

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—2019 (July—December)

THIS FILE ([Field Observations 2019](#)) IS A SUPPLEMENT TO:

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

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

2019 NOTES

July 2, 2019 (day 1445, 1096+349): NanRG cum. 1023.2 mm.

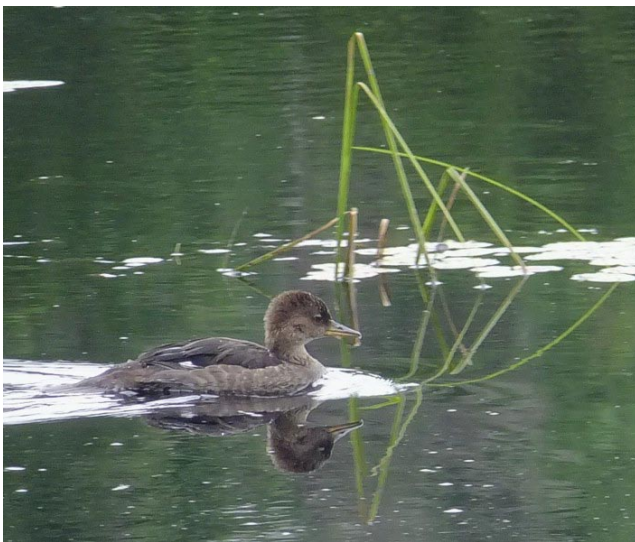
The watchers and the watched. Two bald eagles and a lone, young hooded merganser shown below picture of one of the eagles. No sign of duckling's parents or siblings.



July 4, 2019 (day 1447, 1096+351): NanRG cum. 1023.2 mm Cistern +83 mm SCB.

No eagles and ducks way off at the west-end enabling me to get a lake level reading at the cistern. Level is declining due solely to evapotranspiration exactly as it has in previous years.

Five ducks enjoying being out in the open. All hooded mergansers, two adult females and two youngsters looking several weeks old and a third rather younger. They're diving ducks so they don't always appear together in the same photograph.



July 5, 2019 (day 1448, 1096+352): NanRG cum. 1023.2 mm.

New source of inflow to the lake in the northeast corner. Runs into the lake corner from the NE, accessible from the Marsh Trail starting west of where it meets East Path and bushwhacking south through



alders. Map 2.20 updated in the atlas (File: 661). The flow merges with that of the NE Arm flow from the east in a ponded area with multiple watertracks and rivulets close to the lake shore. Not noticed before because of heavy going through reeds, dense salal, deadfalls, and a snarl of rose thickets. Beavers very active here.



This new part of the catchment area probably includes the flow across and under East Path at the minor spillway north of East Path's junction with the NE Arm Trail and south of its junction with the Marsh Trail. Marked by alders. Photo of

East Path, left, taken at this point November 28, 2016 looking north. There's a pond to the right of the visible track in winter.

July 12, 2019 (day 1455, 1096+359): NanRG cum. 1038.6 mm. Weir +49 mm WPB scale. Cistern +89 mm SCB.

July rain halting the decline in lake levels. Private drainage at the weir still running. No sign of baffle leakage. All fairly quiet.



Deer with one spotted fawn close behind her. They are very shy within the park in curious contrast to how they are on people's lawns in summer.

Pacific-slope flycatchers, almost impossible to capture with the camera, seem very common this year as they



forage for insects among the branches of shady trees, only their almost-whistled drawn-out "wheep" or more pithy aspirated "whit" calls to companions making their presence known, more languid than some sound bites on the web.

July 16, 2019 (day 1459, 1096+363): NanRG cum. 1043.0 mm. Weir +30 mm WPB scale.

July 17, 2019 (day 1460, 1096+364 = 1461-1): NanRG cum. 1043.2 mm.

THAT CONCLUDES THE FOURTH YEAR OF OBSERVATIONS AT THE MARSH

Interesting to see that despite the rainfall being below average, the levels of water in the marsh are not. This is because the amount of precipitation is not the limiting factor; it is essentially the

storage capacity of the lake, which in part is determined by the activities of the beavers.

Date	NanRG	Weir pool	Lake level (cal.)
Jul. 17 2016	1306 mm	-660 mm	.027 + .212 = +239 mm
Jul. 17 2017	1277 mm	-687 mm	.185 + .212 = +397 mm
Jul. 17 2018	1143 mm	-671 mm	.202 + .212 = +414 mm (extrapolated)
Jul. 17 2019	1043 mm	-619 mm	.225 + .212 = +437 mm (extrapolated)

July 21, 2019 (day 1464, 1461+3): NanRG cum. 2.6 mm. Weir +18 mm WPB scale. Cistern +54 mm SCB. Sunny. No sign of ducks on the lake and any birds in the woods very quiet. Private drainage below the weir has finally ceased.



