

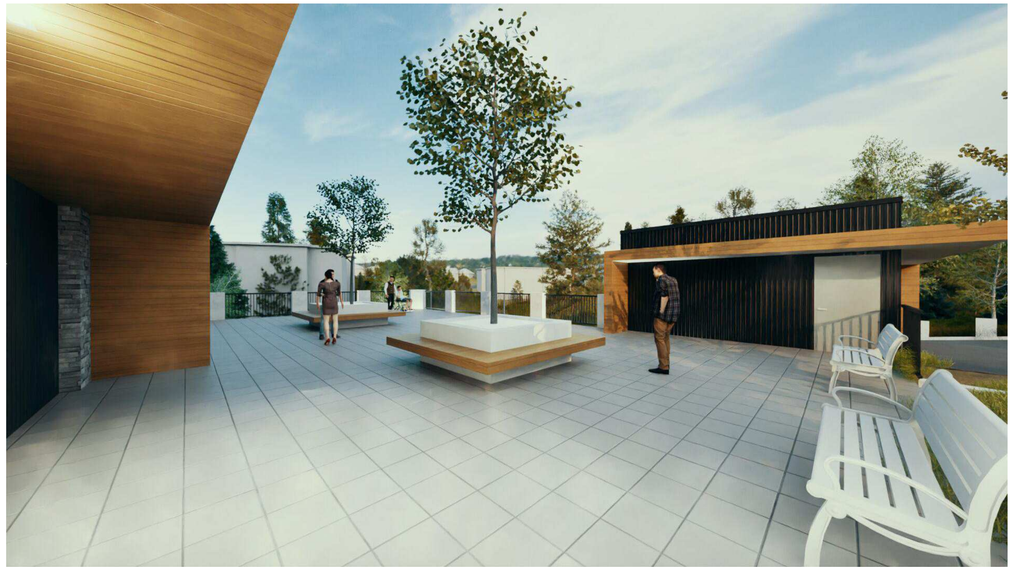
VIEW FROM RIPARIAN AREA



STREET ELEVATION ALONG OLYMPIAN WAY



AERIAL VIEW FROM TURNING CIRCLE



VIEW OF AMENITY DECK

UNION ARCHITECTURE

315-2840 PEATT RD, LANGFORD B.C. V9B 3V4
250-590-0102
www.unionarchitecture.ca

SEAL:

REGISTERED ARCHITECT ROBERT PRINGLE 2025-08-20 BRITISH COLUMBIA

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NO.	ISSUED FOR:	DATE:
1	ISSUED FOR DEVELOPMENT PERMIT	2024-10-01
2	REISSUED FOR DEVELOPMENT PERMIT	2025-03-03
3	REISSUED FOR DEVELOPMENT PERMIT (STONE MATERIAL CHANGE)	2025-06-12

WESTURBAN DEVELOPMENTS LTD.

PROJECT NAME:
3601 OLYMPIAN

PROJECT ADDRESS:
3601 OLYMPIAN WAY, COLWOOD, BC

DRAWING TITLE:
RENDERINGS

PROJECT NO:	24020	DRAWN:	JS
SCALE:		REVIEWED:	RP

DWG NO: DP12



VIEW FROM VETERANS MEMORIAL



VIEW FROM MEDALIST AVE



VIEW FROM NEIGHBOURING LOT SHOWING LANDSCAPE SCREENING



VIEW ALONG OLYMPIAN WAY



PANORAMA FROM LATORIA ROAD

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3	REISSUED FOR DEVELOPMENT PERMIT (STONE MATERIAL CHANGE)	2025-04-12

WESTURBAN DEVELOPMENTS LTD

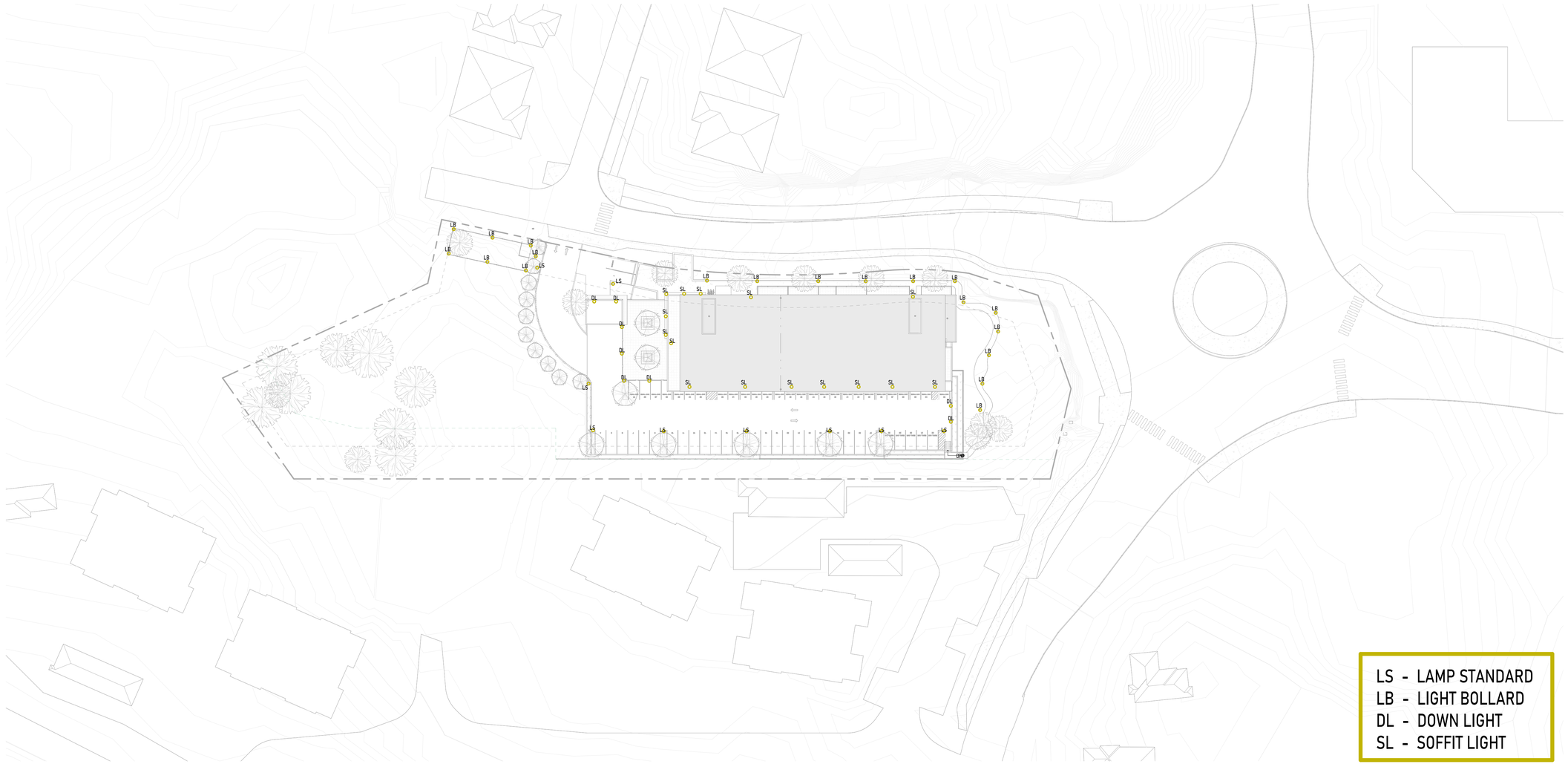
PROJECT NAME:
3601 OLYMPIAN

PROJECT ADDRESS:
3601 OLYMPIAN WAY, COLWOOD, BC

DRAWING TITLE:
RENDERINGS

PROJECT NO:	24020	DRAWN:	JS
SCALE:		REVIEWED:	RP

DWG NO: DP13



LS - LAMP STANDARD
LB - LIGHT BOLLARD
DL - DOWN LIGHT
SL - SOFFIT LIGHT

LIGHTING PLAN
1" = 40'-0"



(SD) 3D ORTHO 1 NORTH WEST 1



(SD) 3D ORTHO 1 SOUT EAST 1

UNION ARCHITECTURE

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2025-06-18
BRITISH COLUMBIA

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2	REISSUED FOR DEVELOPMENT PERMIT	2025-03-03
3	REISSUED FOR DEVELOPMENT PERMIT (STONE MATERIAL CHANGE)	2025-06-12

WESTURBAN DEVELOPMENTS LTD

PROJECT NAME:
3601 OLYMPIAN

PROJECT ADDRESS:
3601 OLYMPIAN WAY, COLWOOD, BC

DRAWING TITLE:
LIGHTING PLAN

PROJECT NO:	24020	DRAWN:	JS
SCALE:		REVIEWED:	RP

DWG NO: DP14

Schedule 2



PLANT LIST

QTY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT
	Trees Deciduous			
9	*Acer Rubrum 'Bowhall'*	Bowhall Maple	6cm Cal	B&B
5	*Amelanchier x grandiflora 'Autumn Brilliance'*	Autumn Brilliance Serviceberry	6cm Cal	B&B
5	*Ginkgo biloba*	Maidenhair Tree	6cm Cal	B&B
2	*Magnolia stellata 'Centennial'*	Star Magnolia	6cm Cal	B&B
1	*Quercus garryana*	Garry Oak	6cm Cal	B&B
	Shrubs			
	Ilex x crenata 'Sky Pencil'	Japanese Holly	#02	Potted
	Rosa nutkana	Nootka Rose	#02	Potted
	Syringa hyacinthiflora 'Old Glory'	Early Flowering Lilac	#02	Potted
	Vaccinium ovatum	Evergreen Huckleberry	#02	Potted
	Viburnum Davidii	David Viburnum	#02	Potted
	Ornamental Grasses			
	Bouteloua gracilis	Blue Grama	#01	Potted
	Miscanthus sinensis 'Gracillimus'	Maiden Grass	#01	Potted
	Perennials			
	Achillea filipendulina 'Gold Plate'	Gold Plate Yarrow	#01	Potted
	Aster frikartii 'Monch'	Frikart's Aster	#01	Potted
	Ascelpias tuberosa	Butterfly Weed	#01	Potted
	Athyrium filix-femina	Lady Fern	#01	Potted
	Echinacea purpurea	Purple Coneflower	#01	Potted
	Eupatorium maculatum	Joe Pye Weed	#01	Potted
	Nepeta x faassenii 'Walker's Low'	Walker's Low Catmint	#01	Potted
	Osmunda cinnamomea	Cinnamon Fern	#01	Potted
	Pachysandra terminalis	Japanese Spurge	#01	Potted
	Rudbeckia fulgida 'Goldsturm'	Goldsturm Black Eyed Susan	#01	Potted

LEGEND

- HYDROSEED (WILDFLOWER & GRASS MIX)
- SHRUBS & ORNAMENTAL GRASS PLANTINGS
- WOOD
- PEA GRAVEL
- WOOD MULCH
- ASPHALT (TYP.)
- CONCRETE (TYP.)
- LANDSCAPE WALL
- NATIVE SHRUBS & PERENNIAL PLANTINGS

PRECEDENT IMAGES



ctq ENGINEERING LANDSCAPE ARCHITECTURE URBAN PLANNING

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NOTES:

1. PLANT MATERIAL AND CONSTRUCTION METHODS SHALL MEET OR EXCEED CANADIAN LANDSCAPE STANDARDS.

2. ALL SOFT LANDSCAPE AREAS SHALL BE WATERED BY A FULLY AUTOMATIC TIMED UNDERGROUND IRRIGATION SYSTEM.

3. TREE AND SHRUB BEDS TO BE DRESSED IN A MINIMUM 75mm NATURAL WOOD MULCH AS SHOWN IN PLANS. DO NOT PLACE WEED MAT UNDERNEATH TREE AND SHRUB BEDS.

