

Additional ESA Mapping Project Phase 1

Addendum

Prepared for:

The Corporation of the District of Saanich

RFP 33/11 Phase 2



Prepared by:

Moraia Grau and Associates

PO Box 118

Silverton, B.C. V0G 2B0

moraia@bosquesyrios.org

Additional ESA Mapping Project Phase 1 Addendum

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1. Introduction

The consultant in consultation with, and under the recommendation of the Advisory Committee introduced two changes in Phase 2 of the project regarding the assessment of the sites.

1) The surface area for assessing Landscape Context was changed from 2,500 ha as applied in Phase 1 to all sites, to 500ha for ecosystems naturally occurring in a matrix (mixed and coniferous forests), and 100ha for those ecosystems occurring in patch form. In the case of linear ecosystems, the watershed (for headwater streams) or 100 ha was used. The formulae used to calculate the Ecological Integrity or site viability assessment remained the same.

2) A Function and Biodiversity Values assessment was added to the Ecological Integrity assessment to determine the final ranking for recommendation as an Environmentally Significant Area. The Function and Biodiversity Values Assessment was added to account for specific values of a site: connectivity link or buffer function to ecologically significant areas, presence of wildlife trees or veteran trees, and threatened status of the ecological community. In the case of an ecological community classified *at risk* but with an altered understory, because of landscaping or human use, a high restoration potential was considered as a positive factor.

This Addendum describes the new changes in the assessment methodology, and presents results and recommendations when applied to Phase 1 sites.

2. Methodology

2.1. Landscape Context Assessment

The assessment was done by airphoto analysis using Saanich 2011 orthophotos. The analysis assessed the amount of landscape fragmentation by roads, buildings and other human structures. For large patch ecosystems (forested sites) a circle of 1,261m radius (area 500 ha) was placed around the site. For small patch ecosystems (all others) a circle of 564m radius was used (area 100 ha). The fragmentation of the landscape in each quarter of the circle was estimated (from 0 to 25%), and the total fragmentation of each site's was calculated as the sum of the four quarters. According to the amount of landscape fragmentation the site's received a score:

- a) fragmentation < 25% (i.e. =>75% non-fragmented): score 4
- b) fragmentation < 50% (i.e. =>50 <75% non-fragmented): score 3
- c) fragmentation < 85% (i.e. =>15 <50% non-fragmented): score 2
- d) fragmentation => 85% (i.e. <15% non-fragmented): score 1

The full description of the Landscape Context criteria is shown in Table 1.

2.2. Evaluation of Sites Function and Biodiversity Values

For the final assessment other characteristics aside from Ecological Integrity were considered: functionality of a site as a buffer zone or linkage corridor, giving weight to these site functions within the overall strategy of connecting major conservation and biodiversity areas within the District; presence of large snags, wildlife trees, or large veteran trees; the threatened status of a site's ecological community or species; and a high restoration potential. A site was given additional scores for these values as shown in Table 2. As a result the maximum score a site could reach changed from 4 to 6, and the ranking categories were adjusted accordingly (Sect. 2.3).



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Table 1. Criteria for Assessment of Landscape Context

Classification	Description
Excellent – Score 4	The surrounding landscape has <25% fragmentation due to roads, urban areas and rural settlements, and no recent industrial activity. Site occurs within a larger landscape with some formal protection status or is protected by conservation covenants.
Good – Score 3	Up to 50% of the surrounding landscape is fragmented. The larger landscape context provides some protection from anthropogenic disturbance, although changes to natural disturbance regimes exist (fire suppression, flooding control).
Fair – Score 2	More than 50% of the surrounding landscape is fragmented and affected by anthropogenic influences. Development may affect the ecosystem's existence.
Poor – Score 1	Less than 15% of the surrounding landscape consists of natural or semi-natural vegetation, or the ecosystem is completely isolated from natural and protected areas.

Table 2. Evaluation of Site Function and Biodiversity Values

	Link / Buffer function	Snags, wildlife trees or large veteran trees	Threatened status	Restoration potential
+0.5	A crucial link in the conservation strategy because of location or large size / important buffer to a conservation area	Presence of two or more large snags (>80cm diameter with signs of use), oversize veterans (>100cm diameter), or wildlife concentration area.	Red listed	Excellent
+0.3	Important link but other areas available / buffer to small portion of the conservation area	One large or more than two smaller diameter wildlife trees with signs of use, or one oversize tree.	Blue listed	Good
+0.1	A small or isolated link in the overall linkage strategy / some buffer not immediately adjacent	One-two small diameter wildlife trees, or with less than 1/2 original length with signs of use	Yellow listed	Medium