July 22, 2019 (day 1465, 1461+4): NanRG cum. 2.6 mm.

The small patch of *Torilis japonica* (Japanese hedge parsley, an invasive species) at the NE Arm spillway discovered in summer of 2016 is still there, but shows no sign of spreading aggressively; however, an entirely new patch found today on a six-metre stretch of the Stump Farm Trail's 4-foot. Clearly being spread by trail users. Their seeds are like Velcro; they stick to clothes, fur, hair, and whatever else brushes against them. Unlikely to be being spread by horses here, unlike on the old Kensington Lands where it has now become common. Perhaps by deer, or bikers who travel further afield than walkers and who use the RP trails oblivious (understandably) of the fact that

they're meant to be pedestrian only. A few small plants also found at the Stump Farm site itself, again where they've never been seen before. There are also a few plants in the western burn-pile clearing in an area frequented by deer, first seen in 2016, but these remain unobtrusive and hard to find.

Tansy ragwort cull in previous years appears to have been effective, not 100% of course but significantly so, especially along the Marsh Trail, East Path, Ridgeway, and in the burn-pile clearings. Although the cinnabar moth caterpillars help, they only seem to be damaging around ten percent of the plants.

July 31, 2019 (day 1474, 1461+13): NanRG cum. 3.9 mm. Weir -18 mm WPB scale. Cistern +11 mm SCB.



More tansy ragwort culling. Major trails are clear, though there are more plants scattered about in clearings in the woods, but only occasionally in dense patches.

Much more Japanese hedge parsley found. It clearly likes trails, especially narrow woodland trails, but it is also found in places I imagine only deer frequent. Some also seems to be being spread by water; commonly seen in dry watertracks, along grassy banks of creeks, and in trail gutters.

Not much else going on.

Woodland tarweed (*Madia madioides*, lacking a few tri-fingered petals) and hemp-nettle (*Galeopsis tetrahit*).



A newt larva, presumably a rough-skinned newt the only newt in BC, shortly before becoming an eft (no gills, legs visible but not yet fully developed) in the cistern.

July rainfall was average but so far this calendar year we've had only 440 mm while the 75-year average is 578 mm.

August 3, 2019 (day 1477, 1461+16): NanRG cum. 6.4 mm.



With the seasonal sinking of the level of the lake, a chance to explore its muddy parafluvial fringe, the lake's intertidal as it were.

Found ~~two~~ (make that four) new plant species there, small bedstraw (*Galium trifidum*), enchanter's nightshade (*Circaea alpina*), water minerslettuce (*Montia fontana*), and lesser spearwort (*Ranunculus flammula*), all absent in the upland, but said to be common in "marshes, fens, bogs, swamps, and on the banks of sluggish streams"

[Pojar & MacKinnon].

Also American brooklime previously found only in rain-filled ruts made by bicycles, and small-flowered forget-me-nots along the watery edges of understoryless thickets of dead and spindly saplings.



These marginal communities of plants with the tiniest of flowers remind me of those I once saw in the stony polar desert of Cornwallis Island. They thrive on the lee side of cobblestones where the sparse drifting snow finds shelter from the cold dry winds that blow unhindered over the flat treeless landscape. In the month-long days of summer, these small pockets of snow melt and provide moisture for dwarf shrubs, miniature wildflowers, mosses, lichens, hypoliths, and a host of tiny insects, forming isolated habitats in the otherwise seemingly lifeless arid vastness beyond.

August 9, 2019 (day 1483, 1461+22): NanRG cum. 6.4 mm. Weir -44 mm WPB scale.

Move away slowly. That's a hornets' nest (*Dolichovespula maculata*). They were actually disinterested in my presence.



Meanwhile, clump of musk monkey-flowers (*Erythranthe moschata*) in a drying-out muddy inlet. Hairy.

All very quiet.

August 12, 2019 (day 1486, 1461+25): NanRG cum. 19.8 mm.



New signage in the 707 CP and CM RP offers a choice of numbers: Post Number, Location Number, Signage Number (always 1 because it's a photocopy), and a GVFD Access Number (why two #10s?). Oh! and the number to report on your cell phone in emergencies (good luck) is the Trail Marker Number.



August 18, 2019 (day 1492, 1461+31): NanRG cum. 19.8 mm. Weir -35 mm WPB scale. Cistern -35 mm SCB.

Very quiet still, though the ravens are back. There are birds around but they busy themselves without calling or singing. No ducks on the lake that I can see or hear.

Spent time trying to distinguish black medic (*Medicago lupulina*) from



lesser trefoil (*Trifolium dubium*) when neither have gone to seed. Opinions vary among experts on how best to do it, exceptions to their rules appear to me to be common, but since both, besides being trail weeds, are common lawn weeds, for present purposes, it doesn't really matter. I'd just like to know.

