

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](#) .

Coats Marsh – human disturbance of migratory [ducks and geese](#).

Field observations—2017 (January—March)

THIS FILE ([Field Observations 2017-1](#)) IS A SUPPLEMENT TO:

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

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

January 6, 2017 (day +538, 366+172)

Gauge iced up, left as is. Level at the weir -335 mm WPB (scale), a fall of 60 mm.

East Path Creek frozen except in the culvert. Thick ice on the lake. Buffleheads in numbers taking refuge in the small patch of open water near the cistern. I'll discontinue visits while they shelter there. Only other birds around are what-we-now-call Pacific wrens but used to call winter wrens. I like their old name better.



January 18, 2017 (day +550, 366+184)

Rain after the ice finally melted 82 mm. Cistern level +86 mm SCB. Level at the weir +387 mm WPB (scale). Sill depth +100 mm. East Path Creek at estimated 18.5 L/s.



A balmy 10°C, raining. Still a very thin covering of ice on the lake. Rafts of buffleheads, and I think a few of ring-neckeds too.

Good opportunity to measure the level on both sides of the beaver dam, this time with two posts and my Suunto inclinometer. Heard a red-winged blackbird calling. Lovely rainbow - the full arc.

There is now a note on human disturbance of ducks and

geese at Coats Marsh while they are taking a break from their migrations [here](#).

January 24, 2017 (day +556, 366+190)

Rain 15 mm. Cistern level +81 mm SCB, a fall of 5mm. Level at the weir +372 mm WPB (scale), a fall of 15mm. East Path Creek at



estimated 10.8 L/s.

NE Arm spillway, a trickle, but pond to the east full.

Buffleheads, ring-neckeds, a few mallards, and eight or nine trumpeter swans.

January 28, 2017 (day +560, 366+194)

Rain 1 mm. Cistern level +92 mm SCB, a rise of 11mm. Level at the weir +317 mm WPB (scale), a fall of 55 mm. East Path Creek barely moving at 2.3 L/s. NE Arm spillway dry, but a trickle a little downstream on the lake side; pond to the east down quite a bit.

An altostratus kind of sky - drifting banks of high mists mostly only thinly veiling

the blue beyond. It's windy up there, but not down here, and the sun shines forth beneath the cloudiness from its winter abode low above the horizon, giving life to the carpets of mosses, some of whose ancestors once, back in Permian times, formed mighty forests.



Swans out on the lake being followed by ring-neckeds, buffleheads, a few mallards, and one or two widgeons gleaning the vegetation that the swans are digging up from the bed of the lake.

Another opportunity to measure the level on both sides of the beaver dam, this time with the addition of a laser leveller.

A nearby couple of swans trump a warning, and unlike the ducks, start making their way toward me with cautious assertiveness. Their calls may sound like trumpets, but to me, their short blurts sound like somebody who is only trying the instrument for the first time.



A bald eagle circles overhead. The ravens are raucous and garrulous, then perfectly quiet.¹ Only an occasional frog and flicker (good name for a pub) puncture the silence.

February 2, 2017 (day +565, 366+199)

Rain gauge iced up, not much in it. East Path Creek not moving.

Walked the Ridgeway, whose fate hangs in the balance. Crisp sunny day. The SE Arm wetlands covered in thin ice. Fibrous ice crystals, known as *pipkrakes*, emerging like squeezed toothpaste from hollows in the trackway.

A few chickadees, unusually free of any colour on their sides, but with give-away brownish backs crossed my path. They were too busy to linger.

Ducks gather at open-water patches around the lake's margin, the bolder drakes stand on the skim of ice willing the sun to do its job. No swans today.



¹ There is a curious myth among Native people that ravens were all originally white. The following story recounted by "J.D." appeared in the September 13, 1860, issue of the Daily British Colonist newspaper in Victoria. The article refers to "crow", but it is more likely that "raven" was meant, so I've changed it. The story is "...One time the raven went to see an old acquaintance, a chief named Can-nook. Being tired and thirsty he asked for a night's lodgings and a drink of water. Can-nook told him he might lodge there but never a drop of water should he have. After they had gone to bed the raven got up to help himself to water; but Can-nook's wife saw him and bawled out to her husband. Can-nook aroused himself and threw some wood on the fire. The raven tried to get out of the hole in the roof cut to let out the smoke, but Can-nook kept piling on the wood; the smoke increased in volume, and for some time the raven could not get out, and when he did he was perfectly black—having been pure white before that lamentable event. And all ravens from that day to this have been jet black."