2.3. Calculation of Sites Final Score

A site's final score was the sum of the *ecological integrity* score and the *function and biodiversity value* scores. The sites were classified by the final score into four classes of conservation value:

- ⤴ Very High Priority : >4.5
- ⤴ High Priority : >3.5 ≤ 4.5
- ⤴ Medium priority : >2.4 ≤ 3.5
- ⤴ Low priority : ≤ 2.4



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3. Results

Landscape fragmentation was assessed in 500 ha surrounding each of eleven forested sites; and in 100 ha surrounding twenty sites of other ecosystem types (woodlands, rock outcrops, wetlands, coastal and riparian ecosystems). The Landscape Context assessment by the new method was higher in 8 sites, lower in 19 sites, and the same in 4 sites (Appendix I).

All Phase I sites were also evaluated under the new Function and Biodiversity assessment. The final evaluation resulted in seven sites with *very high* priority, two sites with *high* priority, nineteen with *medium* priority, and three with *low* priority (Appendix II). It should be noted that within the sites of medium priority, three sites have borderline scores medium to high (12MG014, 12TM003, 12TM009).

When comparing the results from this assessment to the previous one, seven sites increased their assessed conservation value, one decreased its assessed value and all other sites (23) remained within the same category. The sites that increased their conservation value were forests, woodlands, and herbaceous terrestrial ecosystems. The site with a lower ranking when compared to the previous report (from *high* to *medium*) was a series of wetland ponds.

4. Recommendations

Sites with scores Medium to Very High are recommended for inclusion in Saanich ESA Atlas. The new assessment procedure resulted in **25 new sites SEI types identified of medium to very high priority for conservation** (Table 3). Two new sites were added: Benson Rd undeveloped right-of-way and Cedar Hill Golf Course riparian site. The new Wildlife Tree Inventory sites (Table 4) and Isolated Watercourses and Wetlands (Table 5) recommended in Phase 1 remained the same. However four new sites under Saanich jurisdiction scored with Medium priority for conservation (Table 6).

The new assessment methodology increased the conservation category of seven sites and lowered the conservation category of only one site: a wetland. In the future, it may be necessary to define special biodiversity values specific to wetlands to level out the scores for ecological elements specific to forest and woodland ecosystems.



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Table 3. Recommended ESA New Sites SEI types

Site Code	SEI type	Site Location	Area	Conservation Priority
12MG017	OF	Maltby Lake	12.927	Very High
12TM013	WD	Near Logan Park	1.034	Very High
12MG012	HT: ro	Observatory Hill	0.639	Very High
12MG013	Ri: 6	Viaduct Creek headwaters - Logan Park	1.326	Very High
12TM005	SG: co	Glendale Lands Camosun College	6.664	Very High
12MG004	SG: mx	Konuckson Park	2.564	Very High
12MG015	HT: ro	Konukson Park	0.661	Very high
12MG016	HT: ro	Cyril Owen	1.262	High
12MG011	WD / HT	Cedar Hill Golf Course	0.830	High
12MG014	CB	South of Guinevere Place beach	0.172	Medium - High
12TM003	SG: mx	Mystic Vale	1.465	Medium - High
12TM009	SG: co	Adjacent to Quick's bottom	2.146	Medium - High
12MG001	SG: co	Haro Woods	7.364	Medium
12TM010	WN: sw	Madrona Farm	1.251	Medium
12TM008	WD	Close to Quick's Bottom	0.368	Medium
12TM012	WD	Wende Ave and Athlone Dr.	1.361	Medium
12MG002	WN: sw	Kingsberry Crescent pond	0.298	Medium
12MG018	WN: sw	Todd Creek flats (east facing slope)	0.283	Medium
12TM001	SG: co	Queenswood property	4.359	Medium
12MG010	Ri:3	Cedar Hill Gulf Course	0.159	Medium
12TM006	SG: co	Glendale Lands Camosun College	2.985	Medium
12TM011	SG: co	Cordova Bay Rd near Mount Douglas Park	1.688	Medium
12TM002	SG: mx	Queen Alexandra Hospital	0.819	Medium
12MG006	HT	Benson Rd	0.210	Medium
12MG007	HT:ro	Bedford Rd	0.154	Medium

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The following sites are recommended as ESA's in the Wildlife Tree inventory (Table 4):

Table 4. New sites Wildlife Tree Inventory

Description	Location
Bald eagle nest	2861 Tudor Ave
Grand fir wildlife tree concentration	SE corner of Logan Park
Douglas fir veteran wildlife tree (spider tree)	Konukson Park

The following site is recommended as ESA in the Isolated Watercourses and Wetlands inventory:

