



Duka Environmental Services Ltd.

**Central Saanich, Capital Regional District and Tsawout First Nation
Mosquito Surveillance and Control Program**

Island View Beach Regional Park Summary 2022

The annual Nuisance Mosquito Surveillance and Control Program is provided for the benefit of all District of Central Saanich residents, businesses and visitors. It is a partnership between the three agencies above. The CRD control program boundaries are confined to the Island View Beach Regional Park.

The annual control program begins each January and extends through to late August and early September depending on conditions. The extent of development habitats, the magnitude of populations and the diversity of species is greatest between February and April, when water accumulations are also typically at their greatest. Larval mosquitos require non-flowing, standing waters for development. Mosquitos are able to development in salt water and freshwater habitats, and in waters with any range of salinity between these.

Mosquito development at Island View Beach (IVB) old field habitats and the adjacent Municipal Park and Tsawout First Nations salt marsh is initiated by snowmelt, precipitation and fluctuating tidal heights. The predominant habitat at the CRD IVB is temporary, variable and fluctuating water bodies created by surface water accumulations in depressions and low-lying areas located throughout the old, no longer active, farm fields. Their depths, size and persistence are affected by tidal heights, precipitation, seepage, surface water runoff and weather, including day time temperatures, humidity and winds etc. Seepage from the adjacent, western "bluff" maintains several permanent ponds and marshes along the base of this ridge. These fluctuate in response to the impacts of weather (precipitation, temperatures) on runoff and seepage.

In a typical season, these old field temporary sites have evaporated/drained by late May and early June. The more permanent ponds at the base of the bluffs tend to become reduced in size as the season progresses, but they continue to produce recurrent larval mosquito development. Extreme, or several days of precipitation can cause both temporary and permanent habitats to temporarily increase in size with a concomitant surge in larval development.

Field staff visit the Regional and Municipal parks at IVB, and the adjacent Tsawout First Nations salt marsh weekly, beginning in late January. Larval populations are monitored, samples collected for taxonomic identification and treatment/control of larvae is completed using a bio rational, bacterial larvicide (VectoBac 200G) containing *Bacillus thuringiensis* var. *israelensis*, Serotype H-14, Strain AM 65-52.

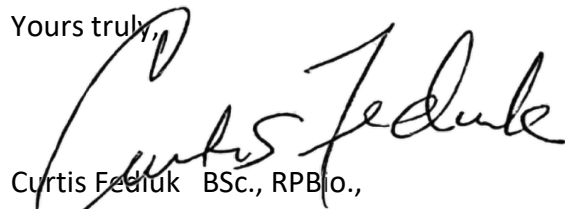
Since we cannot definitively determine the exact source of a mobile, active insect pest such as mosquitos, the magnitude, or contribution to the adult mosquito populations and localized nuisance would likely be a reflection of the predominant habitat type and its area.

The attached graph presents the total volumes of VectoBac 200G applied annually for each of the partners at island View Beach. A review of the past four seasons, 2019-2021 confirms that the total volume of treatment required at CRD IVB has ranged from 10-25% of the total treatments required for all three (partners) areas.

The great majority of adult mosquitos collected from within the boundaries of the IVB, at the Tsawout salt marsh and at adjacent properties over the past several years have been *Aedes dorsalis*. These mosquitos develop in salt water habitats, the predominant habitat of the Tsawout salt marsh. The predominant species of *Aedes* larvae collected at CRD IVB sites is *Aedes sticticus*.

I trust this provides you with the summary information you require.