4. SHRUB BEDS TO RECEIVE A MINIMUM 300mm DEPTH GROWING MEDIUM PLACEMENT. TREES TO RECIEVE A MINIMUM 1.0M DEPTH GROWING MEDIUM PLACEMENT.

5. SITE GRADING AND DRAINAGE WILL ENSURE THAT ALL STRUCTURES HAVE POSITIVE DRAINAGE AND THAT NO WATER OR LOOSE IMPEDIMENTS WILL BE DISCHARGED FROM THE LOT ONTO ADJACENT PUBLIC, COMMON, OR PRIVATE PROPERTIES.

SEAL

BRITISH COLUMBIA SOCIETY OF LANDSCAPE ARCHITECTS — REGISTERED MEMBER — NATALIE MARTIN — 731

ISSUE	DESCRIPTION	DATE
4	RE-ISSUED FOR DEVELOPMENT PERMIT	2025-03-14
3	RE-ISSUED FOR DEVELOPMENT PERMIT	2024-11-04
2	RE-ISSUED FOR DEVELOPMENT PERMIT	2024-10-18
1	ISSUED FOR DEVELOPMENT PERMIT	2024-09-16

CLIENT NAME:
WESTURBAN DEVELOPMENTS

PROJECT NAME:
3601 OLYMPIAN WAY
COLWOOD, BC

DRAWING TITLE:
CONCEPTUAL LANDSCAPE PLAN

DRAWN: EM
CHECKED: NM
PROJECT NO.: 24097-100
SCALE: 1:300

DRAWING NO.: LDP 1

ENGINEERING ▪ LANDSCAPE ARCHITECTURE ▪ URBAN PLANNING

March 14, 2025

City of Colwood
City Hall
3300 Wishart Road
Victoria, BC V9C 1R1

Attention: Development Services

Re: 3601 Olympian Way, Development Permit

As per our client's request, CTQ Consultants Ltd., estimates a landscape development cost of [redacted] excluding applicable taxes for the above noted property. This price includes landscape materials and installation (concrete patios and sidewalk, crusher fine walkways, bike rack, hydroseeded meadow plantings, trees, native shrub plantings, topsoil, mulch, edging, and irrigation).

Should you require any explanation of this letter, please contact the undersigned.

Sincerely,
CTQ CONSULTANTS LTD.

[redacted]

Natalie Martin, AALA, BCSLA, CSLA
Landscape Architecture | Placemaking | Sustainability | Urban Design

cc: Union Architecture Inc.

Estimate of Probable Construction Costs (On-Site)

prepared for

3601 Olympian Way

Client name: WestUrban Developments Ltd.

Conceptual Landscape Plan Dated Month Day, Year

prepared on: 25.03.14

prepared by: EM

Hardscape	0	m²			
Hydroseed Area	1,431	m²			
Turf Area	0	m²			
Planting Area	787	m²			
Total	**2,218**	**m²**	**23874**	**ft²**	

Item #	Description	Qty	Unit	Cost	Item Total	Subtotal
A	**Topsoil & Mulch**					
1.	Topsoil, turf areas (0.15m depth)	0	m3		$0.00	
2.	Topsoil, planting areas (0.3m depth)	236	m3			
3.	Topsoil, hydroseed areas (0.05m depth)	72	m3			
4.	Topsoil, trees (1cu.m. per tree)	22	m3			
5.	Topsoil, trees (additional soil per CoK buffer reqs)	0	m3		$0.00	
7.	Wood Mulch, planting areas (0.075m depth)	59	m3			
B	**Site Construction**					
1.	Concrete Paving	0	sq.m.		$0.00	
2.	Paving Stones	0	sq.m.		$0.00	
3.	Pedestal Pavers	0	sq.m.	$0.00	$0.00	
4.	Crusher Fines Paving	0	sq.m.		$0.00	
5.	Rock Mulch (0.1m depth)	0	sq.m.		$0.00	
						$0.00
C	**Planting**					
1.	Trees, 6cm Cal.	22	ea.			
2.	Trees, 5cm Cal.	0	ea.		$0.00	
3.	Trees, 4cm Cal.	0	ea.		$0.00	
4.	Trees, 3cm Cal.	0	ea.		$0.00	
5.	Trees (1.5m HT.)	0	ea.		$0.00	
6.	Shrubs, Grasses, Perennials, #01 Cont.	200	ea.			
7.	Shrubs, Grasses, Perennials, #02 Cont.	300	ea.			
8.	Shrubs, Grasses, Perennials, #05 Cont.	0	ea.		$0.00	
9.	Shrubs, Grasses, Perennials, #15 Cont.	0	ea.		$0.00	
10.	Hydroseeding	1,431	m²			
11.	Root Barrier	0	lm		$0.00	
D	**Turf**					
1.	Turf from Sod	0	m²		$0.00	
						$0.00
E	**Irrigation**					
1.	Irrigation System, turf areas	0	m²		$0.00	
2.	Irrigation System, planting areas	787	m²			
F	**Site Furnishings**					
1.	Bench	0	ea.		$0.00	
2.	Bike Rack (multi stall)	0	ea.		$0.00	
3.	Planter Benches	0	ea.	$0.00	$0.00	
4.	1.2m Fence	0	lm	$0.00	$0.00	
5.	Gates	0	ea.	$0.00	$0.00	
6.	Privacy Screens	0	ea.	$0.00	$0.00	
7.	Boulder	0	ea.		$0.00	
						$0.00
G	**Total Construction Costs**					

The above items, amounts, quantities, and related information are based on CTQ's judgment at this level of document preparation and is offered only as reference data. CTQ has no control over construction quantities, costs and related factors affecting costs, and advises the client that significant variation may occur between this estimate of probable construction costs and actual construction prices.

CITY OF COLWOOD

ENVIRONMENTAL OVERVIEW ASSESSMENT

3601 OLYMPIAN WAY
PROPOSED RESIDENTIAL DEVELOPMENT

NOVEMBER 2024



November 4, 2024

Confidential

WestUrban Development Ltd.
96 Wallace Street
Nanaimo, BC
V9R 0E2

Attention: **Frank Limshue, Deputy Director of Planning**

Subject: **Environmental Overview Assessment**
3601 Olympian Way Residential Development

Dear Mr. Limshue;

WSP Canada Inc. is pleased to submit a PDF copy of the 3601 Olympian Way Environmental Overview Assessment report.

We trust that the enclosed report meets your current requirements. If you have any questions regarding this project, the enclosed reports, or our services, please do not hesitate to call the undersigned at [redacted].

Sincerely,

[redacted]
Susan Blundell, M.Sc., R.P.Bio
Principal Biologist

Encl. 3601 Olympian Way Environmental Overview Assessment

WSP ref.: CA0035496.7539

SIGNATURES

PREPARED BY:



Susan Blundell, M. Sc., R. P. Bio
Principal Biologist

REVIEWED BY:



Mark Visser, B.Sc., P.Biol., R.P.Bio.
Senior Fisheries Biologist

No environmental site assessment or investigation can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a site. Performance of a standardized environmental site assessment protocol is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the Site, given reasonable limits of time and cost.

This report was prepared by WSP Canada Inc. (WSP) for the account of WestUrban Development Ltd. in accordance with the professional services agreement. The disclosure of any information contained in this report is the sole responsibility of the intended recipient. The material in it reflects WSP's best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. WSP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report. This limitations statement is considered part of this report.

The original of the technology-based document sent herewith has been authenticated and will be retained by WSP for a minimum of ten years. Since the file transmitted is now out of WSP's control and its integrity can no longer be ensured, no guarantee may be given with regards to any modifications made to this document.

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1 INTRODUCTION

1.1 PROJECT DESCRIPTION

WestUrban Development Ltd. is proposing to construct a residential development on a 0.86 ha parcel of land located at 3601 Olympian Way in the City of Colwood, British Columbia (BC). Figures 1 and 2 (Appendix A) shows the Site location and the proposed Site layout plan, respectively.

The residential development at 3601 Olympian Way property includes a 90-unit purpose-built rental apartment building. The Site is part of the Olympic View master planned development and is already zoned to permit the proposed development. The parcel is subject the Form and Character, and Environmental development areas under the City of Colwood Official Community Plan. Access to the Site will be from Olympian Way.

The Site is bordered to the southeast by a natural wetland which is part of the Latoria Creek watershed. The Site will be fully serviced by gravity for sewer and will be connected to the Capital Regional District water system. The schedule for the commencement of the construction is proposed for June 2025 and the development should take approximately 1.5 years to complete.

According to the City's of Colwood's Official Community Plan the Site is located within Sensitive Ecosystem, Hillside and Riparian Development Permit Areas. As part of the development process, the developer requested that WSP Canada Inc. (WSP) complete an environmental overview of the Site and provide recommendations on minimizing environmental impacts associated with the proposed subdivision development.

2 ENVIRONMENTAL SETTING

2.0 TERRESTRIAL RESOURCES

2.0.1 VEGETATION

2.0.1.1 METHODS

Office Study

Prior to the field survey an office study was completed to review available secondary information. The following were examined:

- Capital Regional District's Map
  https://maps.crd.bc.ca/Html5Viewer/?viewer=public
- Ministry of Environment's BC Species and Ecosystems Explorer
  https://a100.gov.bc.ca/pub/eswp/
- Ministry of Environment's Conservation Data Centre iMap (CDCiMap)
  http://maps.gov.bc.ca/ess/hm/cdc/
- Sensitive Ecosystem Inventory
  https://www.cmnbc.ca/atlasgallery/sensitive-ecosystems-inventory-sei/
- B.C. Big Tree Registry http://bcbigtree.ca/

Field Survey

The focus of the field survey inventory was to determine the potential presence of rare and endangered vascular plants and plant communities and to confirm the location of environmentally sensitive areas. Following a review of applicable mapping and aerial photographs, a field survey was completed to determine vegetation composition at the Site. WSP visited the Site on June 17, 2024, at which time vegetation plots (approximately 10 m x 10 m) were established and examined. The following information was collected for each quadrat:

- Dominant tree species (primary and secondary canopy)
- Dominant tall and low shrub species
- Dominant herbs
- Aspect and gradient

Concurrent with the vegetation survey, the Site was examined for the occurrence of rare plants, rare plant communities and sensitive ecosystems.

2.0.1.2 RESULTS

General

The Site is located in the Georgia Puget Basin Ecoregion within the South Gulf Islands Ecosection. This Site lies within the Coastal Douglas-fir Moist Maritime (CDFmm) Biogeoclimatic Subzone. Douglas-fir as well as grand fir and western redcedar dominate forests on zonal sites within the CDFmm. Salal, Oregon-grape, oceanspray and Oregon-beaked moss dominate the understorey. Less prominent species include baldhip rose, snowberry, western trumpet honeysuckle, vanilla leaf and electrified cattail moss. The presence of Garry oak, arbutus and numerous members of

the lily family characterize these drier sites. A species list for vegetation typically occurring within the CDFmm is presented below in Table 1. Table 2 shows the plant species encountered during the 2024 field survey.