Meanwhile, back at the lake shore, not only a new species of plant but one in a new division (phylum), a liverwort, *Pellia neesiana*. Liverworts, I gather, have been around for over 500-million years and recent research has given them and hornworts venerable standings separate from mosses, which were formerly all grouped together, and still are informally, as bryophytes.



Stranded duckweed nearby (*Lemna* sp.). Relatively uncommon on the lake, substantial parts of which host dense canopies of water shield.

Small patch of dagger-leaf rushes and a frog or two. The parafluvial fringe is where it's at.



August 30, 2019 (day 1504, 1461+43): NanRG cum. 24.0 mm. Weir -66 mm WPB scale. Cistern -75 mm SCB.



Sunny days. All the summer tasks are done. All the world is just quietly waiting.

Add water smartweed (*Polygonum amphibium*) to the species lists. Picture taken end of last June but according to Lyons and Bill Merilees, this aquatic plant is "often not noticed".

September 2, 2019 (day 1507, 1461+46): NanRG cum. 24.0 mm.

The verges of trails and their 4-feet, disturbed ground, bare and waste places is where weeds flourish. And nowadays, the Stump Farm site, Christine's old place, there are plenty of those, but among them,

some left-behind lobelia that has survived the winter and a feverfew plant, a perennial, in bloom despite the dryness.



September 7, 2019 (day 1512, 1461+51): NanRG cum. 26.1 mm.

This summer has been a little unusual in that there appears to have been no

summer resident ducks; usually there're a few mallards that stay over. First duck sighting today for several weeks was not a mallard but a lone male wood duck in summer plumage.

Eaton's asters out along the shore.



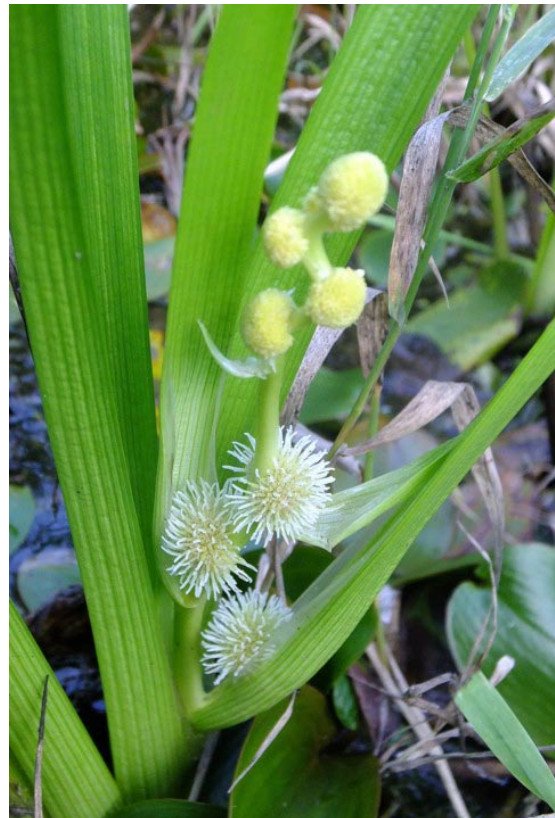
September 10, 2019 (day 1515, 1461+54): NanRG cum. 28.5 mm. Weir -74 mm WPB scale. Cistern -98 mm SCB.

The water's retreating, but no more than usual this time of year.



Bewick's wren caught grooming itself in the bushy riparian, only its buzz call attracting attention.

Diverse-leaved water-starwort with different floating and submerged leaves, and picture-perfect bur-reed.



September 24, 2019 (day 1529, 1461+68): NanRG cum. 88.4 mm. Weir +24 mm WPB scale. Cistern -44 mm SCB.

Mixed clouds and sunny breaks. Lots of rain recently, almost twice the average for the month, making up for the dryness of the spring and summer. Creeks not running but private property drain at the weir is. All very quiet. No ducks and what small birds there are, are moving in flocks so unless you're near one, you don't hear them at all. Mushroom season underway.



Many webs hung between the dead thistles in the clearings, the work of cross orb-weavers (*Araneus diadematus*).

September 29, 2019 (day 1534, 1461+73): NanRG cum. 95.8 mm.

First of the fall migrants. Canada geese, flock of about eight, quiet and very shy, so it's unlikely they're city types. Unusually large number of jays around.



October 2, 2019 (day 1537, 1461+76): NanRG cum. 95.8 mm.

Three mature alders down across East Path, all due to rot. A couple of days ago it was jays making noise, today it was mostly flickers.

More migrants, a few ducks, mallards and five or six of another dabbling duck species not easily recognized.

Rain last month, but the year-to-date's at 532 mm still below the 649 mm average.

