

Gabriola Streamkeepers—Water levels and quality

## **Observations at Coats Marsh, Gabriola Island**

—with notes on Coats Marsh Creek, East Path Creek, and Stump Farm Streams.

### ***References:***

[RDN Coats Marsh Regional Park](#), 2011–2021 Management Plan, Appendix A.

[Coats Marsh hydrology](#) .

Coats Marsh RP and 707 CP Trail [Maps](#): Maps Y and Z.

Gabriola Stream and Wetlands [Atlas](#) .

Coats Marsh Species [Checklists](#) .

## **Field observations—2016 (October—December)**

THIS FILE ([Field Observations 2016-4](#)) IS A SUPPLEMENT TO:

“[Observations at Coats Marsh, Gabriola Island](#)” File: 673.

For an up-to-date list of supplements see [here](#) .

October 2, 2016 (day +442, 366+76)

Quiet. On the Marsh Trail, more *Inocybe geophylla* not lilac, and an eye-catching cluster of a *Collybia* sp., yellowish, hollow stems.



October 4, 2016 (day +444, 366+78)

Light rain 5 mm. Cistern level -327 mm SCB, a drop of 5 mm. Level at the weir -302 mm (SPB16), a rise of 2 mm.

A moist SE wind signalling a change of season. The average daily temperature up north must be falling below that of the ocean. The cooling air over the mountains, tundra, and boreal forests is building up pressure there, making sure that us down here in the bottom lefthand corner of the country have flows of mild maritime air to keep us from wishing we lived back east.



A red-tailed hawk sitting atop a fir near the entrance, only its unfamiliar call attracting attention, not only mine but that of a raven too. The raven alarmingly checked me out too before flying off. Impossible to get a good photo.

A couple of American widgeons near the cistern in field-guide plumage, but they are so shy. They fly as soon as you see them, sometimes before. It would be very easy to visit the marsh and see only mallards.



A large grasshopper (*Melanoplus* sp.?) curiously making its way quickly through the wet grass, seeming to be a mouse or a snake. Wasn't until I saw the photograph that I could see what it was.

Possibly *M. sanguinipes*, a migrant species and an agricultural pest in the southern US.

Mushrooms and toadstools everywhere, especially under conifers. Autumn's spring flowers. Charming, cute, and elegant, not all

of them for the hungry, but an important part of forest life. There's too many species for me to try and identify them all, even if I could. I'll just have to re-post if I ever find out what they are.



*Marasmius* sp. horsehair mushrooms, looking like tall thin black-stemmed wine glasses scattered on table-cloths of conifer needles. Maybe they dance when I'm not looking.



Didn't pick to check stem, rings, veil, gills, volva, smell, taste... nor did I do spore prints, so *Agaricus safewayus* is all I recommend. They're not so bad and they come with labels.



Top left: don't know.

Top right: don't know, *Clitocybe* sp.?

Middle left: *Boletus* sp. *lakei*? + *Russula xerampelina* (no, not posed)

Middle right: *Amanita muscaria*

Bottom left: *Laccaria amethysteo-occidentalis*? Bottom right: *Lycoperdon pyriforme*



Pixie-cup lichen (*Cladonia* sp.) on one of the erratics, becoming common.

October 6, 2016 (day +446, 366+80)

Light rain but a lot more coming. A real front, not one of those feeble occluded ones.

A northern shoveller out on the lake showing green in its speculum as it flew off. Also what looked like a hooded merganser, far away.

Some of the ducks on the



lake must be mallard hybrids, most often crosses with widgeons, but there may be some with



one of the three kinds of teal.

The hybrids' heads have the green gloss of the pure-bred mallards but the gloss varies more with lighting and wetness, gleaming sunshine can create the illusion of patches of white, and the green is almost never as bright, sometimes quite dull. Hybrids too lack white neck-rings and their bills are seldom yellow.

October 9, 2016 (day +449, 366+83)

Rain, after the downpour 68 mm. Cistern level -256 mm SCB, a rise of 73 mm. Level at the weir -209 mm (SPB16), a rise of 93 mm.

No puddles yet in creek beds. Leakage through the baffle tinkling, but there's no flow. Raindrops on the grass glinting in the sun.

No new duck arrivals. Golden-crowned kinglet on the West Entrance Trail where small flocks of smaller birds busy about in thickets along the boundary between the Douglas-fir forest and the field outside the park. The tweet-tweeting of the troupes is easily heard, but they're the devil to spot, even though they'll come near if you just stand still for a moment. The soundscape has certainly changed in the past couple of weeks. Unfamiliar calls of migrating strangers. Like being in a train station in a foreign land.

