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 breeding and migratory ducks and geese.

Coats Marsh Management - paper on.

Field observations—2020 (July—December)

THIS FILE (Field Observations 2020) IS A SUPPLEMENT TO:

"Observations at Coats Marsh, Gabriola Island" File: 673.

For an up-to-date list of supplements see here .

July 1, 2020 (day 1792, 1461+331): NanRG cum. 848.4 mm. Weir +238 mm WPB scale. Cistern +235 mm SCB.

Rain in June 58% above long-term month's average, very welcomed by the plant life. Annual total still 8% below average for the time of year but that's pretty normal.

These are the awaited 1-2 mm flower buds of Hampshire purslane (June 13, 2020), four sepals, apetalous (no petals), and sessile (no stalk).

Ducklings now juveniles, maybe in three weeks they'll be ready to fly.

Still no bats.

Purple-leaved willow-herb (*Epilobium ciliatum*) found at the lake side added to the species list.

Indian-pipe very common this year. Often wonder if their flowers droop because someone has unkindly told them that they’re parasites.

Oxeye daisy time. Prolific. They don’t attract bees in the way does broom, nearly all the few insects on them are dark-coloured thrips with only occasional bright-yellow crab spiders or a very few tiny gnat-sized flies (2–3 mm), delicate, dark, and harmless.

July 11, 2020 (day 1802, 1461+341): NanRG cum. 864.1 mm.

Just beautiful displays of self-heal this year. Our OED 1971 defines weeds such as this as:

“herbaceous plants not valued for use or beauty, growing wild and rank, and regarded as cumbering the ground or hindering the growth of superior vegetation”.

I like them, just so long as you don’t include bindweed.

A rare chipping sparrow hanging out with a bunch of dark-eyed juncos at Stump Farm. The juncos, more often seen in summer than they used to be a few decades ago, make clicking noises just like those old-fashioned tin clicker toys. Maybe that’s why this chipper was enjoying their company.

July 17, 2020 (day 1826, 1461+365 = 1827–1): NanRG cum. 864.1 mm.

THAT CONCLUDES THE FIFTH YEAR OF OBSERVATIONS AT THE MARSH

Again, despite rainfall being substantially below the annual average, the levels of water in the marsh are not. [NanRG = Nanimo Airport rain-gauge chosen because its recordings more closely match rain-gauge readings up at Coats Marsh than those at Somerset Farm.]

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)
Jul. 17 2020	864 mm	–473 mm	.336 + .212 = +548 mm (interpolated)

July 21, 2020 (day 1830, 1827+3): NanRG cum. 0.0 mm (norm. 4 mm), Weir +158 mm WPB scale. Cistern +168 mm SCB.
[cal. datum: weir –0.489 m, cistern +0.535 m, Δ = 1.02 m]

Pond leveller has stopped running and the beaver(s) have stopped flow over the baffle. All very quiet.

Wood nymphs (*Cercyonis pegala* ssp. *incana*) which are red-listed in BC. In the clearings, very dark brown. They flutter from place to place rather slowly and are easy to follow through the tall grasses, “winking and blinking” when they alight before the camera is ready and then closing their wings “like hands held with their palms together” [*Who has seen the wind*, W.O. Mitchell].

In just a few days it seems the hairy cats-ears and kindred species have taken over the invasion from the oxeye daisies. Buzzing bees and hover flies (*Syrphidae*) moving busily from flower to flower very much liking the change.

July 28, 2020 (day 1837, 1827+10). NanRG cum. 0.0 mm (norm. 16 mm).

Water-level observations reduced, I don’t need more data and taking regular readings sometimes creates unnecessary disturbance.

The RDN are going to add another pond leveller.

Some people call the *Syrphidae*,those colourful flies that mimic bees and wasps, “flower flies”, but others call them “hover flies” and here perhaps is one left demonstrating why. With yellow fuzz on its face it might be *Eristalis flavipes*, but then again with an uncountable number of wings and long antennae it might actually be a bumble bee. All I know is that the flowers are tansy ragwort in a burn-pile clearing.

Below are a couple more *no-common-name* visitors to these unwelcome plants. Once in a while they’ll encounter a camouflaged web-less all-yellow crab spider (*Thomisidae*) seen here crawling out of my tansy ragwort collection bag.

Another “wort” often seen these days is feverwort, better known as centaury (*Centaurium erythraea*). Its lilac-pink flowers in the margins of trails are a welcome sight.

Hardhack (*spirea*) still very common but less so it seems than a few decades ago when its impenetrable thickets were the dominant shrub in most of the wet places on the island.

