

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 (April—September)**

THIS FILE ([Field Observations 2017-2](#)) IS A SUPPLEMENT TO:

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

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

April 2, 2017 (day +624, 366+258)

Rain 30 mm. Cistern level +158 mm SCB, a rise of 9 mm, a new record level. Level at the weir +366 mm WPB (scale), again no change, the pond leveller working flat out but doing its job. East Path Creek at 11.7 L/s. Steady flow at the NE Arm spillway.

A remarkable pinto sky. One moment blue with warm bright sunshine, the insects free to fly undeterred by the slightest breeze, the next grey and gloomy with spots of rain and sea-shore-sounding gusts high up in the canopy.

Many birds. Turkey vultures, swallows, hooded mergansers, buffleheads, ring-neckeds, mallards, wood ducks, two Canada geese, fox sparrows, wrens, ravens, pigeons?, and, as they say in the advertising business, much more.



*Below left:* my version of one of several turkey vultures. *Right:* how it should look (Greg Gillson).

*Above:* *Omphalina ericetorum*. Like pats of butter, said to be edible.



*Above:* The swallows over the lake and north-shore clearings move so fast, they're almost impossible to photograph. No doubt most are violet-green swallows, but now and then I see blue, hinting that some are tree swallows. But reflection of a blue sky can do that too and sometimes the camera lies.



*Left:* The only two geese on the lake, the leader (male?) was honking aggressively.



Bufflehead (left), ring-necked duck (right), hooded merganser (below). These are males, but all ducks on the lake, including these, are accompanied by females these days.



*Left:* Hooded mergansers, the female showing her hood. Last year, they bred on the lake. They nest in tree cavities away from the water, so the rough trail by snags along the south side of the lake needs now to be out-of-bounds to hikers.

*Right:* A pair of wood ducks, the male being the shy-one. They also breed in tree cavities.

April 5, 2017 (day +627, 366+261)

While trying unsuccessfully to get a picture of the swallows over the north-shore burn-pile clearings. Last year I flagged these as *Equisetum arvense*, probably right, or ?



Song sparrows looking on. They and fox sparrows are most common in the park, but there are others.

April 8, 2017 (day +630, 366+264)

Rain 48 mm. Cistern level +188 mm SCB, a rise of 30 mm, yet another new record. Level at the weir +491 mm WPB (scale), a rise of 125 mm, the pond leveller submerged and deck on the brink of being flooded. East Path Creek at 29.2 L/s. Strong flow also at the NE Arm spillway.

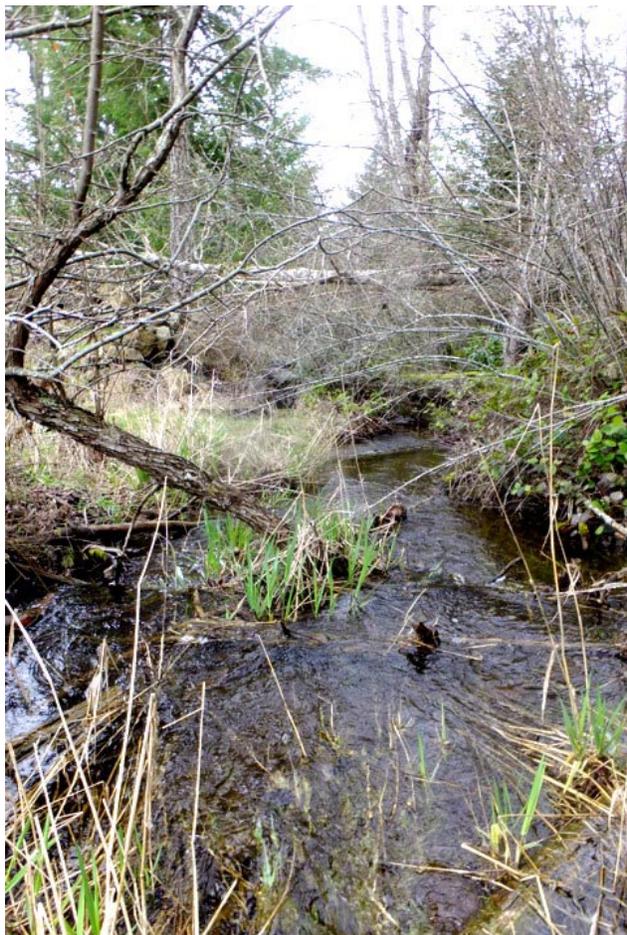


*Left:* Views of East Path Creek.