Soils occurring on the Site are classified as predominantly Ragbark soils (80%) with lesser amounts of undifferentiated bedrock (20%) and Somenos soils (20%). Ragbark soils have been developed in rubbly sandy and/or gravelly sandy colluvial and/or morainal deposits, less than 1 m thick, overlying extrusive bedrock. Slopes vary between 15 and 100% and elevations range from sea level to 300 metres. Ragbark soils are rapidly drained. Cobbly, gravelly sandy loam or cobbly, gravelly loam is the usual surface textures; subsoils consist of very gravelly sandy loam. The coarse fragment content is usually between 30 and 60%. The surface and subsurface horizons are brown to dark yellowish brown, and strongly acid. Bedrock is normally encountered between 50 to 100 cm from the surface. These soils are typically classified as Orthic Dystric Brunisols.

The Site is bounded by Latoria Road to the north, Olympian Way and single family residential to the west and greenspace and townhomes to the east. Undeveloped land is located to the south. The Site is predominantly composed of second growth conifer-dominated woodland. Age classes consists of maturing (structural stage 5/6) forest.

Table 1: Vegetation Typically Occurring within the Coastal Douglas-fir Moist Maritime Subzone (CDFmm)

Arbutus	*Arbutus menziesii*
bigleaf maple	*Acer macrophyllum*
Douglas-fir	*Pseudotsuga menziesii ssp. menziesii*
Garry oak	*Quercus garryana*
grand fir	*Abies grandis*
shore/lodgepole pine	*Pinus contorta*
western redcedar	*Thuja plicata*
baldhip rose	*Rosa gymnocarpa*
dull Oregon-grape	*Mahonia nervosa*
Falsebox	*Paxistima myrsinites*
hairy honeysuckle	*Lonicera hispidula*
Indian plum	*Oemleria cerasiformis*
Labrador tea	*Ledum groenlandicum*
Oceanspray	*Holodiscus discolor*
red elderberry	*Sambucus racemosa*
Salal	*Gaultheria shallon*
Salmonberry	*Rubus spectabilis*
Snowberry	*Symphoricarpos spp.*
western trumpet honeysuckle	*Lonicera ciliosa*
Alaska oniongrass	*Melica subulata*
big-leaved sandwort	*Moehringia macrophylla*
bracken fern	*Pteridium aquilinum*
broad-leaved shootingstar	*Dodecatheon hendersonii*
false lily-of-the-valley	*Maianthemum dilatatum*
lady fern	*Athyrium filix-femina*
nodding trisetem	*Trisetum cernum*
Pacific sanicle	*Sanicula crassicaulis*
purple peavine	*Lathyrus nevadensis*
skunk cabbage	*Lysichiton americanum*
sword fern	*Polystichum munitum*

three-leaved foamflower	*Tiarella trifoliata*
vanilla leaf	*Achlys triphylla*
coastal leafy moss	*Plagiomnium insigne*
electrified cat's tail moss	*Rhytidiadelphus triquetrus*
juniper haircap moss	*Polytrichum juniperinum*
lanky moss	*Rhytidiadelphus loreus*
Oregon-beaked moss	*Kinbergia oregana*
palm tree moss	*Leucolepis menziesii*
red-stemmed feathermoss	*Pleurozium schreberi*
reindeer lichen	*Cladina spp.*
sphagnum moss	*Sphagnum spp.*
step moss	*Hylocomium splendens*

Table 2: Plant Species Encountered during the 2024 Field

TREES	
Abies grandis	grand fir
Acer macrophyllum	bigleaf maple
Alnus rubra	red alder
Arbutus menziesii	arbutus
Cornus nuttallii	Pacific dogwood
Prunus emarginata	bitter cherry
Pseudotsuga menziesii	Douglas-fir
Taxus brevifolia	western yew
Thuja plicata	western redcedar
SHRUBS	
Amelanchier alnifolia	Saskatoon berry
Cytisus scoparius	Scotch broom
Daphne laureola	spurge laurel
Gaultheria shallon	salal
Hedera helix	English ivy
Holodiscus discolor	oceanspray
Ilex aquifolium	holly
Lonicera ciliosa	orange honeysuckle
Lonicera hispidula	hairy honeysuckle
Mahonia aquifolium	tall Oregon-grape
Mahonia nervosa	dull Oregon-grape
Physocarpus capitatus	Pacific ninebark
Rosa gymnocarpa	baldhip rose
Rosa nutkana	Nootka rose
Rubus spectabilis	salmonberry
Rubus ursinus	trailing blackberry
Salix scouleriana	Scouler's willow

Sambucus racemosa	red elderberry
Spiraea douglasii	hardhack
Symphoricarpos albus	common snowberry
Vaccinium parvifolium	red huckleberry
HERBS	
Achillea millefolium	yarrow
Adenocaulon bicolor	pathfinder
Alisma triviale	American water-plantain
Anthoxanthum odoratum	sweet vernal grass
Athyrium filix-femina	lady fern
Bromus carinatus	California brome
Bromus hordeaceus	soft brome
Bromus sterilis	barren brome
Calamagrostis canadensis	bluejoint
Cardamine sp.	bittercress
Carex obnupta	slough sedge
Carex rostrata	beaked sedge
Cerastium arvense	field chickweed
Cirsium vulgare	bull thistle
Claytonia perfoliata	miner's lettuce
Clinopodium douglasii	yerba buena
Dactylis glomerata	orchard grass
Danthonia californica	California oatgrass
Deschampsia elongata	slender hairgrass
Dodecatheon hendersonii	broad-leaved shooting star
Elymus glaucus	blue wildrye
Equisetum arvense	common horsetail
Equisetum pratense	meadow horsetail
Festuca occidentalis	western fescue
Fragaria vesca	woodland strawberry
Galium aparine	cleavers
Geranium molle	dovefoot geranium
Goodyera oblongifolia	rattlesnake plantain
Heuchera glabra	smooth alumroot
Hieracium albiflorum	white-flowered hawkweed
Hypochaeris radicata	hairy cat's-ear
Juncus effusus	common rush
Leucanthemum vulgare	oxeye daisy
Lysichiton americanus	skunk cabbage
Madia sativa	Chilean tarweed
Medicago lupulina	black medic
Melica subulata	Alaska oniongrass

Moehringia macrophylla	big-leaved sandwort
Montia parvifolia	small-leaved montia
Oenanthe sarmentosa	Pacific water parsley
Plectritis congesta	seablush
Polypodium glycyrrhiza	licorice fern
Polystichum munitum	sword fern
Pteridium aquilinum	bracken fern
Ranunculus repens	creeping buttercup
Rumex acetosella	sheep sorrel
Sanicula crassicaulis	Pacific sanicle
Trientalis latifolia	western starflower
Veronica americana	American brooklime
Vicia sativa	common vetch
BRYOPHYTES AND LICHENS	
Barbilophozia lycopodioides	common leafy liverwort
Cladonia macilenta	lipstick pixie lichen
Dendroalsia abietina	plume moss
Dicranum scoparium	broom moss
Eurhynchium oreganum	Oregon beaked-moss
Eurhynchium praelongum	slender beaked-moss
Hylocomium splendens	step moss
Peltigera aphthosa	silver-edge pelt lichen
Plagiomnium insigne	coastal leafy moss
Polytrichum juniperinum	juniper haircap moss
Rhytidiadelphus triquetrus	electrified cat's-tail moss

Vegetation Communities

Vegetation types on Site were initially determined through aerial photograph interpretation and later confirmed during an analysis of both the Langford and Colwood lands which took place in June/July 2018 as part of the Olympic View Master Development Plan. A more detailed analysis of the 3601 Olympian Way property was completed in June 2024. Broad vegetation types that are visible on aerial photographs can be further divided into plant associations after field examination. Plants listed below are typical indicators of particular associations and may not all be found within a vegetation type.

Dry Mixed Woodland - Douglas fir/Arbutus (DA)

The Dry Mixed Woodland – Douglas fir/Arbutus (DA) forest type is typically found on hillsides and rocky knolls with dry southern exposures and forms transitions between Garry oak woodland and rock outcrop ecosystems and Mesic Coniferous Woodland associations. Soils are xeric to very xeric and soil nutrients range from medium to very poor. Dominant vegetation found in these plant site series consists of:

- Douglas fir (*Psuedotsuga menziesii*);
- Garry oak (*Quercus garriana*);

- arbutus (*Arbutus menziesii*);
- oceanspray (*Holodiscus discolor*);
- salal (*Gaultheria shallon*);
- dull Oregon-grape (*Mahonia nervosa*);
- baldhip rose (*Rosa gymnocarpa*);
- snowberry (*Symphoricarpos* spp.)
- sword fern (*Polystichum munitum*)
- Alaska oniongrass (*Melica subulata*)
- Pacific sanicle (*Sanicula crassicaulis*)
- broad-leaved shootingstar (*Dodecatheon hendersonii*)
- electrified cat's-tail moss (*Rhytidiadelphus triquetrus*)
- Oregon beaked moss (*Kindbergia oregana*) and
- step moss (*Hylocomium splendens*).

The Douglas-fir-Arbutus ecological community is provincially red-listed. This plant community is very limited on the Site and only occurs in the northeast corner. The DA ecological community covers approximately 846 m^2 or 9.9% of the Site.

Mesic Coniferous Woodland – Douglas-fir-Dull Oregon-grape (DG)

The Douglas-fir – Grand fir – Oregon grape (DG) site series has a moderately dry soil moisture regime and a rich to very rich soil nutrient regime mesic soils. It typically occurs on gentle slopes in a middle- to upper-slope position. Dominant vegetation found in these plant site series consists of:

- Douglas-fir (*Pseudotsuga menziesii*);
  - western redcedar (*Thuja plicata*)
  - grand fir (*Abies grandis*)
  - bigleaf maple (*Acer macrophyllum*)
  - Pacific dogwood (*Cornus nuttalli)*)
  - salal (*Gautheria shallon*)
  - dull Oregon-grape (*Mahonia nervosa*)
  - oceanspray (*Holodiscus discolor*)
  - baldhip rose (*Rosa gymnocarpa*)
  - sword fern (*Polystichum minutum*)
  - vanilla leaf (*Achlys triphylla*)
  - Oregon beaked moss (*Kindbergia oregana*)
  - step moss (*Hylocomium splendens*)
  - palm tree moss (*Leucolepis acanthoneuron*)
  - electrified cat's-tail moss (*Rhytidiadelphus triquetrus*)

The DG site series exists on the Site as maturing forest (structural stage 5/6) and covers approximately 2416 m^2 or 29.7% of the Site.

Moist Conifer Dominated Woodland – Western redcedar/Douglas-fir-Oregon beaked moss (RK)

The Moist Conifer Dominated Woodland – Western redcedar/Douglas-fir-Oregon beaked moss (RK) site association typically occurs on gentle, lower slopes and receiving positions where deep medium textured soils are present. Sandy loam soils are rich and have moderately well to imperfect drainage. The following species typically occur in young RK forests:

- Western redcedar (*Thuja plicata*)
- Douglas-fir (*Pseudotsuga menziesii*);
- Oceanspray (*Holodiscus discolor*)
- Red huckleberry (*Vaccinium parvifolium*)
- Salal (*Gaultheria shallon*)
- Dull Oregon-grape (*Mahonia nervosa*)
- Sword fern (*Polystichum minutum*)
- Broad-leaved starflower (*Trientalis latifolia*)
- Hairy honeysuckle (*Lonicera hispidula*)
- Cleavers (*Galium aparine*)
- Trailing blackberry (*Rubus ursinus*)
- Oregon beaked moss (*Kindbergia oregana*)
- Lanky moss (*Rhytidiadelphus loreus*)
- Menzie's tree moss (*Leucolepis acanthoneura*)

The RK plant community is located throughout the Site and covers an area of approximately 3216 m^2 or 39.5% of the property.

