Audit of Selected Polygons of the Sensitive Ecosystems Inventory of East Vancouver Island and Gulf Islands, 1999-2001: Summary Report[1]

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Introduction

Between 1993 and 1997, the Ministry of Environment, Lands and Parks and Environment Canada conducted the *Sensitive Ecosystems Inventory of East Vancouver Island and Gulf Islands* (SEI). This project used air photos to identify and map the remaining patches of seven *Sensitive Ecosystems* (Wetlands, Riparian, Older Forests, Woodlands, Coastal Bluffs, Terrestrial Herbaceous and Sparsely Vegetated) and two *Other Important Ecosystems* (Older Second Growth Forests and Seasonally Flooded Agricultural Fields). The SEI showed that only 7.9% of the land base still contained Sensitive Ecosystems and that Other Important Ecosystems accounted for another 11.6%.

This report, the *Audit of Selected Polygons of the Sensitive Ecosystems Inventory of East Vancouver Island and the Gulf Islands, 1999-2001* ('the audit'), was designed to document disturbances to the sites identified in the original SEI report.

Utilizing 1999 ortho-photographs, the audit assessed 27% (1,994) of the 7,388 sites identified in the SEI. Areas of relatively high urban and rural growth were selected for review. Comparisons were made of the degree of disturbance for each SEI ecosystem and broad land use category. The results are expected to be applicable to the remaining SEI study area except those areas with a high forestry component.

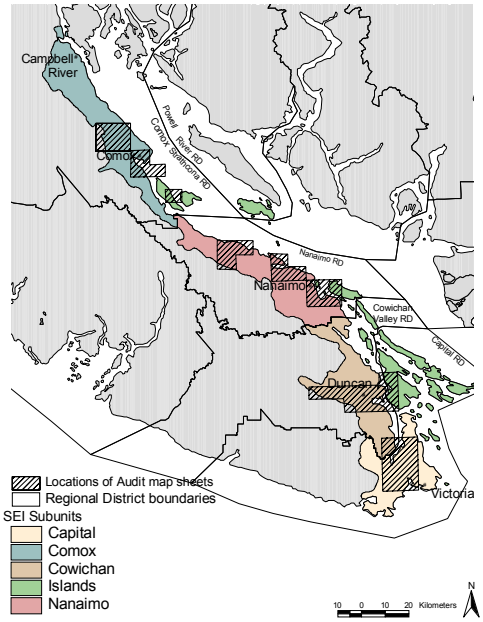

Figure 1: Map of the Study area. The SEI study area, as shown, extends from Campbell River to Sooke plus the Gulf Islands. The mapsheets used in this audit are cross-hatched.

[1]To view the complete report go to website http://wlapwww.gov.bc.ca/vir/pa/index.htm

The Results

Overall 1.3% of the 1,994 sites audited were classified as *Severely Disturbed/ Degraded* and another 9.9% *Disturbed.* Thus, 11.2% of the sites had been *Modified* since the original SEI was carried out, an average of 1.6% per annum.

Information from the Audit also suggests that that the rate of modification was higher in the late 1990's than earlier in the decade.

Figure 2: This figure shows a typical example of disturbance. In this case, parts of the Wetland have been filled and dredged**.**

Rate of Modification by Ecosystem Type

The greatest level of disturbance was in Older Second Growth Forests (24.9%) mostly from forestry activities. Of the seven Sensitive Ecosystems, the greatest impact was to Older Forests at 17.6%, primarily due to urban encroachment and forestry.