*Top:* Looking upstream to the Appleyard ponds.

*Below left:* Looking downstream from almost the same vantage point just before it reaches the East Path culvert. At the moment, a very lively stream.

*Below right:* An Appleyard pond outlet.



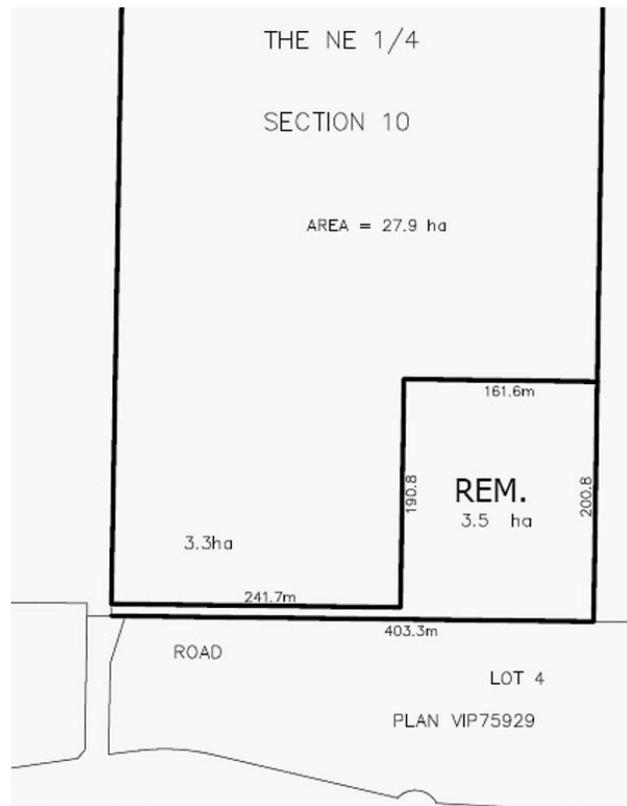


Northern border of Ravenskill Orchards. See [Maps](#) Maps Y and Z and the Field note [File 673e](#) pp. E65 and E69 for more details.

Right: Proposed road along border crossing East Path Creek. Lot 4 is the orchard land east of Stanley Road off Coats Drive.

April 13, 2017 (day +635, 366+269)

Rain 41 mm. Cistern level +203 mm SCB, a rise of 15 mm, yet another new record again. Level at the weir +549 mm WPB (scale), a rise of 58 mm, almost at the deck. East Path Creek at 27.5 L/s. NE Arm spillway flooded, 15 m wide.



Claps of thunder overhead. Pitter-patter on the salal building to a steady swoosh as the rain bucketed down. The air in the forest bemisted. Soggy pants. Some ruby-crowned kinglets sheltering too.

Buffleheads on the lake don't seem to mind the rain or wind, but the ring-neckeds are more inclined to shelter in the reeds whenever the weather's bad.

A few days ago, there was a serious ruckus among the geese. Three of them, wings flapping, honking fiercely, crashed landed on the water near me. Two appeared to be attacking a third, and as they paused on the water after the splashing subsided, one floated with its head



The NE Arm so flooded now there are ducks hanging out there.

underwater. Looked like it was injured or even dead. Then after quite a while, it lifted its head, shook off some water, and slinked away. Today we were back to just two geese. They confidently approached when they saw me, not threatening, just checking and making sure I knew they were there. Not honking either. But a sudden thunderclap out of nowhere made them do that.

After the storm, sunshine, and violet-green swallows, lots of them.