Wet Deciduous Woodland – Black cottonwood – Red-osier dogwood (CD)

The Wet Deciduous Woodland – Black cottonwood – Red-osier dogwood (CD) ecological community occurs on mid bench active floodplain sites. This deciduous forest has an open canopy with a well-developed shrub understorey. The herb layer is moderately well developed as is the moss layer although it is low in diversity. The following species typically occur in CD ecological communities:

- Red alder (*Alnus rubra*)
- bigleaf maple (*Acer macrophyllum*)
- western redcedar (*Thuja plicata*)
- Douglas-fir (*Pseudotsuga menziesii*)
- Red-osier dogwood (*Cornus sericea*)
- Salmonberry (*Rubus spectabilis*)
- common snowberry (*Symphoricarpos albus*)

- Sword fern (*Polystichum munitum*)
- Three- leaf foamflower (*Trientalis trifoliata*)
- Lady fern (*Athyrium filix-femina*)
- Coastal leafy moss (*Plagiomnium insigne*)
- palm tree moss (*Leucolepis acanthoneuron*)

This ecological community occurs adjacent to the wetland in the south part of the Site and covers an area of 167 m^2 (2.0 % of Site).

Swamp Wetland - Western redcedar – Skunk cabbage (RC)

The Western redcedar – Skunk cabbage (RC) site series is found where the soil moisture regime is wet and the soil nutrient regime is rich to very rich. Trees tend to be restricted to be elevated microsites, largely because of the increased availability of oxygen for root respiration there Thus, the tree canopy is not continuous on this site association. The following species typically occur in RC swamps:

- Western redcedar (*Thuja plicata*)
- Red alder (*Alnus rubra*)
- Bigleaf maple (*Acer macrophyllum*)
- Western hemlock (*Tsuga heterophylla*)
- Salmonberry (*Rubus spectabilis*)
- Osoberry (*Oemleria cerasiformis*)
- red elderberry (*Sambucus racemosa*)
- lady fern (*Athyrium filix-femina*)
- spiny wood fern (*Dryopteris expansa*)
- giant horsetail (*Equisetum telmateia*)
- skunk cabbage (*Lysichiton americanus*)
- false lily-of-the-valley (*Maianthemum dilatatum*)
- Cooley's hedge-nettle (*Stachys chamissonis var. cooleyae*)
- slender beaked moss (*Kindbergia praelonga*)
- palm tree moss (*Leucolepis acanthoneuron*)
- coastal leafy moss

The RC ecological community occurs in the southeast corner of the Site and covers 264 m^2 (3.2% of the Site.

Disturbed Lands (DIS)

Disturbed lands on the Site are limited to the previously cleared area in the northwest corner of the Site as well as a small unpaved trail located south part of the Site. The north disturbed area has become colonized with invasive shrubs such as Scotch broom and Himalayan blackberry. Disturbed areas encompass approximately 1238 m^2 or 15.2% of the Site.

In summary, the Site consisted of the following:

- 846 m^2 of Douglas-fir / Arbutus (DA)
- 2416 m^2 Douglas-fir / Grand fir – Oregon Grape (DG)
- 3216 m^2 Western redcedar / Douglas-fir–Oregon beaked moss (RK)
- 167 m^2 Black cottonwood – Red-osier dogwood (CD)
- 264 m^2 Western redcedar – Skunk cabbage (RC)
- 1238 m^2 Disturbed lands (DIS).

These habitat types are shown on Figure 2.

Sensitive Ecosystems

According to the Sensitive Ecosystem Inventory maps from the Ministry of Environment & Climate Change Strategy (ENV) the only sensitive ecosystem/biodiversity polygon present on the Site is the second growth conifer forest/woodland (SG:co/WD) polygon that encompasses almost the entire Site. Based on WSP's field survey it was determined that there are three sensitive ecosystem types present on the property; including woodland (WD) ecosystems, wetland (WN) ecosystems and riparian (RI) ecosystems, as well as the already identified SG:co/WD polygon. Woodlands can consist of Garry oak woodlands, Arbutus/Douglas-fir woodlands or trembling aspen stands. An Arbutus/Douglas-fir woodland ecosystem is present in the northern part of the Site.

A Wetland (WN) ecosystem is present in the southeast corner of the Site. Wetlands may consist of swamps, fens, bogs, meadows or shallow open water. Swamps are vegetated by flood-tolerant trees such as Pacific crabapple, Sitka willow and Pacific willow.

Riparian (RI) ecosystems are found on the margins of rivers, streams, lakes and marshes as well as the floodplains of large rivers and small streams and in gullies. A Riparian (RI) ecosystem present on the Site surrounds the wetland.

Rare and Endangered Vascular Plants and Plant Communities

Rare vascular plants occurring within the City of Colwood in the CDFmm biogeoclimatic subzone listed by the Conservation Data Center (CDC) are shown in Appendix C. As of October 2024, 62 plant species were present on the CDC list, including 41 red-listed species, 18 blue-listed species and 3 yellow-listed.

Rare and endangered vascular plant species are listed by the CDC, which categorizes them as either red listed or blue listed. Red-listed species include species that are extirpated in BC, in danger of becoming extirpated, or threatened. Blue-listed species are species that are sensitive or vulnerable to human activity or habitat encroachment. The CDC now makes available from its website a search engine to determine whether there are any element occurrence polygons present on the Site. These polygons indicate the expected area in which a rare plant may be found. There were no polygons found in the immediate vicinity of the Site.

There were no rare vascular plants observed during the 2024 field survey. The following rare plants were recorded to occur in the general area. Several of these occurrences are dated such as deltoid balsamroot. There is not suitable habitat for any of the species presented on Site as they occur in sand dunes or grass-dominated rock outcrops.

Table 3: Rare Plant Species Known to Occur in Close Vicinity of the Site

Plant Species		Status	Location and Date of Observation	Habitat
Common Name	Latin Name			
Slimleaf onion	*Allium amplectens*	Blue	2014 – Westmont Montesorri School	Terrestrial – rock outcrop
Yellow sand-verbena	*Abronia latifolia*	Blue	2018 – Witty's Lagoon	Terrestrial – sand dune
Deltoid balsamroot	*Balsamorhiza deltoidea*	Red	1965 – Witty's Lagoon	Terrestrial – grassland
Contorted-pod evening primrose	*Camissonia contorta*	Red	2023 – Witty's Lagoon	Terrestrial – sand dune
Howell's triteleia	*Triteleia howellii*	Red	2023 – Witty's Lagoon	Terrestrial - grassland

As of October 2024, the CDC reports the occurrence of 42 rare and endangered plant communities in the City of Colwood within the CDFmm; 31 are red-listed and 11 are blue-listed (Appendix C). The following rare plant communities were observed on Site (Figure 2):

- Douglas-fir / Arbutus (DA) (red-listed)
- Douglas-fir / Grand fir – Oregon Grape (DG) (red-listed)
- Western redcedar / Douglas-fir-Oregon beaked moss (RK) (red-listed)
- Black cottonwood / Red alder – Salmonberry (CD) (blue-listed)
- Red alder-Skunk cabbage (Ws52) (red-listed)

Significant Trees

The CDC does not have any records from the *B.C. Register of Big Trees* of "record" occurring within the Site. There were several large diameter Douglas-fir and western redcedar present in the south part of the Site, but none would meet the requirements of the registry as record trees for these species typically exceed 4-5 m in diameter.

2.0.2 WILDLIFE

Methods

Office Study

The following information was reviewed:

- TRIM mapping (1:20,000 scale);
- Target species (species to be studied with a particular focus on species at risk), including habitat use, feeding behavior, and breeding behavior;
- Mapping for the study Site and area (i.e. air photo, 1:15,000 scale and topographic mapping, 1:20,000 forest cover maps, 1:20,000 scale TRIM mapping) and aerial photographs to identify potential habitat or target species.

This information was used to assist in aerial photograph interpretation of vegetation, drainages, landform and any other prominent features located in the study area. Maps and aerial photographs reviewed included ortho-rectified aerial

The following webpages were also visited to collect relevant wildlife data for the subject Site:

- BC CDC Species and Ecosystem Explorer (BC CDC, 2024) - Search Criteria: Search Type: Animal and Forest District (restricted to Red, Blue, and legally designated species); and CDF Biogeoclimatic zone;
- Ministry of Environment's BC Species and Ecosystems Explorer

  https://a100.gov.bc.ca/pub/eswp/ BC CDC, 2024);
- Ministry of Environment's CDC iMap

  http://maps.gov.bc.ca/ess/hm/cdc/ ;
- E-Fauna (E-Fauna BC, 2024);
- eBird (Audubon and Cornell Lab of Ornithology, 2024);
- Merlin Bird ID by Cornell Lab (accessed July 2024),
- BC Great Blue Herons Atlas (Great Blue Heron Management Team, 2024);
- Sensitive Ecosystem Inventory https://gis.metrovancouver.org/maps/SEI
- Wildlife Tree Stewardship Atlas http://cmnmaps.ca/wits/ ;
- Species-specific Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and *Species at Risk Act* (*SARA)* documents

The list of species of conservation concern identified by the BC CDC for the CDFmm was further refined by assessing their potential presence based on the habitat present on Site and the relative location of known detections.

1. A number of species were excluded from the list of candidate species based on the following criteria:
   - Published occurrence records are not located near the potential area of influence of the Project;
   - Potential habitat does not exist within or near the Site; and
   - Potential project interactions with these species are anticipated to be negligible or nonexistent.
2. For the selected species, habitat information was obtained from the BC Species Summaries, COSEWIC reports, recovery and management plans, and other published data, and masked occurrences (BC CDC, 2021).

Potential Occurrence of Vertebrates of Conservation Concern

The *SARA*, COSEWIC and BC's Red, Blue and Yellow rating status definition for each species identified are presented below.

SARA and COSEWIC ratings for species have been defined as follows:

- Extinct - A species that no longer exists.
- Extirpated - A species that no longer exists in the wild in Canada, but occurring elsewhere (for example, in captivity or in the wild in the United States).
- Endangered - A species facing imminent extirpation or extinction.
- Threatened - A species likely to become endangered if limiting factors are not reversed.

- Special Concern - A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events and may become threatened or endangered because of a combination of biological characteristics and identified threats.

Red, Blue and Yellow status as defined by the BC CDC are as follows:

- Red list - Includes any indigenous species or subspecies (taxa) considered to be Extirpated, Endangered, or Threatened in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. Red-listed taxa include those that have been, or are being, evaluated for these designations.
- Blue List - Includes any indigenous species or subspecies (taxa) considered to be Vulnerable in British Columbia. Vulnerable taxa are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed taxa are at risk, but are not Extirpated, Endangered or Threatened.
- Yellow list - This comprises any indigenous species or subspecies (taxa) which is not at risk in British Columbia. The CDC tracks some Yellow listed taxa which are vulnerable during times of seasonal concentration (e.g. breeding colonies).

The CDC maintains tracking lists of rare vertebrates, for each Forest District in BC. Species, subspecies, populations, or communities at high risk of extinction or extirpation are placed on the red list, while those considered vulnerable are placed on the blue list.