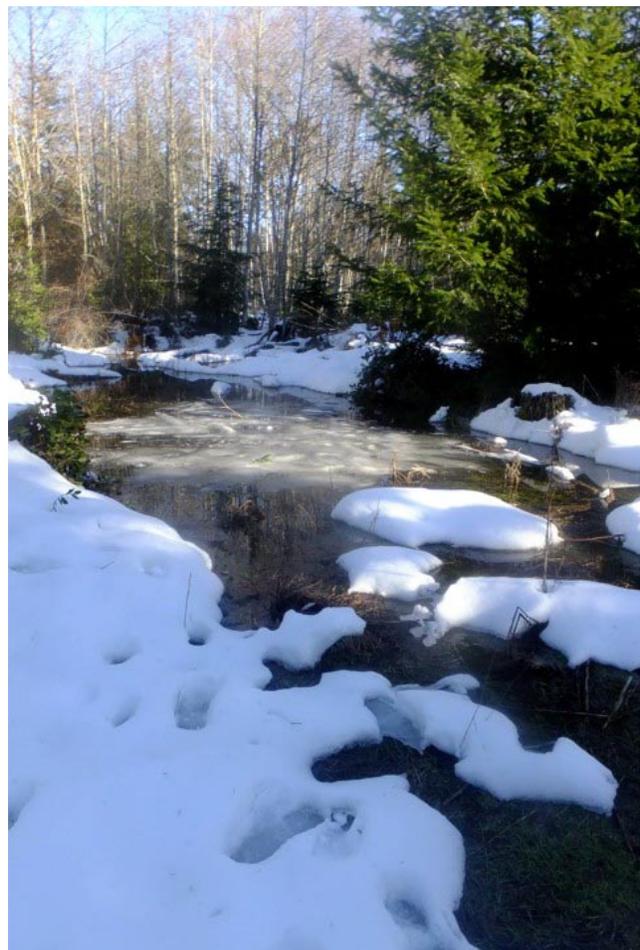


February 9, 2017 (day +572, 366+206)

A foot of snow to crump through. Deer tracks, but no sign of raccoons. Rain gauge buried. East Path Creek not moving. Weir +366 mm WPB (scale). Ring-necked ducks hiding out in the cistern. Lake frozen. How do you pass the time when you tire of looking at your feet and it's getting late? Figure out the notes in a randomly chosen scale, B^b major for example. In only three minutes, 200 plus metres, I had B^b.C.D.E^b.F.G.A.B^b. Trudge, trudge. Next problem.

February 13, 2017 (day +576, 366+210)

Gauge full of ice and snow, some obviously lost. I'm taking the El Verano figure 88 mm. Cistern level +94 mm SCB.



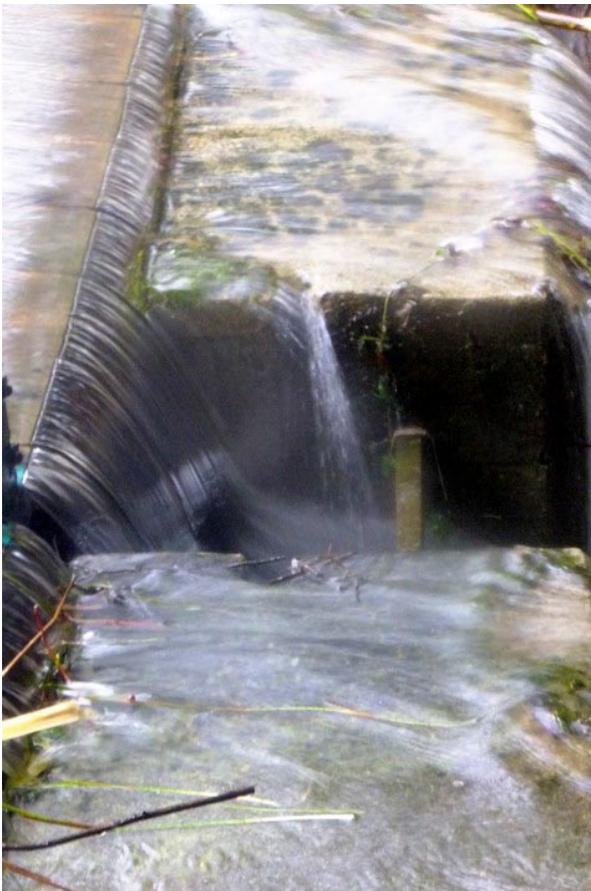
Level at the weir +399 mm WPB (scale). East Path Creek at estimated 18.9 L/s. NE Arm in full flood. A little clear water on the lake, swans, and the beaver is back too.