Lorquin’s admiral that’s been in the wars, one hind wing missing, other wings ragged, but with vital organs intact and able to fly like a pro, sharing the stage with cinnabar moth caterpillars.

There is still at least one pied-billed grebe together with a few mallards on the lake though they’re not easy to spot now they’re in their drab summer plumage.

Very few dragon- or damselflies, and no bats or swallows in the summer evenings. Odd. Doesn’t appear to be an island-wide phenomenon.

<u>July 31, 2020</u> (day 1840, 1827+13). NanRG cum. 0.0 mm (norm. 19 mm).

Rain in July 33% below long-term month’s average, but variations this time of year are commonly large. Annual total so far 9% below average.

Some days on these hot sunny days, crushed dead leaves underfoot are all that breaks the mid-day silence.

<u>August 5, 2020</u> (day 1845, 1827+18). NanRG cum. 0.0 mm (norm. 23 mm).

Yellow-faced bumble bees (*Bombus*

vosnesenskii), looking white-faced to me, are becoming common. This one is on chamomile (*Anthemis arvensis*), which despite its familiar name and sporadic appearance on the island, is rare in the park. Probably from a long-gone garden. Maybe these newbie bees will change all that.

Another newbie, Japanese hedge parsley (*Torilis japonica*), practically unknown five years ago, is beginning to show its invasive potential in clearings in the 707-SW CP just north of the park.

First seen on Gabriola in the Drumbeg parking lot, it now occurs along hiking, biking, dog-walking, horse-riding, and deer trails everywhere on the island.

Its seeds are covered in hooked hairs like Velcro.

Rather elegant for an invader, though they don't think so in places like Minnesota and Wisconsin where their response is "if you see it, kill it".

<u>September 3, 2020</u> (day 1874, 1827+47): NanRG cum. 43.7 mm (norm. 37 mm), Weir +46 mm WPB scale. Cistern +55 mm SCB. [cal. datum: weir –0.601 m, cistern +0.422 m, △ = 1.02 m]

Rain in August 58% above long-term month's average but annual total so far 6% below average. Nothing extraordinary.

Lake looking good. Insects back to their more usual abundance. Dragon flies hunting among drifting thistle down.

Seems like more summer resident ducks than usual, but hard to see them when they’re among the watershield in bright sunlight; most or all are mallards, the grebes no longer to be heard.

Common bladderwort (*Utricularia macrorhiza*) flowering at the edges of the lake. Such a curious plant; floats with no roots, traps aquatic invertebrates for food, and is pretty with it.

Townsend's vole at the edge of the trail, not the best place for it to be.

September 9, 2020 (day 1880, 1827+53): NanRG cum. 43.7 mm (norm. 43 mm)

Neighbour report:

"…insects and land birds fewer this year. Some bats over the lake in the late evening. Also a few swallows, one pair breeding, but fewer than normal. No red-winged blackbirds for some time [second such report]. No mosquitoes to speak of this year, unusual. Pollinators may also have been reduced in numbers. Cool wet weather earlier in the year to blame? Beaver(s) absent for a few weeks but that sometimes happens."

Blue smoky haze yesterday from extensive wildfires down south.

September 11, 2020 (day 1882, 1827+55): NanRG cum. 43.7 mm (norm. 45 mm)

Speaking of blue, more smoke again today, a pleasant surprise, chicory. A common flower of dry waste places to be sure and very common on Vancouver Island but not over here. By the roadside in the East Path Creek catchment area.

Visited the two springs (re)discovered early this year at the east end of the lake near the park entrance (File: 668). As expected, neither was flowing and the area was dry, but standing water could be seen in the holes about 60 cm below the soil surface, about level with the lake. SW spring on the *left*; NE spring on the *right*.

September 19, 2020 (day 1890, 1827+63): NanRG cum. 47.2 mm (norm. 57 mm)

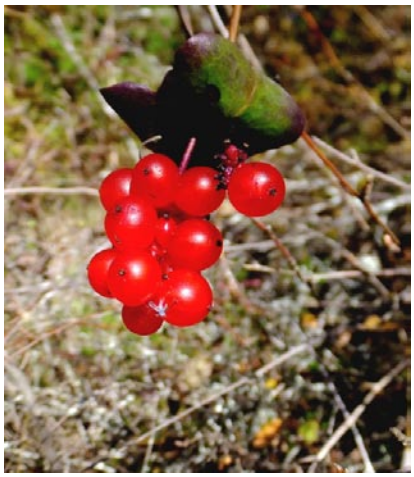
More than a dozen ducks out on the water - maybe widgeons, and a juvenile wood duck. Having wood ducks breeding at the marsh is a significant indicator of the need for vigilant protection of the riparian areas of the park because along with the hooded mergansers they nest in tree cavities away from the water.