Those species for which potentially suitable habitats occur in the Site are summarized within each species group (Section 2.0.2.3).

Field Survey

During the field survey, a habitat assessment was undertaken to rate the suitability of the different vegetation communities for the major species guilds including species at risk. Specific environmental variables noted included the presence of snags, coarse woody debris, surface complexity, forage potential, cover and travel corridor potential.

In addition, encounter transects were conducted throughout all habitat types within the Site boundaries with a focus on verifying presence and potential use by wildlife. Incidental detections of wildlife activity included sightings of wildlife and also the presence of sign such as prey remains, regurgitated pellets, whitewash, cavity or roosts, dens, burrows, browse, tree scratches, scat, fecal droppings, tracks, and trails.

The aim of the encounter transects was to observe and record all wildlife detected within the Site during the field survey. These include all bird, herptile and mammal detections not recorded during species specific surveys. All wildlife detections further identify the presence or potential for any species of conservation concern known to occur in the region. In addition to wildlife detections, observers recorded habitat features including wildlife and/or nest trees in order to determine if there were any wildlife trees of high significance or nest trees that might be protected permanently under Section 34 of the *Wildlife Act*.

Results

The Site is bounded on the north Latoria Road, to the west by Olympian Way and Phase 1 of the Olympic View residential development (single family) to the south by undeveloped land and to thew east by the Creekview residential development (multi-family). There were six general habitat types identified based on the ecosystem mapping. The disturbed areas of the Site include the northwest corner of the Site which was likely disturbed during the development of Olympian Way and an unpaved trail system that runs in a north-south orientation in the south part of the Site. The habitat types are briefly described below and then assessed for their habitat suitability. In addition to the habitat

suitability of the wildlife habitat present, an assessment of the potential species of conservation concern detected or potentially present is summarized below.

Habitat Suitability

Dry Mixed Woodland (DA)

The dry mixed woodland forest vegetation type is typically found on hillsides and rocky knolls with dry southern exposures and forms transitions between Garry oak woodland and rock outcrop ecosystems. Occasionally Garry oak may occur in the canopy gap. The tree canopy is often interrupted because of the rock outcrops and pockets of shallow soil. A characteristic floristic feature of this site association is the presence of Douglas-fir regeneration in the understory of the tree canopy. The canopy is generally uneven aged and multi layered. The terrain in this habitat ranges from moderately steep to gently undulating.

Although forage production is generally low in these habitats, black-tailed deer make extensive use of this habitat type for bedding and/or travel. Deer droppings and sign were commonly encountered in the forest within the project area. The high structural complexity in this habitat type, especially as it approaches the openings of the rocky outcrops, provides niches for a variety of birds adapted to open and/or edge conditions including swallows, warblers, flycatchers, bushtits, and Bewick's wren. Dead sections on many of the arbutus trees in this habitat provided breeding habitat for members of the woodpecker family and day roosting sites for bats (Photo 14). Extended dry conditions would preclude use of this habitat type by forest-associated amphibians but may attract basking reptiles (e.g. northwestern garter snake and northern alligator lizard) from time to time. Dry mixed woodlands are susceptible to invasive species establishing, especially after clearing (South Coast Conservation Program, 2010a).

Mesic Coniferous Woodland (DG)

The mesic coniferous forest is present on the Site as a young and maturing forest. Both the Douglas-fir-Salal and the Douglas-fir /Grand fir / Oregon Grape site associations are this type of forest. This forest has an open canopy with a well-developed shrub understory. The tree layer is dominated Douglas-fir, usually with a component of grand fir and western redcedar. The shrub layer in mature stands is well developed, and the herb layer is less diverse than other associations. The areas of young forest provide good cover and passerines (songbirds) as well as forage for deer. An abundance of legacy snags and large woody debris if present can provide good cover habitat for herptiles and small mammals and foraging and nesting habitat for woodpeckers. Mesic mixed forest was found on the Site in between the dry mixed woodland and moist woodland or wetlands (Figure 2).

Moist Conifer Dominated Woodland (RK)

The moist conifer dominated woodland occurs on Site on gentle, lower slope positions, in receiving positions where the soils are deep and medium textured. This forested habitat is important to many wildlife groups. Reptiles and salamanders, favor the moisture receiving sites and coarse woody debris common in this type of vegetative habitat, but frogs are less likely to occur due to the low water levels. The slightly dry to fresh soil moisture and a very poor to medium soil nutrient regime offers good habitat for insect production; this is important to small mammals due to the high food abundance.

The mature tree layer where present, is important to raptors for nesting and roosting because it has the potential to have a high abundance of small mammals, it also has a high potential to contain good numbers of foraging raptors. The shrub layer is dominated by berry bushes such as salal and dull Oregon-grape. Mature forest passerine and passerine-like birds use this kind of habitat for nesting and many berry foraging birds. The hydrophitic zones in this vegetation habitat around wetlands are important for forage, security and movement. Moist coniferous forest was found around the wetlands on Site.

Wet Deciduous Dominated Forest (CD)

Swamp Wetland (RC)

Swamps tend to be more associated with forested conditions than some other wetland types. Standing or gently moving water occurs seasonally or persists for long periods, leaving the subsurface continuously waterlogged. Swamps slow the velocity of runoff and have the capacity to store water for extended periods. Most species of wildlife use a wetland during some part of their lifecycle. The structural complexity of the trees and shrubs within the swamp support a range of diverse bird and bat species. This wet zone is also important for many passerines due to the plentiful insects associated with aquatic environments. Species such as the Northern red-legged frog are often found in intact swamp communities surrounded by forest. Deer are attracted to swamps for their cover and forage values. Snags and logs are common in swamps. Owl species forage on small mammals and amphibians found in and around wetlands. Many swamps possess above average forage value with the high structural complexity.

Wildlife Ratings

To determine habitat values for animals on the property, each defined vegetation unit was rated for its capability to support all the wildlife encountered during the surveys. This includes large and small mammals, herpetifauna, passerines and passerine-like birds as well as raptors. The general habitat ratings for the above-mentioned habitat types are presented for each species group in Tables 5 and 6.

Table 4: Habitat Values for Selected Vertebrate Species/Species Groups

Habitat Grouping	Relative Importance to Species / Species Group						Overall Wildlife Rating
	Deer	Furbearers[1]	Small Mammals[2]	Herptiles[3]	Woodpeckers	Songbirds	
Dry mixed woodland	Moderate to High	Low to moderate	Moderate	Low	Moderate	High	Moderate
Mesic conifer woodland	Moderate	Moderate	Moderate	Moderate	Moderate to High	Moderate to High	Moderate
Moist coniferous woodland	Moderate to High	Moderate to High	High	High	Moderate to High	High	High
Wet deciduous woodland	Moderate to High	Moderate to High	High	Moderate to High	Moderate	High	Moderate to High
Wetland	Low	Moderate	Moderate	High	Moderate	Moderate to High	Moderate
Disturbed	Moderate	Low	Moderate	Moderate	Nil	Low	Low to Moderate

Notes:

[1] "Furbearers" is a generalized term, which includes raccoons, mustelids, Eastern cottontails and red squirrels.
[2] "Small Mammals" include shrews, mice and voles native to Vancouver Island.
[3] "Herptiles" is a term given to the combined grouping of amphibians with reptiles.

Table 5: Summary of Values in Habitat Types

Habitat Grouping	Forage Production			Snag Abundance	Coarse Woody Debris	Hiding Cover	Travel Corridor Potential
	Browse	Herbage	Berries				
Dry mixed woodland	Low	Low to Moderate	Moderate	Moderate	Low	Low	Moderate
Mesic conifer woodland	Low	Low to Moderate	Low	Moderate	Moderate to High	Moderate to High	Moderate
Moist coniferous woodland	High	High	High	High	High	High	High
Wet deciduous woodland	Moderate	Moderate	High	Moderate to High	Moderate to High	Moderate to High	Moderate
Wetland	Moderate	Moderate	Low to Moderate	Low to Moderate	Low to Moderate	Moderate to High	Low to Moderate
Disturbed	Low	Low	Low	Low	Low	Low	Moderate

Wildlife Observations

Table 5 provides a summary of all species detected through systematic surveys or incidentally. Black-tailed deer (*Odocoileus hemonionus* ssp. c*olumbiana*) were observed throughout the Site. Eastern cottontail (*Sylvilagus floridanus*) droppings were also encountered on the Site. Cottontails frequent shrubby habitats where forage and hiding cover are abundant and are important prey items for larger raptors. Although not noted during the field survey Cougar (*Puma concolor*) have been noted previously in the immediate vicinity of the Site. As well, black bear (*Ursus americanus*), are known to occur in the general area. Wildlife species known to occur in the immediate area of the Site are included in Table 5; these species have been previously documented on the Olympic View property in both the Cities of Langford and Colwood.

Pacific tree frogs were heard on the Site and are associated with the wetland and moist woodlands and northern red-legged frog are known to occur immediately upstream of the wetland on Site, in the larger wetland located to the south of the Olympic View development. The Site likely supports populations of both common (*Thamnophis sirtalis*) and western terrestrial (*Thamnophis elegans*) garter snakes as well as northern alligator lizard (*Elgaria coerulea*).

Based on habitat features present songbirds form the largest part of the area's bird population. Open canopy areas typically attract use by sparrows and other aerial insectivores. The woodland forest habitats provide the highest levels of structural diversity, and therefore are expected to possess the highest songbird densities. No nests of species continuously protected under Section 34 of the B.C. *Wildlife Act* (e.g. bald eagle; great blue heron) were detected. A summary of all potential species of conservation concern either present or potentially present based on habitat present is found in section (Section 2.0.2.3).

Table 6: Summary of Wildlife Observations in the Site

Species		Observation (v/s/k)*
Mammals		
Black-tailed deer	*Odocoileus hemionus columbianus*	v
Eastern cottontail	*Sylvilagus floridanus*	v
Cougar	*Felis concolor*	k
Black bear	*Ursus americanus*	k
Red Squirrel	*Tamiasciurus hudsonicus*	k
Grey Squirrel	*Sciurus carolinensis*	v
American mink	*Neovison vison*	k
Raccoon	*Procyon lotor*	k
California Myotis	*Myotis californicus*	k
Yuma Myotis	*Myotis yumanensis*	k
Townsend's Big-eared Bat	***Corynorhinus townsendii***	k
Big Brown Bat	*Eptesicus fuscus*	k
Silver-haired Bat	*Lasionycteris noctivagans*	k
Hoary Bat	*Lasiurus cinereus*	k
Birds		
American Robin	*Turdus migratorius*	v
Anna's hummingbird	*Calypte anna*	a