Frost trimmed twiggery, who knew?



February 15, 2017 (day +578, 366+212)

A wet, grey day. Rain 38 mm. Cistern level +130 mm SCB, a rise of 36mm. Level at the weir +768 mm WPB (scale), a rise of 369 mm – no that's not a typo. The weir deck has a silvery shoulder and the protective berm, safe, but being challenged. East Path Creek in full



flood, the level 180 mm above the top of the culvert, water extending 15 metres along each side of the path, a rough estimate 85 litres/sec. NE Arm spillway also flooded.

Water shooting out of the Coats Marsh Creek stone culvert like a bullet, not something to wade in without hanging on, just shy of 300 L/s.

February 18, 2017 (day +581, 366+215)

Back to normal after the snow melt and flood. Rain 12 mm. Cistern level +94 mm SCB. Level at the weir +427 mm WPB (scale). East Path Creek at estimated 25.7 L/s. Ducks are happier now the ice has gone: lots of buffleheads, mallards, ringed-necks, and two swans in weir bay. The paths still be-puddled, pudgy as J.C. would say, and the woodlands be-ponded.

NE Arm flowing strongly across the spillway and, unusually, still a flow across the small spillway further along East Path. No wind. Quiet, but for a few red-winged blackbirds singing away. Apart from them, get the impression nature is biding its time; paying attention to its own calendar; not risking being in haste just because the weather is mild.

February 21, 2017 (day +584, 366+218)

Rain 8mm. Cistern level +90 mm SCB, a fall of 4 mm. Level at the weir +363 mm WPB (scale), a fall of 64 mm. East Path Creek at estimated 16.1 L/s.

NE Arm flowing still across the spillway and still a trickle across the spillway further along East Path. Wind creating surf in the canopy, but it's quieter below. It still has a sting, but then by the lakeside you get a double-dose of sun, one directly, and one from its reflection in the sparkling water. Let's hear it for radiation therapy!

Usual suspects out on the water, including the pair of trumpeter swans. NE Arm soggy, hawk circling overhead.



Eagles heard in the woods along the Marsh Trail. Mallards in weir bay. Just an occasional out-of-season frog not evoking any response. Ravens quiet. The RDN maintenance people have cleared away some of the beaver debris limiting the flow over the baffle. Good plan, but as a result, the weir and creek have definitely been lacking drama this year compared to last, except that is for the post-snow flood on February 15.



February 25, 2017 (day +588, 366+222)

No measurements.

Cold, crisp, finger-chilling day, sunny but clouding over. Lots of ducks on the lake, all very busy, flying hither and thither in pairs and being very vocal. Two swans in the tawny reeds.



Tried the blue-flagged and orange-flagged rough trails along the south side. Blue-flagged route near the lake is not used much but is easy enough, but the orange-flagged trail further back in the bush is not a trail yet (and I hope it never will be). It's Sally Alley, long stretches through thick, tough salal. Tiring. This whole area should be left to itself and to the wildlife that likes snags and seclusion.

February 26, 2017 (day +589, 366+223)

Rain 12mm. Cistern level +98 mm SCB, a rise of 8 mm. Level at the weir +323 mm WPB (scale), a fall of 40 mm. East Path Creek at estimated slow 4.1 L/s. Patches of snow still. Lone American robin busily foraging in the lichen on the tree branches. Common bird but rarely seen up here.

March 3, 2017 (day +594, 366+228)

Rain 3.5mm. Cistern level +94 mm SCB, a drop of 4 mm. Level at the weir +287 mm WPB (scale), a fall of 36 mm. East Path Creek at estimated gutter-sized trickle 1.5 L/s.

Song sparrow at the cistern boldly watched me measure.

Altostratus veiling the sun like a headlight in fog; no squinting or sunspecs required. A few dropples dimpling the lake's surface.

Tranquil, except for one or two mallards making the place sound like a barnyard.

Many buffleheads on the lake, most hanging out in pairs. Some ring-neckeds too, but no swans.

First insects of the season. Who knew that some pond skaters have wings (no jokes please about the Detroit Redwings).