September 28, 2020 (day 1899, 1827+72): NanRG cum. 100.3 mm (norm. 76 mm)

Lots of rain, some prolonged, some heavy showers leaving raindrops on the brim of my sun hat. Not timely enough however to stop the cedar flagging, a sign of climate change stress.

Once in Jamaica I saw a traffic controller, ill-equipped for the job, using branches of foliage like this in lieu of stop-and-go red and green flags.

Rose hips and arbutus berries on display, but both outdone by the honeysuckle. They ought to be edible, though as far as I know, they aren't.



October 1, 2020 (day 1902, 1827+75): NanRG cum. 100.3 mm (norm. 83 mm), Weir +61 mm WPB scale. Cistern +42 mm SCB.
[cal. datum: weir –0.586 m, cistern +0.409 m, Δ = 1.00 m]

Rain in September 32% above long-term month's average but annual total so far 4% below average. Despite the rain, the lake level is still falling with no inflow yet and losing 2-3 mm/day in evapotranspiration in the warm sunny days.

Of the two "minor" species of coniferous trees in these woods, grand fir (*Abies grandis*) and

western hemlock (*Tsuga heterphylla*), it's hemlock that is easiest to overlook.

Grand fir, or balsam as some call it, is easily recognized even at a distance by having dark glossy-green needles all growing in horizontal planes, not poking out of the twigs in all directions like those of the Douglas-firs. They're not deep-shade trees and are frequently seen along the edges of the open-to-the-sky "highways" through the parks where it's too dry for cedars. Grand firs are flourishing, thanks in part to the absence of even low-intensity wildfires against which their thin bark offers little protection.

Western hemlock contrastingly are scarce and you often have to trek through the salal to find them in places to their liking; not too dry and not too wet.

They can be as tall as Douglas-firs, but their droopy tops are only occasionally seen on the skyline.

Deep in the forest their form is harder to see, and looking for feathery foliage with stubby unequal-length needles, whitish on the underside, is the way to ensure you're looking at a hemlock.

They appear to be a species in decline, possibly due to climate change; they prefer the cooler places on Gabriola; they also like rotting logs and stumps for their seedlings and past logging operations in the park have not left enough of those.

I can't leave this topic without mentioning a third minor coniferous species that likely does grow in the park, but I just haven't found an example yet. This photo was taken about a kilometre away from the end of the Marsh Trail. It's a western yew (*Taxus brevifolia*). Its ragged, graceless form and peeling bark with a purplish-red inner bark is a dead give-away.

October 6, 2020 (day 1907, 1827+80): NanRG cum. 100.4 mm (norm. 97 mm).

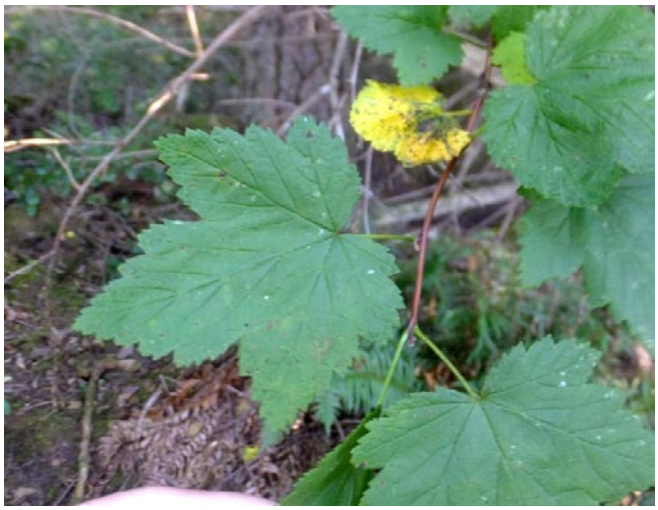
With pink on my mind, attention-catching bracket fungus on a decaying fir stump. *Leptoporus mollis*.

White, but with pink tint. Perhaps

Another white mushroom I see this year that I'm not that familiar with is, what I think is a western pine mushroom (*Tricholoma murrillianum*). I hesitate to be sure because there is on Vancouver Island and may be here too a deadly poisonous close look-alike *Amanita smithiana*.

With peeling bark in mind, came across a small group of trees right by the lake side with just that. Twenty plus feet high. No idea what they were.

Seeing the leaves only deepened the mystery. They looked like Douglas



maple leaves; but the bark of Douglas maple trees doesn't look anything like what I was looking at.