Bald eagle	*Haliaeetus leucocephalus*	k
Bald eagle	*Haliaeetus leucocephalus*	k
Barred Owl	*Strix varia*	v
Bewick's wren	*Thryomanes bewickii*	a
Black-headed grosbeack	*Pheucticus melanocephalus*	a
Brown creeper	*Certhia americana*	v
Brown creeper	*Certhia americana*	k
Brown-headed cowbird	*Molothrus ater*	k
Bushtit	*Psaltriparus minimus*	k
California quail	*Callipepla californica*	k
Cedar waxwing	*Bombycilla cedrorum*	k
Chestnut-backed chickadee	*Poecile rufescens*	v
Chipping sparrow	*Spizella passerina*	k
Common nighthawk	***Chordeiles minor***	k
Common raven	*Corvus corax*	a
Cooper's hawk	*Accipiter cooperii*	k
Dark-eyed junco	*Junco hyemalis*	v
Downy woodpecker	*Picoides pubescens*	a
Fox sparrow	*Passerella iliaca*	v/a
Golden-crowned Kinglet	*Regulus satrapa*	k
Great horned owl	*Bubo virginianus*	k
Hairy Woodpecker	*Picoides pubescens*	k
Hooded merganser	*Lophodytes cucullatus*	k
House finch	*Haemorhous mexicanus*	a
House wren	*Troglodytes aedon*	k
Hutton's vireo	*Vireo huttoni*	k
Northern Flicker	*Colaptes auratus*	v/a
Northwestern Crow	*Corvus caurinus*	v/a
Olive-sided flycatcher	***Contopus cooperi***	k
Orange-crowned warbler	*Vermivora celata*	a
Pacific wren	*Troglodytes pacificus*	k
Pacific-slope flycatcher	*Empidonax difficilis*	k
Pileated woodpecker	*Dryocopus pileatus*	k
Pine Siskin	*Spinus pinus*	k
Red crossbill	*Loxia curvirostra*	k
Red-breasted nuthatch	*Sitta canadensis*	a
Red-breasted Sapsucker	*Sphyrapicus ruber*	k
Red-tailed Hawk	*Buteo jamaicensis*	k
Rufous Hummingbird	*Selasphorus rufus*	k
Song sparrow	Melospiza melodia	a
Spotted towhee	*Pipilo maculatus*	a
Stellars jay	*Cyanocitta stelleri*	k

Swainson's thrush	*Catharus ustulatus*	k
Townsend's warbler	*Setophaga townsendi*	k
Turkey Vulture	*Cathartes aura*	v
Varied Thrush	*Ixoreus naevius*	k
Violet-green Swallow	*Tachycineta thalassina*	k
Western flycatcher	*Empodonax difficilis*	a
Western tanager	*Piranga ludoviciana*	k
Wilson's warbler	*Wilsonia pusilla*	a
Herpetiles		
Pacific treefrog	*Pseudacris regilla*	a
Northern red-legged frog	***Rana aurora***	k
Rough-skinned newt	*Taricha granulosa*	k
Northern alligator lizard	*Elgaria coerulea*	k
Garter snake	*Thamnophis* spp,	k

Bolded = listed species, v=visual, a=auditory, k=documented in area

Potential Species of Conservation Concern

During the review of the mapped known occurrences of species at risk the database indicates that there was one masked occurrence that overlaps the Site. The CDC has been contacted to identify whether this species occurs on the Site and determine if it would be affected by the proposed development. Proposed critical habitat has been identified for the western painted turtle Pacific Coast population and includes all of the aquatic and riparian features of the Site (Figure 3). The following information is a brief summary of the species detected or potentially to be present at the Site, their status, habitat requirements and likelihood of occurrence based on species group.

Herptiles (Amphibians and Reptiles)

Three amphibian and two reptile species identified during the desktop review are or may be present at the Site (Table 8). Critical Habitat has been identified for the Western painted turtle – Pacific Coast Population within the boundaries of the Site (Figure 3). It is unlikely that the painted turtle uses the Site for breeding due to the dense vegetation surrounding the wetland and lack of exposed soil suitable for egg laying. Potential suitable habitat has been identified on the capital regional district Natural Areas Atlas for the sharp-tailed snake in the northwest corner of the Site (Figure 3). The northern red-legged frog was detected at the Site. The habitat within the wetland is suitable for the western toad and this species could be present. The wandering salamander could be present at the Site due to areas of large decaying coarse woody debris (CWD), particularly in the south part of the Site.

Table 7: Amphibian and Reptile Species of Conservation Concern Potentially Occurring within the Site

English Name	Scientific Name	COSEWIC	BC List	SARA
Northern Red-legged Frog	*Rana aurora*	SC	Blue	SC
Western Toad	*Anazyrus boreas*	SC	Yellow	SC
Wandering Salamander	*Aneides vagrans*	SC	Blue	SC
Painted Turtle – Pacific Coast Population	*Chrysemys picta* pop. 1	T	Red	E
Sharp-tailed snake	*Contia tenuis*	E	Red	E

Notes: COSEWIC = Committee on the Status of Endangered Wildlife in Canada; BC List = BC Conservation Data Centre Status; *SARA = Species at Risk Act*; SC = Special Concern, E = Endangered; T = Threatened.

Non-listed reptile species potentially present at the Site include the three species of garter snakes: common, northwestern and terrestrial. Other amphibian species present could include several salamander species including ensatina (*Ensatina eschscholtzii*) and long-toed salamander (*Ambystoma macrodactylum*).

The following information is a brief summary of the habitat requirements and potentially suitable habitat present at the Site for species of conservation concern.

Northern red-legged Frog

The northern red-legged frog requires habitat that includes permanent slow-moving water found in wetlands or slow-moving streams. This species was detected in a wetland to the immediate south of the Site; the wetland present on the Site has the potential for foraging and breeding for this species.

Western Toad

The western toad can breed in a variety of permanent and ephemeral pools and is known to disperse and migrate many kilometers to and from breeding sites. This species could be present on Site.

Sharp-tailed Snake

The Sharp-tailed Snake is thought to feed largely on slugs and will eat both introduced and native species of slugs (Leonard and Ovaska 1998). This snake is secretive and, unlike many other snakes, is seldom found out in the open. They spend much of their time below the surface, probably in underground crevices or buried in the substrate. When on the surface, the snakes often hide under rocks, coarse woody debris, or other cover-objects.

Observations of the Sharp-tailed Snake have been documented in all months of the year, except in December in British Columbia. The snakes are most frequently found from March to early June during their peak activity period; a second, smaller peak of activity occurs in the fall, in September – October (Ovaska and Engelstoft 2008). The snakes hibernate during cold periods in the winter, and are also inactive during warm, dry periods in the summer. The timing of activities varies somewhat among years, reflecting weather conditions in particular years. The northwest corner of the Site have been mapped as potential sharp-tailed snake habitat (Appendix A) but this area has been recently been disturbed due to the development of the Olympian Way connection at Latoria Road.

Birds

Seven species identified during the desktop review, were identified as being potentially present at the Site (Table 9). The area surrounding the Site is not known to be close to important foraging sites for the Great Blue Heron; a review of the publicly available information does not note any rookeries within or adjacent to the Site but the wetland on Site has potential to support this species. Common nighthawk have been observed on the adjacent property to the west. The Western screech owl and northern pygmy owl are found in the region, however there have not been any publicly available detections of the western screech owl in the area likely due to their sensitivity to the impacts associated with urban development. The Band-tailed Pigeon and evening grosbeak do breed in the region.

Table 8: Bird Species of Conservation Concern Potentially Occurring within the Site

English Name	Scientific Name	COSEWIC	BC List	SARA
Great Blue Heron, *fannini* subspecies	*Ardea herodias fannini*	SC	Blue	SC
Common Nighthawk	*Chordeiles minor*	SC	Blue	T
Western Screech-Owl, *kennicottii* subspecies	*Megascops kennicottii kennicottii*	T	Blue	T
Northern Pygmy Owl	*Glaucidium gnoma swarthi*	-	Blue	-
Band-tailed Pigeon	*Patagioenas fasciata*	SC	Blue	SC
Olive-sided Flycatcher	*Contopus cooperi*	SC	Yellow	SC
Evening Grosbeak	*Coccothraustes vespertinus*	SC	Yellow	SC

Notes: COSEWIC = Committee on the Status of Endangered Wildlife in Canada; BC List = BC Conservation Data Centre Status; *SARA* = *Species at Risk Act*; SC = Special Concern, E = Endangered; T = Threatened.

The following information is a brief summary of the habitat requirements and potentially suitable habitat present at the Site.

Great Blue Heron *fannini* subspecies

Great Blue Herons nest in colonies within 10 km of foraging areas (Butler, 1991). Colonies may be found in single trees or contiguous forest but are typically in areas free from human disturbance (Vennesland, 2000). Great Blue Herons frequently use moist/wet conifer forest, deciduous broadleaf, and mixed forest as well as various ocean, lake, riparian and wetland habitats. They are occasionally found in agricultural, urban/suburban and grassland/shrub habitats (BC CDC, 2021 Species Summary). Great Blue Herons are known to breed on Southern Vancouver Island (DataBC, 2021). No nests were detected during the field survey and no nests are known in the direct area. This species does likely use the wetlands on Site for foraging but currently does not use the Site for breeding.

Common Nighthawk

Common Nighthawk is a species of nightjar that prefers open country in general, inhabiting a variety of open or semi-open habitats, such as forest clearings, farmlands, prairie, and urban environments (Brigham *et al*., 2011). This species may breed within the Site due to its rural development and presence of nearby open habitat (Bird Studies Canada, 2021; Audubon and Cornell Lab of Ornithology, 2021).

Western Screech Owl

Campbell (1990) describes the western screech owl as an uncommon to fairly common resident on the south coast including Vancouver Island. The western screech owl occurs at low elevation forests throughout much of Vancouver Island. The forest type and proportion of deciduous trees vary depending on location, but territories are often in riparian zones. Forested habitats are quite varied and can include urban and suburban areas. Aside from suitable nesting sites, the territory must include dense conifer roosting sites (Robertson *et al.* 2000). There is potential breeding habitat available on Site in the riparian areas however there are no detections shown on publicly available mapping (Audubon and Cornell Lab of Ornithology, 2021).

Northern Pygmy Owl

The northern pygmy owl is an uncommon resident across the province of BC and most abundant across the northwest and southern part of the province. This owl occupies the edges of open coniferous forests or mixed woodlands of riparian thickets, damp and dry meadows, vacant city lots, parks, cemeteries and residential areas. Primarily a cavity nester, historically, all nests discovered in BC have been in old woodpecker holes of coniferous trees including Douglas-fir, western hemlock, and western larch. No northern pygmy owls were detected during the field program. Suitable habitat is present, however the proximity to urban development and its associated disturbances reduces the suitability of the habitat. Publicly available mapping indicates this species has been detected on the immediate vicinity of the Site during the breeding season (Audubon and Cornell Lab of Ornithology, 2024).

Olive-sided Flycatcher

Olive-sided flycatchers are often found in clearings and early post-fire landscapes. They have a preference for coniferous forest edges and opening like meadows, rivers, bogs, swamps and ponds. They feed exclusively on insects that are caught in the air and have a preference for bees. Cup nests are constructed high in the tree, usually conifers but occasionally deciduous. The olive-sided flycatcher arrive on their breeding grounds late in the spring. Due to the presence of suitable trees for nesting as well as several grass dominated areas and the detection of this species calling during the breeding season, this species likely breeds on Site.

Band-tailed Pigeon

The Band-tailed Pigeon is found in the forests or coastal woodlands of Western BC and America. It perches, nests and feeds in coniferous trees such as pines, as well as maples and alders. It prefers forest environments and eats nuts, seeds, berries, blossoms and insects found in coastal woodland and forest habitat. Its breeding season begins in March and lasts through late spring. Nests are constructed on the ground, in low brush, or in the fork of lower tree branches usually associated with stream habitat. This species may nest in mesic forest habitats similar to those located throughout the Site. The species has adapted to suburban and agricultural environments with sufficient tree cover (Davidson, 2015). Band-tailed pigeon were not detected during the field program but have been observed in the immediate vicinity of the Site during the breeding season and therefore could breed on the Site (Audubon and Cornell Lab of Ornithology, 2024).