April 18, 2017 (day +640,  
366+274)

Brief west-end visit. Hooded mergansers and wood ducks in the weir bay. Yellow-rumped warblers still around. By the dam, a Townsend's warbler. Along Coats Marsh Creek, yellow stream violets. In the woods, fairy slippers, most hanging their heads to keep out the showery rain. In the clearings on mats





of moss, diminutive hairy bittercress, and another hairy one with tramp-on-able tiny white flowers (probably *Draba verna*).

April 22, 2017 (day +644, 366+278)

Rain 33 mm. Cistern level +195 mm SCB, a drop of 8 mm. Level at the weir +305 mm WPB (scale), a drop of 244 mm. East Path Creek at 8.2 L/s. NE Arm spillway dry.





Another showery day. Buffleheads in interested couples, and brawls break out whenever a second male gets too close. Ringed-neckeds fewer. No geese.

Mature bald eagle scaring the heck out of ducks; a few swallows; common yellowthroat; Pacific tree frogs hanging out at the edge of the water pretending to be last year's tawny reeds; spring mushrooms, one of several a *Nolanea histipes* (they're on Saturna too). The woods alive with bird songs and calls.



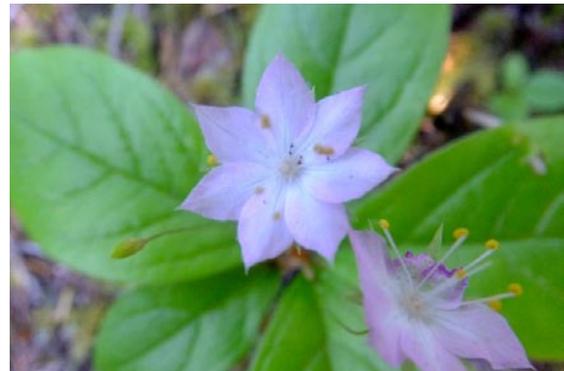
No observations April 24 - May 20, 2017.

May 24, 2017 (day +676, 366+310)

Rain 57 mm. Weir level 213 mm WPB (scale).



Evening reconnaissance after the break. Red-winged blackbirds proclaiming their presence at their posts all around the lake. Broad-leaved starflowers and *A. pantherina* common. Deer. Only two ducks, probably female ringed-necks.



May 29, 2017 (day +681, 366+315)

Rain 0 mm. Cistern level +169 mm SCB. Weir level 204 mm WPB (scale). East Path Creek dry.

Blue-winged teals nesting in weir bay. Very shy and easily disturbed as always. Mallards there too.

On the East Path, a giant silk moth (*Hyalophora euryalus*) and ~~what I'm sure was an arctic skipper (red-listed)~~ [later seen to be a *mylitta crescentspot*] but I just couldn't get the camera to focus on it.

Garter snakes swimming in the water at the edge of the lake; they hold their heads above the water just like land mammals.

Strange loud sound echoing around the lake - a bit like a whooping crane but can't possibly be that as there is only one of whatever is making the noise and the cranes are usually in colonies. A little bit like a giant horned owl, but this was daylight; the sound wasn't strongly owl-like, more like the sounds a dog might make when not barking, but clearly not a dog; and never been heard before. From the woods; nothing visible making such a noise on the surface of the lake. [pied-billed grebes]

Blue violets, strawberry plant flowers, broom putting on a show in the burn-pile clearings, but not spreading elsewhere.



Blue-winged teals. These birds are shy and are seldom seen so close. Any passer-by will alarm them.



Broom looks bad but it's still confined to the old burn-pile clearings and somebody is making commendable efforts to keep it in check.

June 01, 2017 (day +684, 366+318)

Mylitta crescentspot, cinnabar moths waiting for the tansy ragwort, and yes! look! the marsh has chickweed (*Stellaria media*).



June 08, 2017 (day 691, 366+325)

Steady rain - a classic warm front. Gauge 15 mm.