Experts who kindly responded to my call for help were sure it wasn't a native tree, and an uneasy-consensus settled around sycamore maples (*Acer pseudoplatanus*), which are occasional escapees from botanical gardens and city parks. But that didn't seem right for these very old trees.

Back to the site for more observations. No evidence anywhere on the trees, in the litter, and from being on my hands and knees for ten minutes and scraping through the duff with my fingers, no evidence of even s single helicopter seed.

No evidence either of pendulous inflorescence, the flowers were in hemispherical clusters. And the leaves were alternate. In short, the trees I was standing under were not any kind of maple (*Acer* spp.), domestic or foreign.

The only explanation, confirmed by the helpful experts at E-Flora BC, was that these are not trees at all, but are very exceptionally large shrubs, namely, ninebarks (*Physocarpus capitatus*).

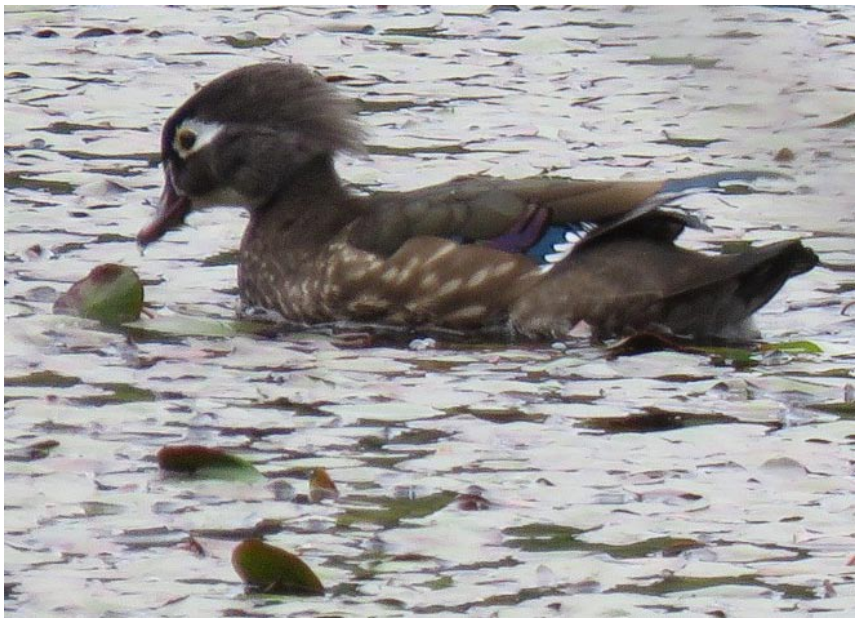
Fall colours are usually the end-of-life colour of leaves, but it's been a strange year, and the showy orangey-pink tips of a few evergreen huckleberry plants are looking like the new-growth of spring. These on Foxglove Down.

There are a few ducks on the lake, summer residents, but too far away to identify.

October 15, 2020 (day 1916, 1827+89): NanRG cum. 182.5 mm (norm. 127 mm).

Lots of activity at the lake. Flock of around thirty to forty very-healthy-looking Canada geese in transit from habitat that's frozen and snow-covered in winter. They're the "western" subspecies, originally native to the interior of the continent. They usually only stay for a few days. They're noticably more shy and less vocal than the locals.

Ring-necked ducks, three of them, resting after their long migration from back east. Not at all interested in having their picture taken.



These are the first to arrive. They and more will be with us all winter.

And the wood ducks still here. Two that were seen foraging together, both females.

Fall means funghi. The perspective from down on knees on the 4-foot of East Path was interesting.

Two very small saprotrophic species, one looked from above the same size, shape, and colour of the ripe seeds of an arbutus tree; <10 mm across, probably vermillion waxy-caps, *Hygrocybe miniata*. The other species only slightly bigger (15 mm) but still young, conifer tuft, again “probably”, I’m no expert, *Hypholoma capnoides*.

October 20, 2020 (day 1921, 1827+94): NanRG cum. 194.4 mm (norm. 146 mm).

Laccaria lacata described in one of my field guides as being very common, with inferior taste, and growing on poor soil in waste places. Hmm... oh! what the heck! I photographed them anyway.

On mossy ground in open woods, scattered but sometimes strikingly numerous in patches.

November 5, 2020 (day 1937, 1827+110): NanRG cum. 268.2 mm (norm. 219 mm).

Rain in October 9% above long-term month's average bringing annual total so far 2% above average.

Coats Marsh Creek and Little Creek are running. Haws, ruby-red and the colour of Burgundy wine. On them exotic hawthorn trees.