Evening Grosbeak

Evening Grosbeaks breed in mature and second-growth coniferous forests of northern North America, including spruce-fir, pine-oak, and aspen forests. Less commonly, they nest in deciduous woodlands, parks, and orchards. In winter Evening Grosbeaks live in coniferous forest and deciduous forest as well as in urban and suburban areas. When wintering in urban environments they are most abundant in small woodlots near bird feeders. They are a year-round occupant of southern Vancouver Island. Evening Grosbeaks nest high in trees (both coniferous and deciduous) or large shrubs. This species was not detected during the field survey but has been observed in the immediate vicinity of

the Site during the breeding season and therefore could breed on the Site in suitable habitat (Audubon and Cornell Lab of Ornithology, 2021).

Mammals

Both mammal species of conservation concern identified in the desktop study that could be present on the Site are bat species (Table 10). Both species are likely found at the Site and bat roosts were detected during the field program (Figure 3). The roost sites included a cave/crevice system along the edge of a large rock outcrop that is likely a maternity roost, as well as a tree day roost site within a young arbutus tree. The following information is a brief summary of the roosting habitat requirements and potentially suitable habitat present at the Site.

Table 9: Mammal Species of Conservation Concern Potentially Occurring within the Site

English Name	Scientific Name	COSEWIC	BC List	SARA
Little Brown Myotis	*Myotis lucifugus*	E	Blue	E
Townsend's Big-eared Bat	*Corynorhinus townsendii*		Blue	

Notes: COSEWIC = Committee on the Status of Endangered Wildlife in Canada; BC List = BC Conservation Data Centre Status; *SARA* = *Species at Risk Act*; E = Endangered.

Little Brown Myotis

The little brown myotis summer roosts include buildings and other man-made structures, as well as within dying tree cavities, under the loose bark of a tree and in bat houses (Nagorsen and Brigham, 1993; BC Ministry of Environment, 2016a). This species could be present during the spring to winter season using the Site for roosting and foraging during this time.

Townsend's Big-eared Bat

Townsend's big-eared bats summer roost in large hollow trees (Holroyd et al., 2016), cliffs and large bat houses (BC Ministry of Environment, 2016a). This species could be present during the spring to winter season using the Site for roosting and foraging during this time; it has been detected in the immediate vicinity of the Site.

2.0.3 Aquatic Resources

Methods

WSP completed a Riparian Areas Protection Regulation (RAPR) field assessment for the wetland located on the Site. This aquatic feature was subject to the RAPR assessment as it is connected to a fish bearing system; fish presence on the Site has not been confirmed. The high-water mark for all aquatic features was flagged and the flagging was surveyed by a BC Land Surveyor. The completed RAPR report is presented in Appendix D.

Results

The aquatic resources present on Site are located within the Latoria Creek watershed which covers an approximate area of 404 ha encompassing predominantly the City of Colwood, but also to a lesser extent portion of the City of Langford and the District of Metchosin. The headwaters to this system are located to the west and north of the intersection of Veteran's Memorial Parkway (VMP) and Latoria Road.

A portion of a wetland (and its associated Streamside Protection and Enhancement Area [SPEA]) is located in the southeast corner of the Site which is part of the wetland complex that comprises the headwaters for Latoria Creek (WSC 920-031900). The wetland is a part treed swamp and part shallow open water that consists of obligative and facultative wetland plants including skunk cabbage, Nootka rose, slough sedge, hardhack, Pacific willow, red-osier dogwood and Pacific crabapple. Riparian vegetation consists of western redcedar, Douglas-fir, bigleaf maple and red alder with an understorey of salmonberry, red elderberry, salal, dull Oregon-grape, bracken, lady fern and sword fern.

The wetland outlet channel flows to the north northeast through the Creekview residential development and across Latoria Road (at Creekview Lane) where is flows to the east along the north side of the road for a length of approximately 900 m before the watercourse crosses south under Latoria Road (at Wishart Road) and flows southeast and enters Latoria Creek Park. Latoria Creek enters a ravine approximately 100 m downstream. Latoria Creek flows in a south-southeast direction for a distance of 950 m before discharging under Metchosin Road. Latoria Creek flows for a further 150 m south until it discharges into a man-modified water body. The stream then flows southeast for 220 m before entering the estuary at Albert Head Lagoon.

Fisheries Resources

There are three fish migration barriers on Latoria Creek located south of Metchosin Road; one at the culvert under Metchosin Road and two approximately 100m south of Metchosin Road north and south of a residential pond off Duke Road. Another fish barrier (waterfall) was noted on Latoria Creek approximately 80 m upstream from Metchosin Road. A review of previous occurrence records identified three fish species within Latoria Creek.

Table 10: Summary of Historical Fish Presence within Latoria Creek

		STATUS			
COMMON NAME	**SCIENTIFIC NAME**	**SARA[1]**	**COSEWIC[2]**	**BC LIST[3]**	**PROVINCIAL STATUS[4]**
Cutthroat trout	Oncorhynchus clarki lewisii	1-SC (2010)	SC	Blue	S2S3 (2018)
Prickly Sculpin	Cottus asper	N/A	N/A	Yellow	S5 (2019)
Threespine stickleback	Gasterosteus aculeatus	N/A	N/A	Yellow	S5 (2018)

(1) SARA: Federal SARA Schedule number (1-3) for this species. See the SARA website for more information (Government of Canada, 2023). E = Endangered, T = Threatened, SC = Special Concern, NA = Not Assessed.

(2) COSEWIC: rank is followed by the date the rank was last reviewed. E = Endangered; T = Threatened; SC = Special Concern; NAR = Not at Risk; NA = Not Assessed (Government of Canada, 2023).

(3) BC List: The provincial list to which the species is assigned based on the BC CDC (2023). Red: any indigenous species or subspecies that is extirpated, endangered, or threatened in BC; Blue: any indigenous species or subspecies considered to be of special concern in BC, but is not extirpated, endangered, or threatened; Yellow: any indigenous species or subspecies considered secure in BC – encompasses all not listed as red or blue.

(4) Provincial Status: Provincial ranking based on NatureServe. Ranks have the following meaning: X = presume extirpated; H = historical (species) / possibly extirpated (communities); 1 = critically imperilled; 2 = imperilled; 3 = special concern, vulnerable to extirpation or extinction; 4 = apparently secure; 5 = demonstrably widespread, abundant, and secure; NA = not applicable; NR = not ranked; U = unrankable.

WSP conducted a fish survey of the Latoria Creek watershed in 2019 and 2020. A total of 179 three-spine stickleback were captured during minnow trap efforts and a total of 26 fish comprised of 19 three-spine stickleback, 4 coastal cutthroat trout and 3 prickly sculpin were captured during electrofishing. Three-spine stickleback represented the overall dominant fish species captured. No cutthroat trout or prickly sculpin were captured upstream of the Duke Road culvert in Spruston Creek (fish site ID 6) or upstream of the waterfall in Latoria Creek below the residential pond,

south-east of Duke Road (fish site ID 15b). As part of the fish survey eight baited minnow traps were set for 48 hours in April 2021, in the large wetland located to the south of the Site (FP-11). A second effort was made in December 2021 (2 traps for 24 hours). No fish were captured, although several predacious water beetles and a rough-skinned newt (Taricha granulosa) were caught. Red-legged frog (*Rana aurora*) and Pacific tree frog (Pseudacris regilla) are also known to occur in the watershed.

The SPEA for Wetland #1 is 15 m on the north, west and east side and 30 m on the south. Table 11 summarizes the SPEAs for the aquatic feature on the Site.

Table 11: SPEAs for Aquatic Resources on the Site

AQUATIC FEATURES	ASSESSMENT AREA (M)	SPEA (M)
Wetland #1	30	15 (N/W/E), 30 (S)

3 IMPACT ASSESSMENT

3.0 VEGETATION

3.0.1 POTENTIAL IMPACTS

Potential impacts associated with the loss of vegetation include the following:

- Loss of rare or endangered plants or plant communities;
- Loss of wildlife habitat;
- Loss of sensitive ecosystems;
- Mass wasting or erosion due to removal of root systems.

Approximately 3740 m^2 of the Site will be developed which represents 46% of property. Plant communities will be impacted as follows:

- 185 m^2 or 21.9% of Douglas-fir / arbutus (DA);
- 1976 m^2 or 81.8% of Douglas-fir / Grand fir – Oregon Grape (DG)
- 1004 m^2 or 31.2% of Western redcedar/Douglas-fir – Kindbergia (RK);
- 575 m^2 or 46.4% of Disturbed Lands (DIS)

The proposed development will result in the loss of 21.9% of woodland (WD) but all of the riparian (RI) and wetland (WN) will be retained.

The loss of vegetation as a result of the Site development will result in the loss of the following rare plant communities:

- 21.9% of Douglas-fir / Arbutus (DA) (red-listed)
- 81.8% of Douglas-fir / Grand fir – Oregon Grape (DG)
- 31.2% Western redcedar / Douglas-fir-Oregon beaked moss (RK) (red-listed)

3.0.2 MITIGATION STRATEGIES

In order to compensate for these losses an area of approximately 4407 m^2 is to be retained as green space which will consist of moist and wet forest and wetland. The greenspace retention plan allows for a good representation of the various plant communities present on Site with a connectivity between them.

For those trees to be retained, in rear yards and strata lots, WSP recommends that a **Tree Protection Plan** be put in place following the first phase of clearing. This plan should include the following:

- Marking trees or flagging areas that are to be protected during the construction phase of the project;
- Install ‘Tree Protection’ signs;
- Take all measures necessary to prevent the activities such as storage of materials or equipment, stockpiling of soil or excavated materials, burning, excavation or trenching or cutting of roots or branches within the tree protection areas;
- Restrict vehicle traffic to designated access routes and travel lanes to avoid soil compaction and vegetation disturbances; and,

- Avoid alterations to existing hydrological patterns to minimize impact on vegetation.

In order to effectively protect adjacent sensitive ecosystems, such as rock outcrops and woodlands, during construction WSP also recommends putting in place a **Sensitive Ecosystem Protection Plan** that includes the following:

- Where possible, limit clearing to the minimum area required for construction boundaries Snow fence areas that are to be protected during the construction phase of the project;
- Install 'Sensitive Ecosystem Protection' signs;
- The minimum amount of vegetation possible should be removed from environmentally sensitive areas or areas where rare or endangered plants or plant communities are identified by the environmental monitor; and,
- Take all measures necessary to prevent the activities such as storage of materials or equipment, stockpiling of soil or excavated materials, burning, excavation or trenching or cutting of roots or branches within the sensitive ecosystem protection areas.

Due to the close proximity of the development to the sensitive ecosystem the following guidelines as outlined in the Sensitive Ecosystem Inventory)(SEI) Conservation Manual (MELP, 2000) should be followed after the completion of construction where possible:

- Restrict recreational access;
- Control the introduction or spread of invasive species;
- Prevent wildlife disturbance (especially nesting or breeding areas);
- Maintain hydrologic regime.