Table 5. New Sites Isolated Watercourses and Wetlands Inventory

Code	Description
12MG010	Isolated watercourse Cedar Hill Golf Course

The following five sites under Saanich jurisdiction are recommended as ESA's in account of their ecological and connectivity values (Table 6):

Table 6. Undeveloped Municipal Lands of Ecological Value

Code	Description
12MG003	Undeveloped right-of-way Sherwood Road
12MG006	Undeveloped right-of-way Benson Rd
12MG007	Undeveloped right-of-way Bedford Rd
12MG008	End of Portage Rd
12TM004	Undeveloped right-of-way McColl Place



Appendix I

Ecological Assessment of Groundtruthed Sites



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Polygon Number	SEI Class Other	Other Values	Landscape Context	Condition	Restoration Potential	Landscape Type	Evaluation Method 1	Evaluation Method 2	Average
12TM001	SG:co	Large Fd's; potential barred and/or screech owls nest, and cooper's hawk; Red listed community	1.5	2	2	Matrix	1.83	1.78	1.8
12TM002	SG:mx	Large Fd's; Red listed community	2	1.5	2	Matrix	1.83	1.84	1.8
12TM003	SG:mx	Wildlife trees	2	1.5	2	Matrix	1.83	1.84	1.8
12TM004	Urban forest	Community green space	2	1.5	2	Matrix	1.83	1.84	1.8
12TM005	SG:co	Red listed community	2	3	4	Matrix	3	2.77	2.9
12TM006	SG:co	Buffer to Viaduct flats, and partial forested corridor to Quick's bottom	2	2	2	Matrix	2	2	2
12TM007	WD		1	1	2	Small patch	1.33	1.22	1.3
12TM008	WD	Buffer to Quick's bottom	2	1.5	2	Small patch	1.83	1.78	1.8
12TM009	SG:co	Green space forested corridor between Quick's bottom and Colquitz Parks and other forested areas in Glendale lands and Viaduct flats.	2	2	2	Matrix	2	2	2
12TM010	WN:sw	Wildlife concentration and biodiversity values within an agricultural area; adjacent to Mt Douglas Park	3	2.5	3	Small patch	2.83	2.78	2.8
12TM011	SG:co		2	2	2	Matrix	2	2	2
12TM012	WD	Potential neighbourhood education project regarding the value of Garry oak woodlands	1	3	2	Small patch	2	2.12	2.1

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Polygon Number	SEI Class Other	Other Values	Landscape Context	Condition	Restoration Potential	Landscape Type	Evaluation Method 1	Evaluation Method 2	Average
12TM013	WD		4	4	4	Small patch	4	4	4
12MG001	SG:co	Red listed community; Connectivity to Goward Park (other side of Haro Rd), and nearby forested sites (Queenswood, and Queen Alexandra Hospital properties)	2	2	2	Matrix	2	2	2
12MG002	WN:sw / RI:5	Biodiversity value connected to Mount Tolmie Park, part of the Bowker Cr. system; not identified as a isolated wetland has no drawback development protection	2	2	3	Small patch	2.33	2.22	2.3
12MG003	Urban forest / community green space	Green space community corridor between MacDonald Dr and Queenswood Dr.	1.5	1.5	2	Matrix	1.67	1.62	1.6
12MG004	SG:mx	Veteran Douglas firs >100 yrs old scattered throughout: "Significant trees" such as the one known as the "spider tree" for the spider diversity.	3	3	3	Matrix	3	3	3
12MG005	WD	Site adjacent to Wedgewood Park and Konukson Park	2	1	1	Small patch	1.33	1.33	1.3
12MG006	HT	Green community space along undeveloped R o W between Tudor Ave and Sea View Rd	2	2	2	Small patch	2	2	2
12MG007	HT:ro	Green community space along undeveloped portion of Bedford Rd	2	2.5	2.5	Small patch	2.33	2.34	2.3

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Polygon Number	SEI Class Other	Other Values	Landscape Context	Condition	Restoration Potential	Landscape Type	Evaluation Method 1	Evaluation Method 2	Average
12MG008	Buffer / Community green space	Buffer Marine Backshore Unit along Portage Inlet from Hwy 1	1	1	2	Matrix	1.33	1.22	1.3
12MG009	WD	Potential community green space and wildlife habitat	1	1	2	Small patch	1.33	1.22	1.3
12MG010	RI: 3		3	1	1.5	Linear	1.83	1.77	1.8
12MG011	WD / HT		3	2	2.5	Small patch	2.5	2.44	2.5
12MG012	HT:ro		4	4	3	Small patch	3.67	3.78	3.7
12MG013	RI:6	Known presence of Blue grey taildropper slug, a red listed sp. in Logan Park (K. Ovaska)	4	4	3	Linear	3.67	3.78	3.7
12MG014	CB		3.5	3	2	Linear	2.83	2.95	2.9
12MG015	HT:ro	Conservation Data Centre rare occurrence 40735; two large Douglas fir snags (see photo)	3.5	3	3	Small patch	3.17	3.17	3.2
12MG016	HT:ro		4	3.5	2	Small patch	3.17	3.11	3.1
12MG017	OF	Several Red and Blue listed species and communities, three SEI wetlands, eight woodland areas (ENKON Environmental Report 2002 for Mr. Holmes)	3.5	4	4	Matrix	3.83	3.55	3.7
12MG018	WN: sw / RI:4	Naturalized ponds may provide habitat biodiversity	2.5	2	1.5	Small patch	2	2.06	2

