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REPORT TO REGIONAL PARKS COMMITTEE MEETING OF WEDNESDAY, OCTOBER 27, 2021

SUBJECT **CRD Regional Parks – Mosquito Population Management and Control Program**

ISSUE SUMMARY

To provide an update on the delivery of the annual Mosquito Population Management and Control Program at Island View Beach Regional Park (IVBRP).

BACKGROUND

Since 1989, the District of Central Saanich, the Tsawout First Nation and the Capital Regional District (CRD) have partnered in an annual Mosquito Population Management and Control Program (MPMCP). This work is done under a provincially-approved Integrated Pest Management Plan PMP #825-0004-21/26. The program typically operates from February 1 to October 31 and the work focuses on the monitoring and treatment with VectoBac larvicide of more than 165 mosquito breeding sites on lands across Central Saanich, including sites in and around IVBRP. The MPMCP is implemented under a contract with Duka Environmental Services Limited – paid for by Central Saanich, the Tsawout First Nation and the CRD (Appendix A).

Treatment on District of Central Saanich property includes Island View Beach Municipal Park, located directly south of IVBRP. The District of Central Saanich treatment sites also include private properties (accessed with permission). The district also owns and operates a floodgate valve within the Lamont Road right-of-way that prevents tidal waters from flowing back into IVBRP and allows water accumulations from rain, snow and seepage to drain out (Appendix B).

The Tsawout First Nation treatment area includes salt marsh habitats located to the immediate north of IVBRP. The Tsawout First Nation also operates and maintains a flapper gate built circa 1936 that controls the inflow and infiltration of sea water into the Tsawout salt water marsh. There are 6 to 10 freshwater sites and a substantive (15+ ha) tidally influenced salt marsh divided into four treatment areas that comprise the Tsawout treatment sites.

The CRD treatment locations are within IVBRP. They include large old-field properties (45+ ha) defined by a network of ditches (approximately 4 km) originally dug along farm property line boundaries. There are nine identified saline and salt water-influenced sites, totalling 8 to 10 ha in area and two to three freshwater swampy areas (0.5 ha) located along the base of the bluff that defines the western boundary of the park.

Most treatment sites within the Island View Beach (IVB) broader area are influenced by the proper functioning of the Tsawout flapper gate, the Central Saanich floodgate valve, associated ditches, as well as tidal heights, snow melt and precipitation. Due to the geology, topography and hydrology of the area, tidal heights in excess of 3.3 m (measured at Fulford Harbour) are sufficient to cause water infiltration into the area with resultant saturation of soils and surface water accumulations. From June 11 to July 1, 2021 inclusively, high tides at Fulford Harbour met or exceeded 3.3 metres. Mechanisms to control salt water accumulations into the marshes and ditches in the IVB area are in place in the form of berms, the Central Saanich floodgate valve and the Tsawout flapper gate.

Water accumulations and larval development at IVBRP and the Central Saanich Municipal Park

at IVB this season have been lower than in typical years and reflect the impacts of this summer's dryer conditions. VectoBac applications for the CRD and Central Saanich old field sites have been less (<50%) than that applied in a typical season. By contrast, the flooding and larval development in the Tsawout salt marsh this season were of a magnitude not seen for many years (see Appendix C).

In 2021, the flood conditions in the Tsawout salt marsh are attributable to water infiltrating the flapper gate during high tides when a log jammed open the gate for a period of time until Tsawout Public Works discovered and removed the impediment. According to Duka Environmental Services Limited, similar observations in larval development and treatment needs for the salt water marsh were last noted in 2011 when the flapper gate function was hampered by a log. Following its repair in the winter of 2011, flooding and larval development during the 2012 season were noticeably reduced and of a magnitude and scope that have been consistent from season to season, up to 2021. While issues with the flapper gate negatively impact the Tsawout marsh, the ditches at IVBRP were not negatively impacted by the increased flooding in the Tsawout salt water marsh. The District of Central Saanich has recently written a letter to the CRD Board to request that the CRD contribute \$15,000 toward a feasibility study for the replacement of the Tsawout flapper gate (Appendix E).

The CRD and Central Saanich contracts Aqua-Tex Scientific Consulting Limited, a specialized company engaged in leading-edge integrated ecological site planning for water management, to conduct annual ditch surveys at IVBRP. Aqua-Tex produces an annual report for the CRD that prescribes the work required to maintain good water flow in the ditches and to reduce mosquito breeding habitat (Appendix D). The 2021 survey was conducted on July 5, 2021. The results of the survey found vegetation in the channels to be lush and vigorous but generally did not appear to be causing any major impediments to flow. However, given the plant growth, maintenance has been proposed to remove vegetation in select areas to ensure that drainage does not become impeded in the future. The ditch excavation work prescribed in the report was conducted by Michell Excavating Limited in July 2021. Vegetation removal work prescribed to provide access trails to Duka Environmental Services staff for ease of applying larvicide is completed by CRD staff when conditions permit.