Just when you think the species list must be nearing completion, two or more pairs of pied-billed grebes on the lake. One couple clearly building a floating nest. It's them that make the very loud calls that echo round the lake. The swans/geese/ducks species list count is now fourteen.

Lovely Nootka roses out. NE Arm wetlands drying out. The voles, mice, and owls will be back soon.

Ominous orange surveyor's tape in the meadow. The dreadful decision to subdivide this half quarter section has been made. Preserve and protect—but not when we need a road and a few more million-plus dollar homes.





Newcomers to the marsh. A pair of pied-billed grebes. They can be very noisy.

June 12, 2017 (day +695, 366+329)

Rain 0 mm. Cistern level +154 mm SCB. Weir level 183 mm WPB (scale). Coats Marsh Creek dry, but there is still a little water (one litre per secondish) drindling into the bed at the weir itself.

Gusts of cooler air from the southeast, wind-swept cirrus fibratus on high, not yet stable summer weather. Ducklings on the lake being herded by anxious mothers, I'm avoiding approaching too close these days. Black medic everywhere this year; ripe strawberries; probably an evening grosbeak; a hairy woodpecker



chopping noisily in the gloomy, greenless, under-canopy of a thicket of spindly conifers; a great horned owl lurking in the shadows; red admirals; bluets; and buds of Indian pipes.



June 16, 2017 (day +699, 366+333)

Rain gauge 27 mm. Evening walk; sun after rain. Chattering birds everywhere, mostly unseen; a perhaps aptly-named unkindness of ravens, extraordinarily rowdy, about ten of them along Stanley Road, squabbling, partying, debating, playing some sort of game?

Ducks with ducklings among the watershield, now almost impossible to identify in their drab attire, grebes to be heard; tadpoles big enough to be mistaken for fish; purple martins basking and preening in the setting sun at the top of a snag along the east shore of the lake; salal jam in the making, almost the best in the business.



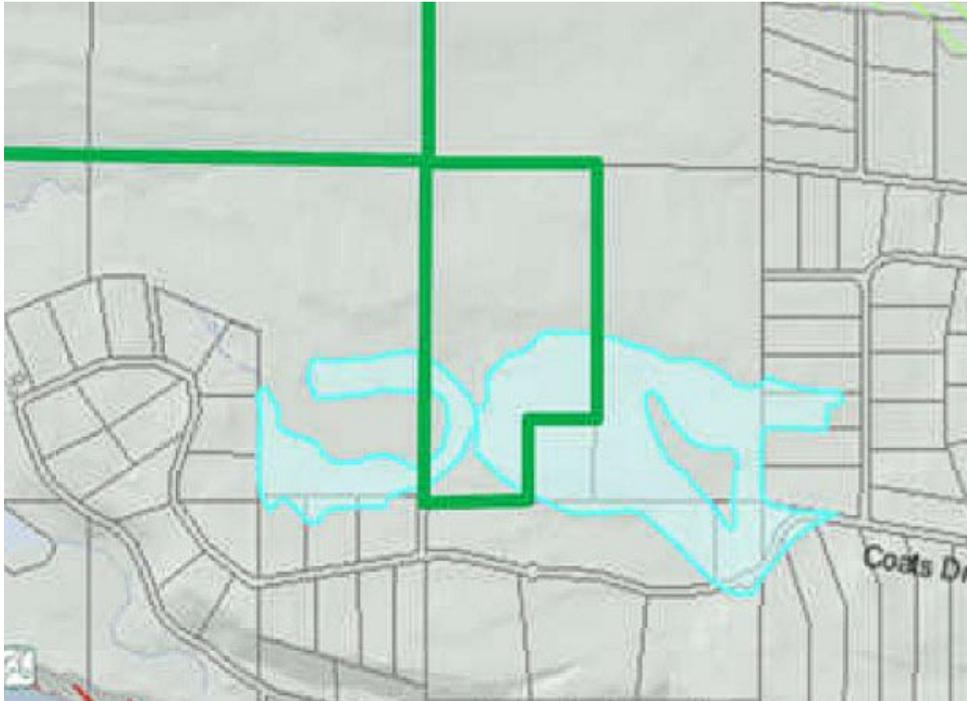
June 18, 2017 (day +701, 366+335)

Rain gauge 5 mm.