October 10, 2016 (day +450, 366+84)

No rain. Cistern level -252 mm SCB, a rise of 4 mm. Level at the weir -209 mm (SPB16), no change. Quiet.



Top left: *Pholiota squarrosa* ?

Top right: orange peel, *Aleuria aurantia*

Left: don't know.



Top left:  
*Helvella lacunosa*  
Elf's saddle

Top right:  
*Amanita muscaria*  
button

Below: a whole crowd of don't knows.



October 12, 2016 (day +452, 366+86)

No rain. Wood ducks, American widgeons, others far away. Still dragon flies in the old burn-pile clearings, Canada darners (new species for the list) and western meadowhawks. One even landed on my head. Wind enough to stir the branches of the willows in the Canary Grass Meadow. Some purple finches there.



October 15, 2016 (day +455, 366+89)

Lots of rain, about a month earlier this year than last. The winter wet season has begun. Gauge shows 100mm.

Level at the cistern -83 mm SCB, a rise of 169 mm. Level at the weir +149 mm WPB (scale), a rise of 234 mm as leakage through the beavers' dam increases. Sill depth +27 mm.

No flow from the pond leveller or the private-property drainage pipe.

East Path Creek is flowing, about 7.0 L/s. Nothing from the NE Arm, still looks dry at the spillway. No flow

from the Canary Grass Meadow into the Stump Farm Number 1 Stream beyond a local trickle. Stanley Road wetland however is flowing in sheets down the entrance path from the west side. Coats Marsh Creek is flowing. [see main [file](#) for analysis]



Out on the lake, all I see through rain-speckled glasses are widgeons.

October 18, 2016 (day +458, 366+92)

Rain 40 mm. Cistern level -23 mm SCB, a rise of 60 mm. Level at the weir +305 mm WPB (scale), a rise of 156 mm. Sill depth +95 mm.

East Path Creek is flowing strongly, 16.3 L/s. Nothing at the NE Arm spillway. Stanley Road wetland flow has eased. Coats Marsh Creek is flowing strongly. You can hear it now as you approach it.

Pond leveller working at well over half of its full capacity; flow from private-property drain just below the weir has also started.

A raft of about 20 ducks on the lake; mallards, widgeons, and maybe a hybrid or two; male and female. Very easily spooked. The whole flock took off together and headed east. Didn't look as if they were coming back any time soon. I was being careful not to alarm them, so if this were ever to become a popular birding spot, a blind on stilts would be essential.



The rising water has submerged the leaves of the watershield, which I suppose could be contributing to the rise in water level beyond that in the rain gauge.

Much-Ponding-in-the-Marsh. In the NE Arm wetland it's now ankle deep almost everywhere despite no water being visible yet at the East Path spillway. A vole, probably a Townsend's, scurried across the old logging track north of the wetland (the NE Arm Trail) as I wandered by. Poor guy -- must have been desperate to be out in the open like that. Looking for a drier winter home in the 4-foot probably.

Numerous flocks of small birds, some with mixed species, taking advantage of the lull in the rain. So hard to identify - they are so active among the becoming-leafless alder branches. Finches, warblers, sparrows, nuthatches... but not a good sighting of any of them.



After deciding not to take any more pictures of mushrooms came across two species that needed a break in the rule. *Pseudohydnum gelatinosum* a curious gelatinous, milky-white, translucent mushroom with small teeth for gills. And some *steinpilze*? I just wish that mushroom foragers wouldn't leave behind a trail of kicked-over or broken-off rejects. It doesn't take much practice to recognize a not-worth-collecting *Russula*, *Suillus*, *Boletus*, or whatever without destroying them.

October 22, 2016 (day +462, 366+96)

Rain 29 mm. Cistern level +38 mm SCB, a rise of 61 mm, and now close to as high as the beavers' dam will allow. Level at the weir +335 mm

WPB (scale), a rise of 30 mm. Still a ways to go before it reaches the deck, but the pond leveller is already working at close to full capacity. Sill depth +100 mm. Flow from private-property drain just below the weir now substantial, maybe around 3 L/s.

East Path Creek is at 15.6 L/s. Ponding in the NE Arm has suddenly reached the spillway where water is starting to flow over to the west side leading down to the lake. Less than 1 L/s at the moment, a gutter full, but any more rain will start it flowing in earnest. Must fix the leak in my boot.





Meanwhile, the overcast sky is moody, keeping everyone wondering what it will do next. No wind, quiet. Just one mallard couple out on the lake acting as caretakers.