March 10, 2017 (day +601, 366+235)

Rain 22mm. Cistern level +104 mm SCB, a rise of 10 mm. Level at the weir +293 mm WPB (scale), a rise of 6 mm. East Path Creek a languid 1.7 L/s.



Many ducks again, buffleheads especially, one very loud honker (Canada goose), and probably a few widgeons but they are so shy only the bright-white bars on their wings as they flee say what they are. Some midges around. Ground still cool, mist rising like smoke from the burn-pile clearings as the sun gets to work.



Took a walk down the Ridgeway, the endangered trail. You can see the thickets of red alder in the wetlands on either side. Lots of wren noises from within.

Also walked, waded, and bushwhacked, by along and between, the Stump Farm Streams. Beautiful area this time of year with small tinkling waterfalls, free-flowing rivulets of crystal-clear water, and vivid-green mosses and lichens on the old stumps.



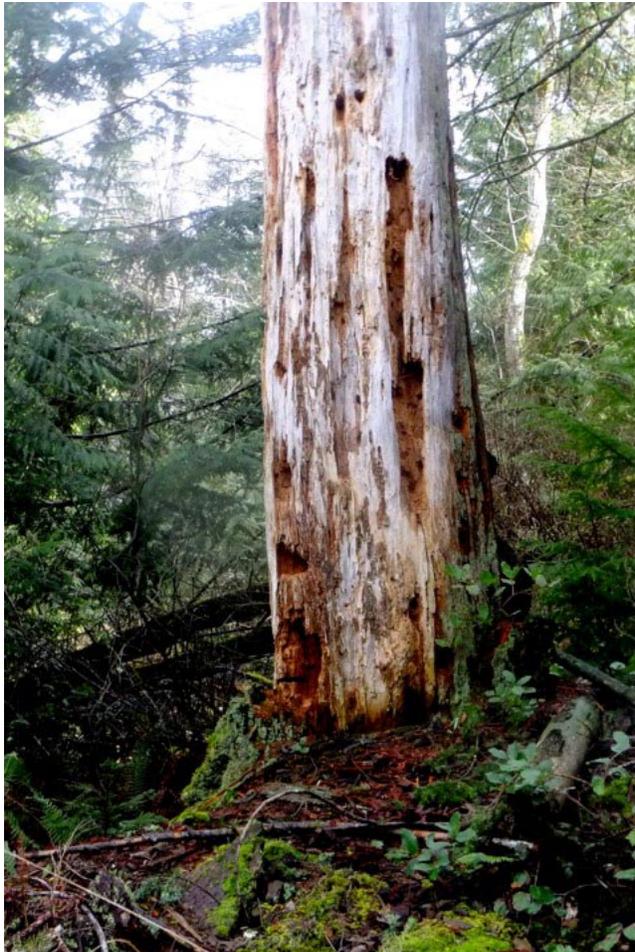


The “small spillway” on East Path, north of the NE Arm spillway, looking north. When it floods, water fills the hollow on the right and overflows across the path and down through the woods to the lake, which is on the left. It’s easy to underestimate run-off on Gabriola because significant volumes of water flow unseen up to five metres below the surface through bedding-plane-parallel fractures in the bedrock. This is probably an example of a location where this happens. Water balance analysis indicates that in the wet season, volumetric flow into the lake is greater than that in the creeks alone.

March 15, 2017 (day +606, 366+240)

Rain 25 mm. Cistern level +129 mm SCB, a rise of 25 mm. Level at the weir +360 mm WPB (scale), a rise of 67 mm. East Path Creek strong at 18.0 L/s. Minor flow at NE Arm spillway.

Dozens of ducks on the lake (buffleheads, ring-necked, and a few mallards). Grandchildren helped; they found three red-legged frogs and a rough-skinned newt. Lots of bird songs and calls from the bush. Beaver dam full right to the top.



The park is lucky in that loggers of the past left plenty of snags. In some similar areas on the island, the western side of the Mallett Creek watershed for example, 100% of the trees were logged leaving nothing for the wildlife.



March 18, 2017 (day +609, 366+243)

Level at the weir +399 mm WPB (scale), a rise of 40 mm.

Checked out the uppermost upper reaches of East Path Creek, which is flowing strongly at the moment



Above: McGuffies Swamp. The west "tail" end of the swamp is as close to the source of East Path Creek as you can get. Mallards.



Left: Leaving McGuffies Swamp entering High Point Meadows.