*Above:* I would guess a red-legged frog tadpole not yet showing gills.

*Below:* Rare visitors to the marsh; purple martins, the males are all bluish-black.



Rather strange map of the Potlatch density swap donor land (GLTC GB.RZ.2016.1) (Section 10, west 1/2 NE 1/4 less 3.5 ha rem. in SE corner).

It was shown in the IT Community Information Meeting March 20, 2017. The blue sections were said to be "freshwater wetland/swamp regions" that

"form part of the Coats Marsh and 707 Park". The shallow-water wetland (a perennial lake) in the Coats Marsh RP that the western boundary cuts through is not shown in blue! and the entire remainder is! Definitely a map that could do with more than a little ground truthing. Unfortunately common these days when consultants use satellite images and fancy software to produce their cut-n-paste glossy reports instead of walking the land and talking to locals.

June 22, 2017 (day +705, 366+339)

Rain trace. Cistern level +146 mm SCB. Weir level 174 mm WPB (scale), still dribbling out of the pond leveller carrying leakage from the outer marsh through the beaver dam.

Lovely sunny day in the park with a breeze enough to stir the canopy but not enough to quell the butterfly and moth activity in sunlit glades.



Western tiger swallowtails, red admirals, Lorquin's admirals, and unidentified small white moths caught "on film" (it only takes a few hours), but possible pale tiger swallowtails and little brown ones not.



There are many examples in the park and its environs of stands that are in a stem-exclusion phase of their recovery from clear-cutting. After crown closure, individual small trees, mostly Doug. firs and balsams, touch, overlap, and exclude light, causing most to die but a few others to succeed in a process of self-thinning.



These gloomy stands, the abode of dancing midges, have no understory, small brittle dead branches that threaten to poke you in the eye, and are carpeted with a duff of "pine" needles, twigs, dried-out cones, and wind-blown dead arbutus leaves that crackle underfoot like crisps. The stands go unremarked, except maybe for the occasional giant anthill, saprophytic orchid, and fungi in the fall, but today, at noon, on the day after the summer solstice, it was noticeable how the near-overhead\* sunshine came pouring into them.



A seral stage lacking in biodiversity perhaps, but one that is an essential phase in recovery from disturbance of whatever kind.

\*actually only 64°18' at this latitude but it looks higher than that.

June 24, 2017 (day +707, 366+341)

Not the most successful camera day. A red-legged frog with a bit of a



red leg showing; a red squirrel with a bit of a red tail showing; a pine siskin with mostly only a wing showing (ugly and missing the yellow); and another unidentified small dusky moth (cutworm? *Protodeltote albidula*) with only the silvery underside showing.

June 25, 2017 (day +708, 366+342)

Another day. Coralroot orchids.



And a Pacific-slope flycatcher, a reward for sitting still for a while instead of traipsing along the trails.



Meanwhile, oxeye daisies, smooth cat's ears, oceanspray, and in the neighbouring Canary Grass Meadow a few days ago, foxgloves:





July 1, 2017 (day +714, 366+348)

No rain. Cistern level +102 mm SCB. Weir level 88 mm WPB (scale). Leakage in the range 0.5-1 L/s, not reaching the stone culvert, which neatly explains the "negative" creek input in the budget calculations.

July 2, 2017 (day +715, 366+349)

Mallard pair and a hooded merganser female each with about five ducklings, and a blue-winged teal couple, looking at ease as they foraged among the watershield, but without any youngsters.

July 3, 2017 (day +716, 366+350)

Small flocks of adults and fledglings about, sometimes mixed species, all charmingly curious about intruders: "Oregon" juncos "click-



sparrows "tchip-tchip"-ing. They all seem very happy.

Grasses in seed; most too difficult for me to identify down to the species level.