Show time for all those ninebarks, bigleaf maples, cherries, willows, and Indian plums dwelling unobserved in the understory and along the margins of the Douglas-fir forest; their leaves catching the slanting light with their yellows, oranges, and browns.

October 25, 2016 (day +465, 366+99)

Rain 10.5 mm.  
Cistern level +45 mm  
SCB, a rise of 7 mm.  
Level at the weir +305 mm WPB (scale), a fall of 30 mm.  
Sill depth +80 mm.  
Flow from private-property drain around 1.5 L/s. Everything stable, the pond leveller in control as the rain tide ebbs a little.



East Path Creek is slow at a measured 1.3 L/s. No flow at the NE Arm spillway and no flow where it enters the lake.

The wind aloft breaking up the layers of cloud into ragged fragments and trying, unsuccessfully, to disperse them. A wind-surf in the canopy, adding twigs and small branches to the strandline on the ground where the gusts dwindle away. Fitful sunshine, but not much for a garter snake on the trail and two dragon flies in one of the clearings. Small flocks of juncos. A bold purple finch along East Path Creek. A mallard couple and an American widgeon couple have the

lake to themselves. The ducks seem proud of their new plumage, occasionally splashing and preening to keep it spick-and-span.



October 28, 2016 (day +468, 366+102)

Rain 19 mm. Cistern level +64 mm SCB, a rise of 19 mm. Level at the weir +326 mm WPB (scale), a rise of 21 mm. Sill depth +90 mm. Flow from private-property drain around 1.0 L/s.

East Path Creek is at a measured 8.4 L/s. No flow at the NE Arm spillway, though the pond is high on the east side.

Lost my notebook in Coats Marsh Creek, had to wade down a hundred metres or so in the fast-flowing water to find it lodged under some woody debris fully submerged. Hair-dryer time when I got home.

The ring-necked ducks are back! About eight. Easy to spot; they dive rather than dabble. More widgeons too.

A rough-skin newt (*Taricha granulosa*) on the weir bridge rail. Dead. A gift maybe? These things are very *giftig* so you don't touch them with bare hands.

Lots and lots of white mushrooms, mostly *Inocybe geophylla*, a few of which are lilac.

November 01, 2016 (day +472, 366+106)

Rain 10.5 mm. Cistern level +79 mm, a rise of 15 mm. Level at the weir +311 mm WPB (scale), a fall of 15 mm. Sill depth +77 mm. Flow from private-property drain around 2.0 L/s.

East Path Creek is at a measured 6.3 L/s. No flow at the NE Arm spillway, though the pond is still high on the east side.



Pacific wrens  
*chit-chit*.  
Several. Not shy.

Just when you think it's safe to ignore all the mushrooms, a curious club coral emerges, *Calvaria purpurea* perhaps.



A perfect sighting of a hawk, perched, not noticing me peering at it from behind a small tree. I'm absolutely sure it might possibly have been a sharp-shinned, not a Cooper's.



Many ducks on the lake. Mostly ring-neckeds, counted thirty but there were more. Some buffleheads. Plus a widgeon and a shoveller or two.



November 03, 2016 (day +474, 366+108)

Rain 42 mm. Cistern level +109 mm SCB, a rise of 30 mm. The water now so high it doesn't matter if my boots leak or not – the water overtops them anyway as I wade out to the marker, so I take them off. Level at the weir +469 mm WPB (scale), a rise of 158 mm. The deck is



surprisingly still dry. Compared to last year, the beaver dam is higher, less porous, and the flow over the baffle is greater. Sill depth +250 mm. Flow from private-property drain around 2.0 L/s.

East Path Creek is at a measured 37.9 L/s. Almost a full culvert, but no spilling over the pathway. NE Arm spillway flowing strongly, I'd estimate at around 30 L/s. The NE Arm meadows are flooded, the bracken brown.

Coats Marsh Creek flowing seriously with a heavy weightiness beneath its hitherto brooky babbling. Entrance wetland overflowing at several litres a second, the path becoming a canal.



Fewer ring-neckeds,  
more  
buffleheads.