November 9, 2020 (day 1941, 1827+114): NanRG cum. 275.2 mm (norm. 239 mm).

Buffleheads on the lake.
Gloomy, and squelchy underfoot.

November 18, 2020 (day 1950, 1827+123): NanRG cum. 384.8 mm (norm. 288 mm).

Every creek in the district running strongly. It's raining like it used to do in the old days.

The beavers have stuffed the end of the pond leveller with carefully placed pointed sticks. Engineers and environment managers too! Bully for them.

November 22, 2020 (day 1954, 1827+127): NanRG cum. 391.5 mm (norm. 311 mm), Weir +381 mm WPB scale. Cistern +33 mm SCB.
[cal. datum: weir –0.266 m, cistern +0.702 m, Δ = 0.97 m].

Soft rain. No sign of any ducks on the lake. Just a large swooping, swirling, dense flock of small song-birds passing by. Pine siskins in transit.

Flocks of small birds in winter are becoming more common than they were twenty years ago. Often see groups of dark-eyed juncos now flirting their white tail flight feathers, and often hear a flock of cheeping chickadees and co. hidden away among the trees, sometimes curious and quite fearless if

you stand still and greet them. They're smart birds. Rough-skinned newts wandering I'm told and frogs still croaking.

November 27, 2020 (day 1959, 1827+132): NanRG cum. 397.9 mm (norm. 340 mm).

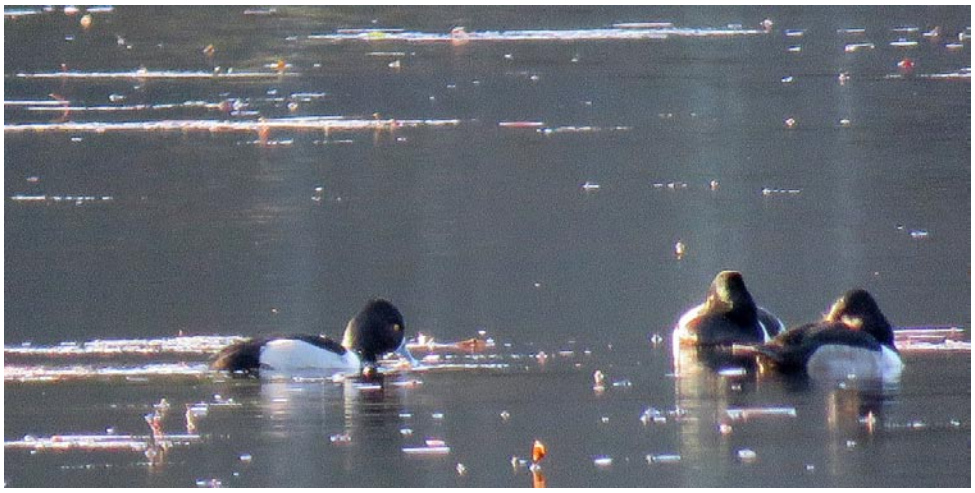
Raft of ring-neckeds on the lake. At least twenty. Unusual behaviour though, moving as a pack, like a crowd of tourists following their tour guide, not spread out over the lake with the readers-in-a-library look of the usual winter residents.

December 6, 2020 (day 1968, 1827+141): NanRG cum. 413.1 mm (norm. 394 mm). Weir +347 mm WPB scale(-0.300 m).

Rain in November 13% above long-term month's average bringing annual total so far to 1% above average.

December 25, 2020 (day 1987, 1827+160): NanRG cum. 564.2 mm (norm. 499 mm). Weir +402 mm WPB scale (-0.245 m).

Ring-neckeds and trumpeter swans. Water everywhere.



January 2, 2021 (day 1995, 1827+168): NanRG cum. 670.8 mm (norm. 548 mm). Weir +579 mm WPB scale (-0.068 m), has been within inches of flooding the deck but it's staying dry. Water flowing freely over the beaver dams, they should be on the RDN payroll they do such a good water management job.

Rain in December 16% above long-term month's average bringing annual total for 2020 to 4% above average, which is average, the normal one-sigma variation being about ±17%.

Many ring-neckeds but only one bufflehead to be seen.

Little Creek, which usually seeps out-of-sight through the sub-grade of the Three Gates Trail, occasionally gets pushy, but it usually only lasts a few days. Here, it’s seen flowing west (right) where it will join the Stump Farm Number 1 Stream before joining Coats Marsh Creek on its way to Hoggam Lake and to the sea whence it came.

An inconvenience to no-one but those who prefer *ordentlich* city parks and who can’t afford a pair of good Canadian-made Wellington boots. ◊

Next file.

Previous file.