July 6, 2017 (day +719, 366+353)



Small white moths in the grass are pale glyph moths (*Protodeltote albidula*). They're easily disturbed and fly during the day. Photo (left) shows contrast-enhanced top view; in real



life they're often paler and the pattern invisible- it rubs off easily. They settle on grass stalks head down, often with folded wings (photo far left).

The small orange-and-black Essex skippers (*Thymelicus lineola*) are around as well.

I hear pied-billed grebes at the lake.

July 17, 2017 (day +730, 366+364)

No rain. Cistern level +30 mm SCB, murky. Weir level -40 mm WPB (scale). Leakage stopped now that the level is below the baffle, but still minor flow from the private property drain just below the weir. Can this really not be leakage under the berm? The owner thinks not, but it's been dry for a whole month now, hard to believe there is still some flow in even subsurface creeks.

Evening. Still, save for the gentlest wafts now and then to relieve the air of its summer sultriness. A few ducks on the lake, leisurely looking for a roost among the reeds. They're all drab brownish at this time of year, hard to tell one species from another at a distance.



Orange-crowned warbler watched me wade out to make my water-level measurement.

The beaver dam is doing its job in keeping a good reserve of water for the two or three dry months yet to come.

Reports of a canoe on the lake: Community Bulletin Board

<https://www.facebook.com/groups/105764696161763/> entry July 12 9.29 pm. No harm meant, but need to firmly discourage that.

## THAT CONCLUDES THE SECOND YEAR OF OBSERVATIONS AT THE MARSH

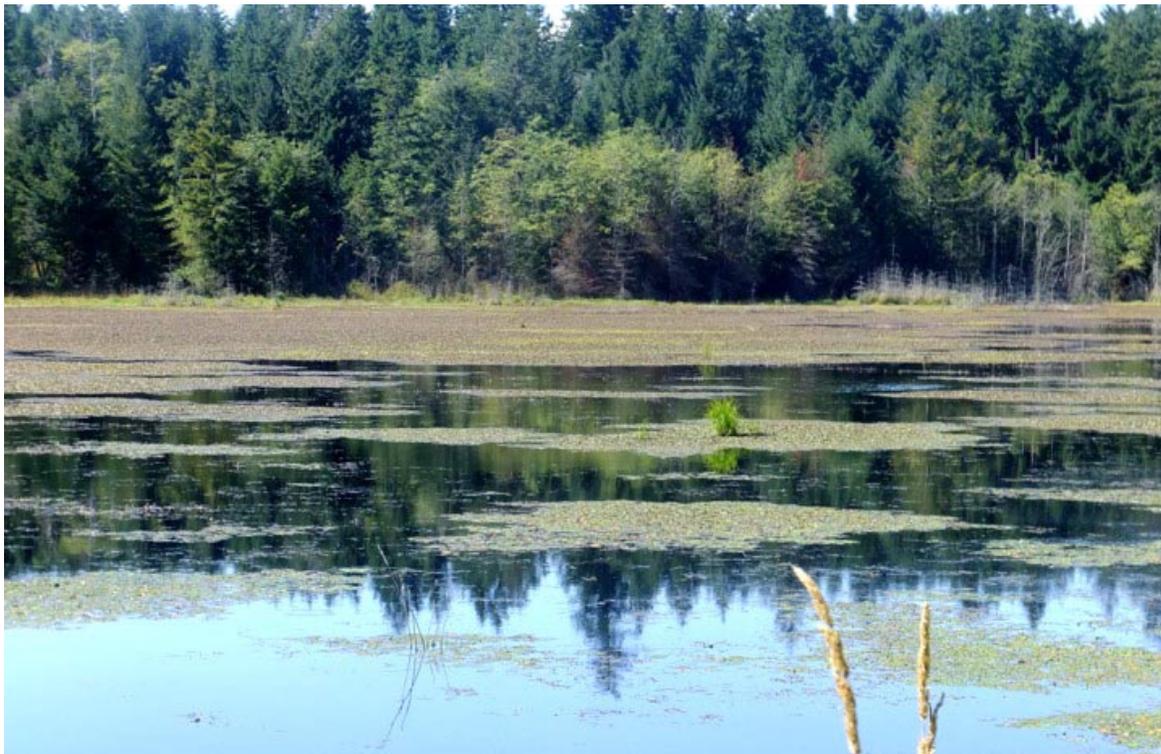
For the second year in a row, the rainfall at the marsh has been more closely matched to that at Nanaimo Airport than at the Environment Canada site on Boulton's Farm or at a similar recorder on El Verano. This is evidence that rainfall is not uniform over the island; the Environment Canada Gabriola figures almost certainly underestimate the island-wide average with higher than average precipitation in higher land away from the coast.