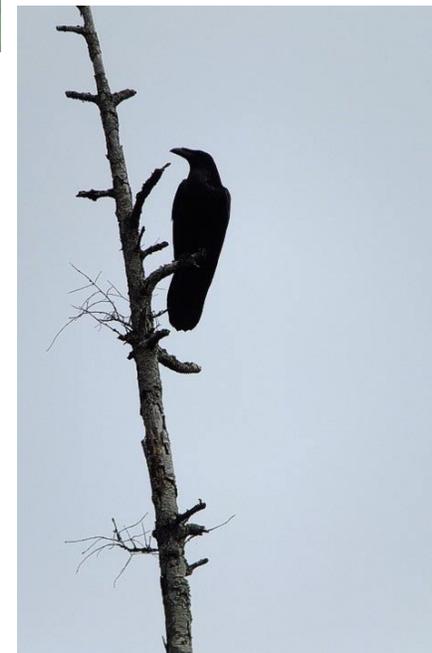
Angel wings,  
not a rare  
mushroom,  
but not  
common in  
the park.  
They grow on  
deciduous  
trees.

Small flocks  
of chickadees, one with what looked like a  
golden-crowned sparrow tagging along.

November 05, 2016 (day +476, 366+110)

Buffleheads in numbers, especially females  
(or is it hens?). Ring-neckeds too. Ravens,

I always forget to mention ravens, but they're always here. Gangs of  
curious chickadees. Autumn leaves not up to eastern standards, but  
here and there, one or two showing how it should be done.



Lots of fairy-ring mushrooms in all the greenswards. They have a nice mushroomy smell.

November 07, 2016 (day +478, 366+112)

Rain 26 mm. Cistern level +98 mm SCB, a fall of 11 mm. Level at the weir +384 mm WPB (scale), a fall of 85 mm. Sill depth +140 mm. Flow from private-property drain around 2.0 L/s.

East Path Creek is at a measured 14.1 L/s. Moderate flow at the NE Arm spillway.

Gloomy, grey-wracked clouds moving swiftly in a scumbled sky; only low-wattage light bulbs on.

November 11, 2016 (day +482, 366+116)

Rain 3 mm [gauge #2]. Cistern level +94 mm SCB, a fall of 4 mm. Level at the weir +320 mm WPB (scale), a fall of 64 mm. Sill depth +75 mm. Flow from private-property drain around

1.0 L/s. East Path Creek is at a measured 3.3 L/s. No flow at the NE Arm spillway.

Sombre day, a socked-in sky; not raining, but so close to tears.

About 30 ducks visible on the lake, mainly buffleheads and ring-neckeds with a few widgeons. Wrens, chickadees, siskins, and other small birds to be seen, not just heard now that the alders are leafless, but my camera and binoculars can't keep focused as they flit and flutter from branch to branch. Otherwise all very quiet.



November 15, 2016 (day +486, 366+120)

Rain 22 mm. Cistern level +101 mm SCB, a rise of 7 mm. Level at the weir +335 mm WPB (scale), a rise of 15 mm. Sill depth +85 mm. Flow from private-property drain around 1.0 L/s. East Path Creek is at a measured 8.3 L/s. No flow at the NE Arm spillway and pond level on east side low. Wetlands in the SE Arm (East Path Creek headwaters) flooded - as expected.

Overcast, only spitting with rain. Buffleheads, ring-neckeds. Rich soundscape includes "warque", "wack" (ravens), "skeu" (flickers), "chit", "cheep" (hosts of little brown birds), "chit-chit" (wrens), a babbling whistling+piping+whinnying (bald eagle), "croaks" (frogs), drumming (woodpecker), "toreeee" (towhees), warbles (finches). I'm only slowly learning.

November 18, 2016 (day +489, 366+123)

Rain 6 mm. Cistern level +92 mm SCB, a fall of 9 mm. Level at the weir +311 mm WPB (scale), a fall of 24 mm. Sill depth +70 mm. Flow from private-property drain around 0.5 L/s. East Path Creek very slow at an estimated 1 L/s. Low flow rates have been underestimated in the past because of the presence of a vertical eddy at the culvert outlet when ponding on the west side is high.

No flow at the NE Arm spillway, but just a few tens of metres downstream from the spillway, flow was observed [right] even though the pond on the east side was a metre below the track. There is flow from the NE Arm even when the spillway is dry, presumably because water can percolate from the pond to the east through the rubble base of the track.

Area: using new Google Earth images and the polygon tool, the main area was estimated at 55116 m<sup>2</sup> and the weir bay 1730 m<sup>2</sup>. However, as noted in the budget table notes 3 and 4, these revisions have little impact, and so the old area values have been retained for consistency.



A cool 8°C. A wintery clammy quietness pervades.

November 24, 2016 (day +495, 366+129)

Rain 65 mm. Cistern level +115 mm SCB, a rise of 23 mm. Level at the weir +448 mm WPB (scale), a rise of 137 mm. Sill depth +220 mm. Flow from private-property drain around 1.5 L/s. No flooding at the weir. East Path Creek nearly full, gurgling through the culvert at estimated 34.7 L/s. Heavy flows across NE Arm spillway and from the wetland west of the entrance. New water budget calculations working out well. The beavers have certainly improved their dam since last year.

