh -- Picture of canoe anchored at end of old marsh. White and pink marsh mallows.

150' from Kelwyn-Manor marsh (river birch), water 4' 1" deep -- S toss moderate naiad to 12" covered in gritty milk-white dots, trace chara, one C-L 2' long. E toss full rake, moderate S-N plus chara and branching algae, one thin-leaf pondweed with multiple root nodes. N toss even mix of chara, branching algae with full rake moderate S-N, sandy bottom.

South basin -- 7:00pm cloudy, secchi depth 3' 5".

100' from 42 Spy Pond Pkwy (Galvin), water 5' 3" deep -- S toss sparse encrusted S-N 3"-4", chara, sandy. N toss possible S-N 1.5' long, algal threads.

150' from 2nd dock (Battuello), water 3' 5" deep -- NE toss sparse-moderate S-N to 10" without dots, mud. W toss nothing. One encrusted S-N on rake straight down. Anchor dense S-N to 12", mud

Outfall -- water level at 33 cm. Water continues to drain.

===== *August 2, 2022* =====

5:00 pm, sun and clouds, west wind

North basin -- secchi depth 4' 3" in sun

Green heron near 15 Sheraton Park (Ceppi)

Black crowned night heron in willow trees opposite condominiums

Water color dark olive drab, almost black

40' from shore of Spy Pond Lane, southeast bay, water 3' deep -- E toss mud, trace C-L, S-N, and algal threads.

150' from Alfred Road, southeast bay, water 3' 10" deep -- S toss trace S-N, mud. E toss trace S-N, mud. N toss mud, algal threads. W toss mud only.

200' from Alfred Road, water 4' 10" deep -- N toss mud trace S-N. W toss nothing.

40' from 44 Hopkins Road, north basin, 4.5' deep -- S toss mud, algal threads, branch algae. E toss dense S-N to 18-24", milk-white dots not gritty, no mud, algal threads. N toss sparse S-N with white dots, moderate algal threads, branch algae, chara, one C-L with turion at base. W toss moderate algal threads and branch algae, trace S-N.

===== *August 3, 2022* =====

8:00am, sunny, light east wind

70' from 74 Spy Pond Pkwy (Barber), water 3' 4" deep -- W toss moderate S-N to 9" with algal threads, light mud. N toss nothing. E toss moderate S-N to 12", encrusted with white dots and algal threads, light mud

200' from 74 Spy Pond Pkwy (Barber), water 5' 1" deep -- N, E, and W toss heavy mud, nothing else.

300 yds from 10 Sheraton Park (Petryshen), water 5' 3" deep -- E toss heavy mud

200 yds from south Elizabeth Island and 22 Sheraton Park (Purcell), water 6' 1" deep. E toss heavy mud.

100 yds from south tip Elizabeth Island, in channel -- E toss moderate mud

120' from south Elizabeth Island, water 4' 9" deep -- E toss no mud, sparse encrusted S-N and chara, two thin leaf pondweeds. W toss mud, one 2' 7" C-L with healthy new leaves near root, white root fragments in mud. S toss no mud, one 36" C-L with healthy new leaves at root, one leafy S-N to 4". N toss light mud, moderate algal threads and chara, several S-N. Anchor sand and one 9" S-N.

100' from midway Elizabeth Island, near paper birch, water 5' deep -- S and W toss mud, white root fragments. N toss sparse S-N. E toss no mud, sparse S-N to 6" with algal threads and chara.

100' from northwest Elizabeth Island, water 3' 9" deep -- E toss moderate algal sheets with embedded chara and S-N with white dots. N toss mud. S toss full rake algal sheets with sparse S-N with white dots.

100' from 8 Devereaux St (Stark) water 4' deep -- N toss moderate S-N to 13" with algal threads. S and W toss light mud, trace algal threads. E toss heavy mud.

100' from 210 Pleasant, northeast of Rock Island, water 4' deep -- N toss moderate algal mat, sparse white-dot S-N to 9". W toss light mud, sparse algal mat. E toss dense mud, sparse algal mat.

green heron on tree between 210 and 220 Pleasant.

100' from 220 Pleasant (Hibett), north of Rock Island, water 4' 5" deep -- N toss light mud, dense algal mat, sparse S-N to 6" with white dots. W toss dense algal mat, mud, sparse S-N. S toss dense algal mat, no mud. E toss dense algal mat, light mud, trace S-N.

South basin -- secchi depth 3' 10" in sun

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