Appendix II

Site Conservation Values Assessment



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Polygon Number	SEI / Other	Location	Ecological viability	Function	Wildlife trees / Veteran trees	Threatened status	Restoration potential	Final score
12TM001	SG:co	Queenswood	1.8	+0.3	+0.3	+0.5	+0.1	3
12TM002	SG:mx	Queen Alexandra	1.8	+0.1	+0.3	+0.5	+0.1	2.8
12TM003	SG:mx	Mystic Vale	1.8	+0.5	+0.5	+0.5	+0.1	3.4
12TM004	Urban forest	McCull Place	1.8	+0.1	+0.1	+0.5	+0.1	2.6
12TM005	SG:co	Camosun Interurban	2.9	+0.5	+0.3	+0.5	+0.5	4.7
12TM006	SG:co	Camosun Interurban	2	+0.3	-	+0.5	+0.1	2.8
12TM007	WD	High Oak Farm	1.3	+0.3	-	+0.5	+0.1	2.2
12TM008	WD	Markham Rd	1.8	+0.3	-	+0.5	+0.1	2.7
12TM009	SG:co	Markham Rd	2	+0.5	+0.3	+0.5	+0.1	3.4
12TM010	WN:sw	Madrona Farm	2.8	+0.1	-	-	+0.2	3.1
12TM011	SG:co	Cordova Bay Rd	2	+0.3	-	+0.5	+0.1	2.9
12TM012	WD	Wende Ave	2.1	+0.1	-	+0.5	+0.3	3
12TM013	WD	West of Logan Park	4	+0.1	-	+0.5	+0.5	5.1
12MG001	SG:co	Haro Woods	2	+0.5	+0.1	+0.5	+0.1	3.2
12MG002	WN:sw / RI:5	Kingsberry Crescent	2.3	+0.1	+0.3	-	+0.3	3
12MG003	Urban forest / community green space	Sherwood Drive	1.6	+0.3	-	+0.5	+0.1	2.5
12MG004	SG:mx	Konukson Park	3	+0.5	+0.5	+0.5	+0.3	4.8
12MG005	WD	Arbutus Rd	1.3	+0.3	-	+0.5	-	2.1

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Polygon Number	SEI / Other	Location	Ecological viability	Function	Wildlife trees / Veteran trees	Threatened status	Restoration potential	Final score
12MG006	HT	Benson Rd	2	-	+0.3	+0.5	+0.1	2.9
12MG007	HT:ro	Bedford Rd	2.3	-	-	+0.5	+0.2	3
12MG008	Buffer / Community green space	Portage Rd	1.3	+0.3	+0.3	+0.5	+0.1	2.5
12MG009	WD	Woodley Rd	1.3	+0.1	-	+0.5	+0.1	2
12MG010	RI: 3	Cedar Hill Golf Course	1.8	+0.3	+0.3	+0.5	+0.1	3
12MG011	WD / HT	Cedar Hill Golf Course	2.5	+0.5	+0.3	+0.5	+0.2	4
12MG012	HT:ro	Observatory Hill	3.7	+0.3	+0.3 ¹	+0.5	+0.3	5.1
12MG013	RI:6	Viaduct Creek headwaters	3.7	+0.5	+0.5	+0.3	+0.3	5.3
12MG014	CB	Guinevere Place	2.9	+0.5	-	-	+0.1	3.5
12MG015	HT:ro	Konukson Park	3.2	+0.5	+0.3 ²	+0.5	+0.3	4.8
12MG016	HT:ro	Cyril Owen Place	3.1	+0.3	-	+0.5	+0.5	4.4
12MG017	OF	Maltby Lake	3.7	+0.5	+0.5	+0.5	+0.5	5.7
12MG018	WN: sw / RI:4	Spotts Close	2	+0.5	+0.1	-	+0.1	2.7

1 Known presence of two at risk species: sharp-tailed snake and blue grey tailed slug

2 Vernal pool CDC 40735