October 6, 2019 (day 1541, 1461+80): NanRG cum. 104.2 mm. Weir +24 mm WPB scale.

The geese have left.

October 21, 2019 (day 1556, 1461+95): NanRG cum. 168.7 mm. Weir +91 mm WPB scale. Nothing seen on the lake.

November 8, 2019 (day 1574, 1461+113): NanRG cum. 169.9 mm. Weir +107 mm WPB scale. Cistern +108 mm SCB.

October another drier than average month, the year-to-date at 606 mm compared to the average 754 mm. Long spell of high-pressure weather, sunny intervals, no wind, calm waters, and no rain beyond a morning of "heavy mist". Creek beds mostly dry; nothing is yet running.

Ravens and frogs the only creatures making noise. Some of the bigleaf maples have been a spectacular golden yellow this fall. Mushrooms everywhere.



The usual winter residents are slowly assembling on the lake, about two dozen ring-necked ducks, one lone male bufflehead with a few females.

November 18, 2019

(day 1584, 1461+123): NanRG cum. 227.2 mm.

Weir

+201 mm WPB scale.

November 21, 2019 (day 1587, 1461+126): NanRG cum. 227.2 mm.

Coats Marsh Creek is running. Thanks to the beaver dam this is fairly normal in spite of unusual dryness this year. In 2015, flow start was November 25 (day 130); in 2016, October 15 (day 89); in 2017, November 15 (day 120); in 2018, flow initially started August 30 (day 43) due to a breach in their dam but this was repaired and flow stopped, re-started October 31 (day 105).

December 1, 2019 (day 1597, 1461+136): NanRG cum. 230.4 mm.

Coats Marsh creek still running, and some ponding and trickling in Stump Farm Number 2 Stream and Little Creek, but nothing yet in Stump Farm Number 1 Stream or in East Path Creek. Water level in the weir pool is now above the sill and running but very little from the pond leveller.

Rain last month least since 1979 and year-to-date's at 666 mm well below the 932 mm average. November has only been drier in eight of the last 75 years.



No sign nor sound of wildlife on the mist-shrouded wintry lake. Only a lone raven calling. Drizzle dimpling the small patches of clear water in the covering of frosted ice, and drizzle adding to the sparse soundscape as it drips from the trees.

No ducks this year? A sign of dwindling wildness? or just another of the weather's vagaries?

December 6, 2019 (day 1602, 1461+141):

NanRG cum. 239.1 mm.

..... the latter. Flock of thirty ring-necked ducks. All but one of them males. The smallness of the marsh and its confining trees don't bother ring-neckeds. They can, if need be, like mallards, spring directly off the water into flight.



This time of year, I like to stop now and then by an old cedar or Doug.-fir when its bark is illuminated by the slanting sunshine, and peer at the bryophytes flourishing there. These forests are not noted for their biodiversity; yet, this looks like a jungle to me, although I don't think I can reliably name even one of the species, except perhaps for that lipstick one.







December 8, 2019 (day 1604, 1461+143): NanRG cum. 240.0 mm.

All of a sudden, ducks galore, and four trumpeter swans thrown in for good measure. Two flocks of ring-neckeds; buffleheads; a small group of northern shovelers; a few mallards; and some widgeons.

An entertaining half-hour skulking in the woods, far enough away to avoid alarming them but thereby restricting my view and leaving me



resenting my camera's myopia.

Lobaria oregana, a wrinkled lettuce-leaf-like lichen with bald white undersides. And



snowberries, common enough on Gabriola, but seldom seen in the park.

December 12, 2019 (day 1608, 1461+147): NanRG cum. 253.0 mm.

Stump Farm Number One Stream running. Not much "proper" rain this fall. The barometer is unusually high when it rains instead of being depressed, and as a consequence the rain is short-lived, more like a passing heavy shower than a prolonged deluge.

December 23, 2019 (day 1619, 1461+158): NanRG cum. 323.4 mm. Weir +354 mm WPB scale.

December 31, 2019 (day 1627, 1461+166): NanRG cum. 340.7 mm. Weir +344 mm WPB scale. Cistern +335 mm SCB.



A blustery day, racked puffs of clouds, the lower ones massed mafic-greys, laden with darkness, shedding sooty ragged whisps that race ahead, the higher ones shiny white, like piano keys scudding across the sky allowing only the briefest glimpses of sunshine between smatterings of rain. Curious down-drafts, the surface of the lake coruscating as ackers and cat's paws slide across it snake-like, hither and thither, as if they were alive. A skein of honking geese passing by, heading nor'west on the wind. A new small beaver dam in the NE Arm. Buffleheads and ring-neckeds out and about.

The lake at its highest level I've ever recorded; yet, only twice has this year's rainfall on Gabriola been less than it was in all the years since 1944. East Path Creek is dry! ◇ [Next file](#) [Previous file](#).