Cold air, clearing skies after prolonged rain. Two or three dozen ducks, mostly ring-neckeds. NE Arm wetland very flooded and froggy. Alder catkins out.



Most mushrooms are done, but found bright white coral fungi in the forest gloom, along with junco's flirting their equally-white feathered tails.

November 28, 2016 (day +499, 366+133)

Rain 66 mm. Cistern level +111 mm SCB, a fall of 4 mm. Level at the weir +442 mm WPB (scale), a fall of 6 mm. Sill depth +215 mm. Flow from private-property drain around 1.5 L/s. Still no flooding at the weir. After more than two inches of rain! East Path Creek same at estimated 32.6 L/s. Heavy flows across NE Arm spillway and some also from the minor spillway 200 metres north. Puddles in the clearings.

Met an ex-duck-hunter. Says teals are getting rarer now everywhere, and migratory ducks use the lake as a resting place - it's not good to disturb them.



December 5, 2016 (day +505, 366+139)

Rain 20 mm. Cistern level +103 mm SCB, a fall of 8 mm. Level at the weir +366 mm WPB (scale), a fall of 76 mm. Sill depth +100 mm. Flow from private-property drain around 1.0 L/s. Everything in moderation. East Path Creek at estimated 10.1 L/s. No flow across NE Arm spillway surface, but pond to the east is full and there's flow down to the lake.



Breezy fingertip-nipping day. Several dozen ducks. Mostly ring-neckeds, some buffleheads, and a far-off glint of emerald green (mallard), speaking of which, the mosses are thriving in the long-shadow sun that now unaccustomedly threads through the boles beneath the canopy. The solstice is nigh.

December 11, 2016 (day +512, 366+146)

Snow/Rain 15 mm. Cistern level +108 mm SCB, a rise of 5 mm. Level at the weir +363 mm WPB (scale), a fall of 3 mm. Sill depth +90 mm. East Path Creek at estimated 9.8 L/s.

Patchy foot-, hoof-, and paw-printed snow. Lightly overcast. A wintery silence, even the ravens are quiet; only what used to be called winter wrens can be heard. Ice on the lake, mist on the ice, the ducks sheltering among the tawny reeds.



Paths strewn with small alder tree branches. Can't have been the weight of the snow, not enough of it, or the wind, only the leafless alders affected. The diameter of the break points are remarkable similar, about one inch. Some strange cold-weather biophysics going on?



December 16, 2016 (day  
+517, 366+151)

Rain gauge buried in frosty snow. It'll have to wait. Cistern level +99 mm SCB, down 9 mm. Level at the weir +354 mm WPB (scale), also down 9 mm. Sill depth 90 mm. East Path Creek 9.4 L/s.

Hoar-frosted-snow covered ice over most of the lake, but the creeks still flow, and the pond leveller still works.

I'm supposed to say the sun was weak, it being less than a week to the solstice, but welcomingly warm is more how I would describe it.



December 21, 2016 (day +522, 366+156)

Weir +411 mm WPB (scale), up 57 mm as ice and snow melts. Dank day as befits the year's nadir.

December 24, 2016 (day +525, 366+159)

Rain 31 mm.

Cistern level +100 mm SCB, a rise of 1 mm over 8 days. Level at the weir +395 mm WPB (scale), a rise of 41 mm over same period.

Melting ice and snow.

Sill depth +100 mm.

East Path Creek at estimated 12.8 L/s.

Some surface flow across

NE Arm spillway.



Still cold, but not finger-blowing or foot-stampingly so. A trumpeter swan in a patch of open water near the beaver dam. Otherwise only a few buffleheads around.

More frost-felled (?) brushwood among the alders everywhere. One stem already hosting a pink, almost-bracket, fungus.





An unusual walk on the weir side of the beaver dam. The water on the topped-up marsh side looked scarily high in places – one had to have faith in the beavers' engineering abilities to be there.

A final flourish to end the year; a troupe of twenty or more juncos foraging on the 4-foot by East Path Creek. They scattered into the bush as I approached, but quickly returned as I stood and watched.

They were finding lots to feed on, and gradually came closer and closer as I stood there. One would curiously glance at me from time to time, but clearly I was being accepted as part of the landscape. Mainly juncos, but a couple of towhees, and the fox sparrow that is wont to hang out there by the creek. A delightful year-end greeting from my friends at the marsh.

◇ Continued [here](#) in 2017.  
Previous [here](#).