ALTERNATIVES

Alternative 1

The Regional Parks Committee recommends to the Capital Regional District Board:

1. That the Board authorize up to \$15,000 of funding toward a feasibility study for the replacement of the Tsawout flapper gate; and
2. That staff undertake a drainage study for the ditches in Island View Beach Regional Park, share the results with the District of Central Saanich and Tsawout First Nation, and report back.

Alternative 2

That this report be referred back to staff with direction.

IMPLICATIONS

Intergovernmental Implications

The CRD continues to work with Central Saanich and the Tsawout First Nation under the MPMCP. The Pest Management Plan is led by the District of Central Saanich and partners, the Tsawout

First Nation and Capital Regional District. The CRD provides funding to Central Saanich to support its portion of the plan and to hire contractors to do the work. Central Saanich has retained professional, experienced, environmental consulting firms to coordinate and supply specialized services through adherence to the Pest Management Plan.

The partnership developed to contribute and cooperate toward the implementation of the MPMCP has led to a reduction in adult mosquito populations through the IVBRP region. Continuing to work together on implementing this program is an important part of achieving the program's objectives.

Social Implications

The IVB area provides significant cultural, residential, recreational and agricultural opportunities. Adult mosquito annoyance can have a significant impact on residents, visitors and workers in the area, negatively impacting lifestyles and the ability of people to conduct recreation and business. This year, the CRD and the mosquito contractor have seen an increase in the number of complaints associated with a mosquito infestation at communities adjacent to IVB.

Financial Implications

In 2021, the CRD paid \$13,825 to the District of Central Saanich as its contribution toward the implementation of the MPMCP. A further \$1,926 was paid to Aqua-Tex Scientific Consulting for the IVB Ditch Maintenance Report and for supervision of the ditch maintenance recommended in the report. Costs for Michell Excavating Limited to conduct ditch maintenance varies but is typically around \$3,000. The costs to implement the MPMCP are based on the amount of VectoBac that Duka Environmental Services Limited needs to use to treat mosquito breeding sites.

Alignment with Existing Plans & Strategies

The 1989 Island View Beach Regional Park Management Plan has the following objectives:

- To improve the drainage system within the park.
- To consider the needs of the mosquito abatement program when defining any actions regarding drainage.
- To ensure that any changes to the drainage system are done in a manner that minimizes the impact on the natural resources and character of the park.
- To cooperate with the District of Central Saanich to help alleviate mosquito breeding sites in the park.

In addition to these objectives, the following related policies are described in the 1989 management plan:

- The CRD Parks Department will cooperate with the District of Central Saanich in preparing a drainage plan for the park. The purpose of this plan is to identify ways of improving the drainage system for purposes of alleviating flooding of private lands and controlling mosquito breeding sites.
- No new drainage ditches will be constructed east of the existing north/south ditch.
- The Regional Parks Department will keep all ditches in the park clear of debris. This will be included in the annual maintenance program.
- The main east/west ditch and floodgate are not within the park and therefore are the responsibility of the District of Central Saanich.
- The District of Central Saanich will be permitted to enter park property for the purpose of maintaining the main east-west ditch and floodgate.

- The use of pesticides will be prohibited in the park.
- The use of physical and biological control methods will be permitted.
- The Regional District may cost share with the District of Central Saanich the cost of the mosquito abatement program. These costs will be addressed in the drainage plan and when requests from the municipality are presented to the Regional Parks Committee.

These policy directions guide management actions related to the mosquito abatement program.

CONCLUSION

The Capital Regional District partners with the District of Central Saanich and the Tsawout First Nation to implement the Integrated Pest Management Plan and the Mosquito Population Management and Control Program. Since 2011, the program has successfully reduced the number of adult mosquitos present in the Island View Beach area; however, in 2021, a failure with the Tsawout flapper gate combined with three weeks of very high tides resulted in a flooding of the Tsawout salt marsh, resulting in a noticeable increase in the number of mosquitos in the area. The CRD will continue to work with the District of Central Saanich and Tsawout First Nation to improve drainage conditions in the Island View Beach area.

RECOMMENDATION

The Regional Parks Committee recommends to the Capital Regional District Board:

1. That the Board authorize up to \$15,000 of funding toward a feasibility study for the replacement of the Tsawout flapper gate; and
2. That staff undertake a drainage study for the ditches in Island View Beach Regional Park, share the results with the District of Central Saanich and Tsawout First Nation, and report back.

Submitted by:	Jeff Leahy, RPF, Senior Manager, Regional Parks
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

- Appendix A: Integrated Pest Management Plan, District of Central Saanich, Tsawout First Nation and Capital Regional District – January 19, 2021
- Appendix B: CRD Island View Beach Regional Park – Mosquito Development Site Map
- Appendix C: VectoBac 200G Larvicide Application Table from Duka
- Appendix D: Aqua-Tex Ditch Maintenance Report – July 8, 2021
- Appendix E: Letter from District of Central Saanich Council to the CRD Board – September 21, 2021