August 10-11, 2017.

Tansy ragwort duty. Cleared in two passes all the Marsh Trail from the gate at the west end to the 707's Mainline Trail at the east end plus spurs: West Entrance Spur, two Weir Trails, and the 707's Fisher Road Spur. Also cleared all of East Path. Did a third pass a few days later. Mostly confined to the 4-feet and within 5 metres or so of the path, but on the second pass all of the most infested patches as far as could be seen in the woods from the trail. Notes: [File 657](#).

August 22, 2017 (day +766, 731+35)

Cistern level -120 mm SCB. Weir level -170 mm WPB (scale), no drainage into Coats Marsh Creek. NanRG cum. 2.8 mm.



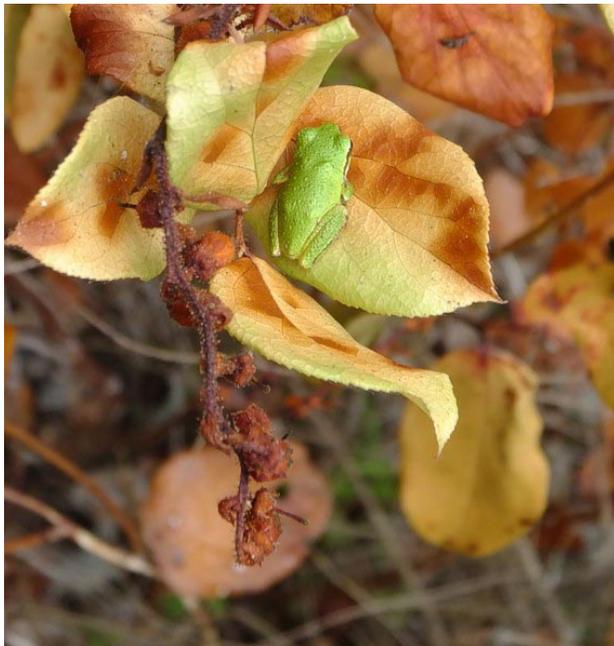
Since July 17, main marsh has dropped 150 mm, weir bay 130 mm. Allowing for about 4 mm of rain in that time, the evapotranspiration rate has been 4.3 mm/day with an average flow of roughly 50 litres/hour from east to west through the beaver dam.

A few hard-to-see ducks dabbling among the watershield. Mostly, but not all, mallards. Quiet; not the best time of year for wildlife viewing.

August 28, 2017 (day +772, 731+41): Lone large duck/small goose acting skittishly in the distance; not aware of me. Possibly an American widgeon or gadwall judging by vivid white wing-patches as it flew off. I wish my visual memory were better! [though gadwalls seen October 7]

August 30, 2017 (day +774, 731+43): Cistern level -151 mm SCB. NanRG cum. 3.4 mm.

So where do Pacific tree frogs like to hang out on such days? This crowd, not unusually, chose salal, not the healthy green plants, but ones whose cankered leaves are the golden-orangey colour of sunsets smoked by mainland wildfires.



Other healthy wildlife: lovely deer ferns near the water's edge; raven; a sharp-shinned/Cooper's hawk flying low over me; red-legged frogs,



Steller's jays (seasonal visitors only to this part of the island); garter snakes; occasional song sparrows and towhees in the underbrush; dragonflies still; and a family of hairy woodpeckers (male, female, and a youngster) working the same tree.