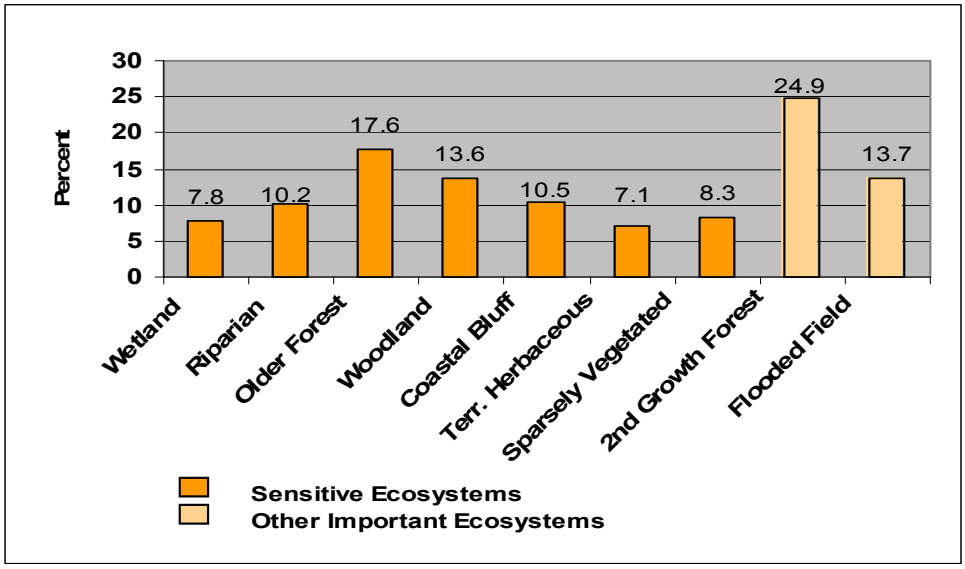

Figure 3: Percentage of *Modified* Sites within each SEI Ecosystem Type.

Rate of Modification by Land Use

The sites were also analysed by land use/zoning. The highest level of impact was in the urban land use: 22.8% of all sites in urban settings showed some degree of disturbance (see Table 1). Greenspace land use category showed the least impact at 3.2% primarily due to the development of new trails and tourist facilities.

Table 1: Numbers and Percentage of Audited Sites by Land Use

All SEI Ecosystems	Federal	Forestry	Green space	Rural	Urban	VIHP*	Total
Number Disturbed	**16**	**46**	**13**	**60**	**45**	**18**	**198**
Severely Disturbed/Degraded	**4**	**9**	**1**	**4**	**5**	**3**	**26**
Total % Modified	***13.0***	***11.2***	***3.2***	***9.6***	***22.8***	***100***	***11.2***
Total number of sites audited	**154**	**492**	**438**	**670**	**219**	**21**	**1994**

*VIHP – Vancouver Island Highway Project

Conclusions and Implications

The audit looked at selected SEI sites from areas of high urban/rural growth, and found that 11.2% had been *Modified* in the 6-8 years since the original SEI mapping was carried out. This suggests that, if the present rate of disturbance were to continue, all of the remaining natural Sensitive Ecosystems could be impacted within the next few decades. Because so much of the landscape on the east coast of Vancouver Island has been historically altered, conservation of these remnant natural ecosystems is critically important to maintain native plants, animals, and plant communities. These ecosystems provide living space for many organisms that are rare or threatened and which cannot survive in *Modified* environments. Encroachment, whether the development of housing in one corner or a trail through the centre of an ecosystem, reduces the size of the undisturbed portion and may result in the loss of additional species which no longer have the space needed to survive. This will result in a loss of biodiversity on east Vancouver Island and the Gulf Islands.

Factors such as landscape fragmentation and connectivity need to be considered during the conceptual layout and approval phases of a development. Landscape fragmentation reduces the amount of land available to support functioning ecosystems. In the already fragmented landscape of eastern Vancouver Island, physical connections between natural ecosystems are critically important to allow for the dispersal of plant and animal species.

Potential impacts of the ongoing destruction or disturbance of Sensitive Ecosystems are not just biological. There are economic implications including the loss of stormwater buffering, ecological benefits (clean air, clean water, productive soil, pollution dilution), aesthetic benefits including enjoyment of greenspace and biodiversity, and higher potential property values adjacent to natural ecosystems.

This report, which documents the continuing loss of these Sensitive Ecosystems, is intended for use by local governments and stewards of the land to highlight the need for increased action. The mechanisms for accomplishing this goal are vested in local government tools and stewardship initiative options.

For more information on Sensitive Ecosystems, their value and the implications of their losses, refer to the SEI website http://srmwww.gov.bc.ca/cdc/sei

Figure 4: The disturbance in this Woodland goes beyond the physical replacement of these Garry Oaks by houses and yards. Also impacted are the plants which grow under the trees, through physical disruption by people walking on them and the encroachment of non-native grasses and other plants.