Above: Leaving the meadows in disorganized fashion, and entering the woods to begin the steep descent to Coats Drive.



Left: Step-by-step descent to Coats Drive.

Right: At the bottom, flowing smoothly toward the half-buried culvert beneath Coats Drive.



Below left: Ponding near the head of the SE Arm wetlands. From here, a clear run west to East Path via the Appleyard ponds.

Below: A drier route - the Ridgeway.



March 19, 2017 (day +610, 366+244)

With the insects come the birds. Almost a constant background twittering now just above your hearing threshold; mostly little guys with high-pitched tweets, always it seems deeper in the forest than you are, except that is for the chickadees who come out of their way to greet you.

Flock of yellow-rumped warblers "butter butts" and a nuthatch in the snags around the beaver lodge. Swallows are back.



March 22, 2017 (day +613, 366+247)

Rain 38 mm. Cistern level +144 mm SCB, a rise of 15 mm. Level at the weir +366 mm WPB (scale). East Path Creek at 10.6 L/s. Minor flow at NE Arm spillway.

Buffleheads, ring neckeds, and a few mallards. A golden eagle circling at the west end of the lake.



March 27, 2017 (day +618, 366+252)

Rain 22 mm. Cistern level +149 mm SCB, a rise of 5 mm. Level at the weir +366 mm WPB (scale), no change. East Path Creek at 14.8 L/s. Followed NE Arm flow up from the lake to the spillway. Although there was no flow across the surface of the track, the subsurface flow from the ponding on the east side was substantial and at the lake fully equal to that in East Path Creek.

Went looking for brown creepers (*Certhia americana*) that I know must be in the park because I've heard them [unlike professional consultants, who spend one day here before going off to write up their colourful reports for officialdom, I don't count a sighting unless I actually see the bird]. And I have seen one not that far away in similar wet, coniferous habitat as exists within the CP. No luck today though.



Rainbow funghi in the woods (alder deadfall).

April showers in heavy downdrafts turning the lake silvery; some drops bouncing off the surface just like photons from the sky. Over in no time. Geese somewhere out there, but I don't see them.

Failing to find creepers, resorted to looking for in-season skunk cabbage. I don't see those in the CP either.



First wildflowers of the season. Possibly hairy bittercress (*Cardamine hirsuta*), tiny things on the south-facing bank of the NE Arm stream just below the spillway on East Path.





Rills and rivulets from the NE Arm just short of the eastern shore of the lake. The fabled spring that those that know like to talk about?



One life ends; another begins.

March 28, 2017 (day +619, 366+253)

Grey, spotting-with-rain day. Brown creeper hunt renewed. After about six hours altogether (today and yesterday) turned for home and took one last look at the lake. As they often do, a flock of chickadees came by, and as I held up the camera, one flew down and perched briefly on my hand. Just a few moments later as I re-directed the camera at its companions, there running up the tree next to us was a brown creeper. They scamper so quickly, almost like mice, there was just one chance for a photograph, but I got it. It's a bit blurry, but never mind, when I find the skunk cabbage, the picture will be better.



March 31, 2017 (day +622, 366+256)

Walked, bushwhacked, and waded the area between the Ridgeway and the soggy SE Arm wetlands and East Path creek.

A sleepy owl, a lethargic snake, and sparrows, one song sparrow behaving tantalizingly like a northern waterthrush down at the water's edge, and another nearby in the trees, a sooty fox sparrow, but without a trace of tell-tale yellow on its beak.

In thigh-high salal, a rustling, just more than a towhee makes. In bear country, something to alert the senses, but here? Nah! But there it is again. Swirled around. No bear, but moving briskly up the slope, a very large raccoon.



The SE Arm wetlands, the East Path Creek reservoir of water coming down from High Point Meadows and McGuffies Swamp. The other fabled spring of the desktop explorers.



Left: Ren Yugao's picture of a 298-million year old forest with *Sigillaria* trees towering up to 80 feet high above tree-ferns up to 20 feet tall. *Sigillaria* are related to today's club mosses.



Right: Picturing mosses on erratics in the SE Arm is now an elbows-and-knees job. Possibly copperwire moss, *Pohlia nutans*, but there are several other possibilities.



Below: An Appleyard pond on East Path creek.



March 31, 2017

OCPs and LUBs. Whither the marsh lands?

"If I can comprehend but not control, I need not gloom my days with futile dread..."

Claude McKay ◇

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