When the wind blows hard enough for the tall, but still young, Douglas-firs to sway, a few rub their trunks together and sound as if they're rutting, which in a way, I suppose they are.

September 2, 2017 (day +777, 731+46): Weir -184 mm WPB (scale). NanRG cum.3.4 mm. The beaver lodge has entrances no longer flooded and reeds garnish its roof. In the burn-pile clearings, thistle down drifts even though there is no breeze. Grasses that grew tall in the early-summer rain have become seedy, sun-dried, and pale-yellow-brown; hayed by the dry; now home for grasshoppers.



September 7, 2017 (day +782, 731+51): Cistern level -180 mm SCB. NanRG cum. 3.4 mm. Gadwalls on the lake. Only two identifiable in the far distance, or caught by the camera topsy-turvy, but I counted probably eight more in flight. Curious rather eerie light of late - thin overcast cloud with smoke below.

September 12, 2017 (day +787, 731+56): NanRG cum. 13.2 mm.

September 14, 2017 (day +789, 731+58): Cistern level -194 mm SCB. NanRG cum. 13.2 mm. Stealthily circumnavigated the lake. A light



breeze to sway the reeds and fir branches hiding movement along the shore from the usually-wary ducks relaxing on the water. Several groups, mostly females with juveniles but a few males in non-breeding plumage - pied-billed grebes, northern shovelers, maybe gadwalls, a couple of ruddy ducks (dubious), and others? Unperturbed by my presence, but then, at the limit of my vision and optical aids. About 20.



*Clockwise from top:* grebe; two hen shovellers; grebe; two gadwalls?? pigeon-grey heads; two ruddy ducks?, drake's head on the right; drake shoveller (eclipse plumage).

September 24, 2017 (day +799, 731+68): Cistern level -202 mm SCB.  
NanRG cum. 39.0 mm.



Checked the rain gauge for the last time (I'm going to use Environment Canada Nanaimo figures in future—the Environment Canada Gabriola and El Verano figures are too low for the marsh).

Some rain but the presence of a western long-toed salamander in the water confused the gauge reading! This subspecies only dwells in the lower Fraser Valley and on Vancouver Island, so how they crossed the strait and Nanaimo Harbour is a mystery. It was very relieved to be released into the lake.



Adding to the excitement, a large beetle floating on the surface of the water in the gauge (male wood borer: *Prionus californicus*).

It was dead.

A raccoon kit watched from a tree while mother and a second kit waited for it to come down into the salal below.

Meanwhile, out on the lake...



Three very vocal small ducks I'd not seen a week or so ago. Dabbling in the watershield. I'm going to say they were green-winged teals, but it is possible they were blue-winged teals. Eclipse plumage makes these determinations really difficult.

[dabblers, no upending; smaller than average; dark bills; short or long bills?; yellowish undertail; pointed tails; very vocal among themselves, muted short quacks, a bit like out-of-season frog bleats, no whistles; hints of a blue speculum? supposed to be green, no blue otherwise; mottled brown with some grey; dark eyeline; no white markings; no white base of bill; occasional hint of chestnut colouring on dark heads seen against the light; far less concerned with my presence than widgeons.]

Below: Internet picture NOT at the marsh (Don Freiday 2010}. Green-winged far left, blue-wingeds right.



September 26, 2017 (day +801, 731+70): Weir -185 mm WPB (scale).  
NanRG cum. 41.2 mm.

September 28, 2017 (day +803, 731+72):



Another tight-knit flock of 8-12 small ducks in the watershed. Teals? Heads often underwater. No coloured speculum. Yellow linear face markings? Short quiet quacks, no whistles.

Lighting terrible, hard to tell what is a true colour and what is just a wet-feather-in-sunlight effect. This is as bad as trying to photograph the Loch Ness Monster. ◇

Next File: [673m](#)

Previous: [673j](#)