Yours truly,

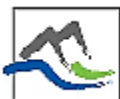


Curtis Feduk BSc., RPBio.,
President

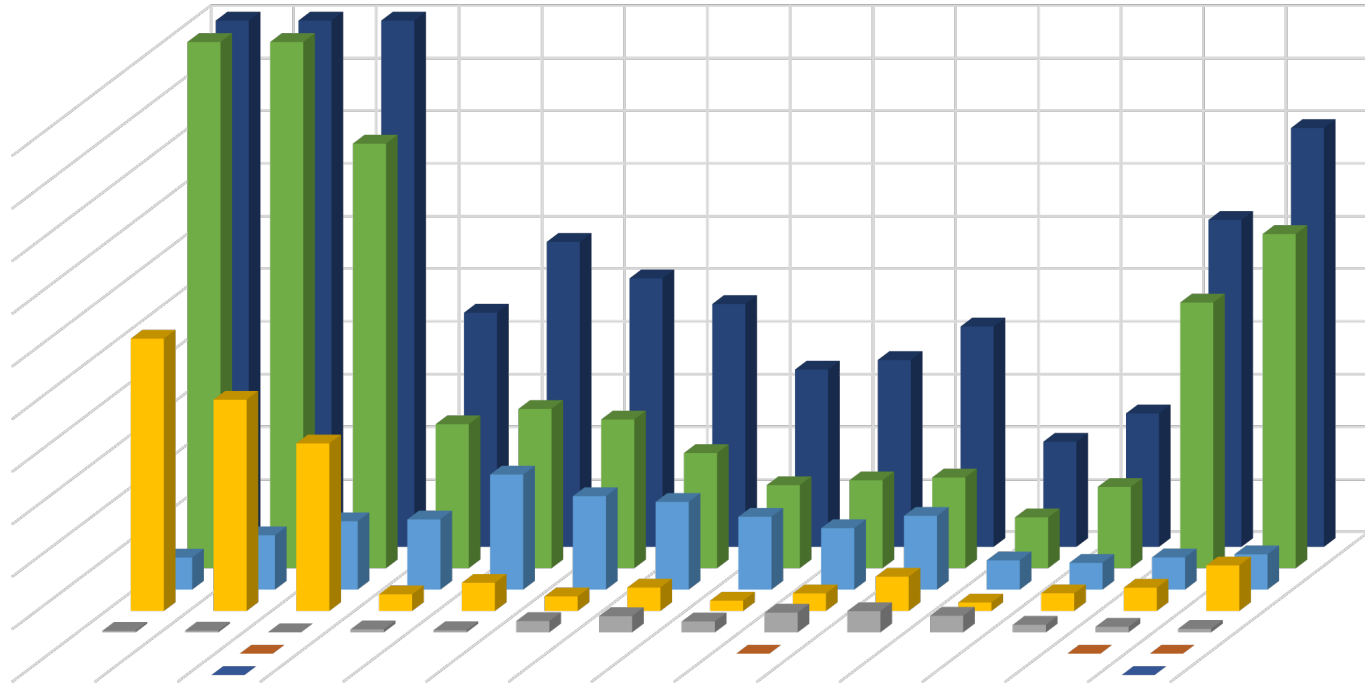
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Providing communities with safe, effective and sustainable mosquito and biting fly control services for over 35 years.



**Central Saanich - Island View Beach Area - VectoBac 200G Applications
Summary 2009 - 2022 (12 July*)**



	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
■ Tsawout Flapper gate repair			XX											XX
■ Ditch cleaning /Maintenance			X						X				X	X
■ Central Saanich, sites #69 A,B	3.00	3.30	0.00	5.70	3.90	21.50	30.80	20.70	37.50	40.30	31.57	14.40	10.55	6.55
■ Central Saanich, sites #123	518.00	402.00	319.05	31.80	53.60	27.77	44.55	19.60	33.40	65.30	16.10	33.65	44.40	86.8
■ CRD, sites #66, #68	61.00	103.50	130.20	133.70	219.20	178.01	167.01	138.70	117.01	140.52	55.61	50.95	61.31	67.23
■ Tsawout, site #34	1063.00	1017.80	807.00	274.10	303.10	283.12	219.39	158.21	167.56	172.91	96.92	154.90	505.20	635.45
■ Totals	1645.00	1526.60	1256.25	445.30	579.80	510.40	461.75	337.21	355.47	419.03	200.20	253.90	621.46	796.03