As a further effort to mitigate for vegetation losses an **Invasive Species Management Plan** will be put in place to remove and manage invasive plant species on the Site. This plan will be created during the construction process. The following measures are recommended to prevent invasive plant spread:

- Ensure vehicles and equipment are clean of invasive plants and seed;
- Minimize soil disturbance in all construction and maintenance activities;
- Limit the movement of weed-infested soil or gravel;
- When storing materials known to contain invasive plants and/or seeds it should be laid down on a tarp (and also covered with a tarp) to reduce contact with native soils and reduce wind dispersal;
- When using mulch use straw rather than hay as hay often contains noxious weeds;
- Use certified weed-free seed mixes or vegetation in disturbed areas to provide competition for any new weeds;
- Where top-dressing with soil is necessary ensure that soil has been sterilized to reduce risk of introducing weeds; and,
- Contain neighbouring infestations and restrict movement of invasive plants from adjacent lands. Roadways, railways and waterways are often corridors for invasive plant spread

3.1 WILDLIFE

3.1.1 POTENTIAL IMPACTS

As mentioned in Section 3.0 (Vegetation) there will be losses to wildlife habitat as result of Site clearing and lot and road development.

Habitat Loss

Habitat losses will reduce the carrying capacity of the land base for wildlife. The retention of the wetland and the surrounding vegetation (wet deciduous woodland) of moderate to high value will allow for habitat connectivity throughout the Site. A large proportion of mesic coniferous forest will be lost post construction; as well as all of the dry mixed woodland will be removed, both having moderate wildlife values. No nest trees protected under Section 34 (B.C. *Wildlife Act*) were noted on the property.

Wildlife Disturbances

In addition to habitat loss, the project has some potential to cause disturbance of wildlife breeding, feeding, movement and/or dispersal patterns. Construction-related activities such as falling and chipping, and the daily operation of construction machinery (trucks, excavators) will generate considerable noise, which may force wildlife to abandon habitats up to 200 m from the active construction zone. The size of the impact area would depend on factors such as the noise level, the duration of the activity, and its timing. In addition to noise disturbance, cavity-nesting species can be directly impacted during construction, by the removal of hazardous snags to create safe work zones. However, the main group of concern with respect to disturbance is forest-associated birds. Construction during the spring breeding season may result in lowered reproductive success or nest abandonment.

3.1.2 MITIGATION STRATEGIES

Habitat Loss

The retention of the forested greenspace surrounding the wetland and connectivity of natural areas to be retained will significantly reduce the impacts to wildlife as a result of this residential development. Most species anticipated to occur in the development area will relocate to the riparian woodland below. Maintaining the wetland and associated riparian zone as greenspace will also function as a wildlife corridor, allowing animal movement.

It is not possible to completely mitigate the impact of permanent habitat loss. In order to further reduce habitat loss related impacts, consideration should be given to the following mitigation measures:

- Use existing clearings for equipment storage, material stockpiling and lay-down areas.
- Erect barrier fencing around the drip line of any trees to be retained in proximity to work areas.
- Undertake enhancement of retained habitat by the placement of large woody debris and planting trees and shrubs. Large tree stems or branches cleared from the development Site can be relocated to the adjacent wooded slope.
- Where safe to do so, create wildlife trees in retained areas, rather than completely removing hazard trees.

Wildlife Disturbances

It is recommended that tree clearing on the property take place prior to the commencement of the species protected under the *Migratory Birds Convention Act* breeding window in March. Should tree clearing take place earlier in the year (February to March) a nocturnal raptor survey should be completed to ensure that there are no nesting owls present on the Site and compliance with the *BC Wildlife Act*.

In addition, the Best Management Practices as outlined in Section 4 should be followed wherever possible in order to minimize the impacts to wildlife disturbance.

3.2 AQUATIC RESOURCES

A discussion of measures to protect the wetland and associated riparian vegetation are presented in the RAPR report (Appendix D).

4 BEST MANAGEMENT PRACTICES

4.0 WILDLIFE MANAGEMENT PLAN

The following wildlife and general management guidelines are intended to act as a planning tool and a way to mitigate impacts from the residential development plan to the adjacent retained habitat.

4.0.1 GENERAL MITIGATION RECOMMENDATIONS

For the Site it is recommended that:

- If possible for night lighting, use low-pressure sodium lights and install them at a height and angle that will minimize light and glare impacts onto the adjacent forest habitat, as these lamps will be less attractiveness to night-flying insects and reduce light disturbances to nocturnal animals;
- Implement a sediment and erosion control plan pre-construction;
- Do not allow residents to leave open garbage cans and pet food out, especially at night when opportunists are most active, as this would encourage opportunists such as raccoons and support populations above that found in the wild;
- Give preference to native species in landscape planting both in residential yards and landscaped common areas of the development. Landscape planting using exotic species is of little value to wildlife and serves to reduce the biodiversity of the area, especially with the significant polygons in the area. Given the proximity of the landscaped area, it is likely that the landscaping will encroach upon the indigenous vegetation and the sensitive ecosystem polygons identified. Additionally, landscaping with indigenous species provides the benefits of buffer zones;
- If the construction is to occur during the breeding season (summer period), before grading or using heavy construction equipment, the ground should be sprayed with water which will reduce the amount of dust released into the air by 50 to 90%;
- During construction activities, hydroseeding and other planting efforts should utilize indigenous vegetation, preferably indigenous species already existing in the area. Where feasible, salvage native plants to be removed and replace them in areas where they would be of benefit. If possible, seed for planting should be obtained from local sources. Appropriate indigenous seed mixes should be used for hydroseeding. Conscientious hydroseeding will prevent the spread of, and introduction of, exotic species.

4.0.2 RAPTOR AND BREEDING BIRD MANAGEMENT PLAN

General recommendations for the retention and development of passerine habitat, not specific to any species, should include the following where possible:

- Encourage the placement of nest boxes in areas throughout the area post-construction to benefit cavity nesters (i.e. red-breasted nuthatch, Bewick's wren, woodpeckers, and the chestnut-backed chickadee), and along open, primary successive vegetated growth for cavity nesting birds (i.e. swallows, and Bewick's wrens). Involve strata management to clean the next boxes at the end of each breeding season as maintenance is an important component of repeated use;

- Where possible, retain natural corridors for wildlife movement and replant areas devoid of vegetation with indigenous shrubs and trees to allow contiguous corridor travel and create safety habitat for birds during the breeding season and during the migration seasons (spring and fall);
- Avoid forest clearing during the nesting period to prevent bird-nest abandonment. Where possible, clearing should be done before or after this period;
- Avoid the use of pesticides in the area, post-construction, to control weeds.

A general raptor management approach for the Site should include the following:

- Where possible, the prohibition of Site construction or maintenance around any identified, active raptor nests during the breeding season;
- Where possible, along the edges of the development, the retention of a selection of stand structural elements, such as large green trees, snags, logs on the forest floor, and canopy gaps. Older green trees should have structural characteristics such as cracks and holes in the bole where limbs have been shed. Snags that are retained should have cracks, bird holes and hollow interiors or should have the potential to develop these characteristics.

4.0.3 AMPHIBIAN AND REPTILE MANAGEMENT PLAN

The following general recommendations should be taken into consideration and implemented where possible to reduce potential impacts to amphibians:

- Post-development, avoid the use of pesticides. Spot treatments with herbicides may be used in exceptional circumstances (e.g., noxious weeds) where it can be demonstrated that the herbicide will not be harmful to the herpetifauna habitat; and,
- Maintain natural wildlife corridors for dispersal.
- Follow Best Management Practice's for landscaping within and around potential sharp-tailed snake habitat.

4.0.4 SMALL MAMMAL MANAGEMENT PLAN

The following mitigation measures should be implemented where possible to reduce potential impacts to small mammals and sustain this food source for raptors and large mammals:

- Post-development, allow the remaining protected habitat to provide insects, not only from the forest but from the watercourse. This means protecting the small microclimates can be sustained to favor foraging areas for small mammals;
- Retain, where possible, the coniferous and mixed forest areas (i.e. Site perimeter habitat) that have well-developed canopy cover and an abundance of coarse woody debris necessary for microclimate protection and cover;
- Maintain connective corridors between vegetation units and core forested areas surrounding the Site;
- Where possible, retain areas of dense herbaceous and/or shrub layers, and forest litter.

4.1 SEDIMENT AND POLLUTION CONTROL PLAN

4.1.1 CONSTRUCTION PHASE

A sediment control plan should be followed throughout and following the construction phase. The sediment control plan will consist of the following elements:

- To the extent possible, site clearing and grading will be scheduled for the dry weather period (summer), when the potential for surface runoff to erode exposed soils is lowest. As much as possible, the clearing and grading operations will be staged to avoid having large areas of disturbed soil present at any time, and particularly during the winter;
- To the extent possible, site clearing will immediately precede construction to minimize the amount of time that disturbed soils are exposed to weathering. Clearing will be limited to the minimum area necessary for construction;
- If any soil or other erodible material is to be stockpiled for more than seven days, it will be covered with polyethylene sheeting that is anchored securely to prevent displacement by wind;
- Where necessary, silt fencing will be used to retain sediments on the construction site. The design engineers will determine the appropriate sizes and locations of settling ponds;
- The sediment control structures will be installed as the first construction activity. All sediment control structures will be inspected regularly, and repaired/maintained as necessary;
- Ditches and/or berms will be installed as necessary to direct surface runoff away from disturbed areas. The ditches will be designed to prevent erosion due to high water velocities through the use of check dams (sandbags), filter fabric, rock rip-rap or polyethylene lining. Apart from these necessary diversions, the natural drainage patterns will be maintained;
- Sediment and erosion control materials will be stockpiled on Site for use in any emergency situation that may arise. Stockpiled materials will include filter cloth, hay bales, rip-rap, grass seed, drain rock, culverts, matting polyethylene, used tires, etc; and,
- As soon as practical after construction, any remaining disturbed soils will be revegetated using an appropriate grass seed mixture. Seeding will be conducted before the end of the growing season to allow establishment of germination/roots.

4.1.2 POST-CONSTRUCTION PHASE

Ground water infiltrator systems associated with residences and driveways will allow for the separation of sediments and pollutants from mixing with surface runoff. The infiltrator systems will need to be regularly inspected and, where necessary, cleaned.

The stormwater best management practices are targeted at collecting sediment and erosion and maintaining water quality. Road runoff can be directed to bio-swales where suspended solids can settle out. Bioswales should be vegetated with indigenous wetland plants.

Water quality control facilities should be designed to maintain water quality in all watercourses by collecting and diverting ‘first flush’ events of smaller storms (more frequent runoff events) from impervious areas.

4.2 SPILL PREVENTION PLAN

The spill prevention plan consists of the following elements:

- Activities that carry a risk of materials' spills should take place within a bermed staging area. These activities include mixing concrete or other materials, any vehicle fuelling, and other maintenance of equipment that is done on Site;
- Any areas where vehicle fuels or other potentially deleterious substances are stored should be equipped with impervious containment berms. If fuel tanks larger than 250 L are present within a berm, the bermed area should have a holding capacity equal to 125% of the capacity of the largest tank;
- Storage and maintenance facilities should have spill clean-up and disposal equipment. They also should have Safety Data Sheets (SDS) for any hazardous substances, a list of emergency contact names and telephone numbers, and a written list of emergency response and spill-reporting procedures;
- Mobile construction equipment should be fuelled, lubricated and serviced only at these approved locations;
- If a spill does occur, it should immediately be reported to the environmental monitor and to the Provincial Emergency Program (1-800-663-3456). Written notification should follow within two weeks of the verbal report;
- If a spill does occur, Site personnel should immediately take steps to stop the discharge (if possible). As quickly as possible, they should contain the spill, clean up the affected area and dispose of waste materials at an approved disposal site;
- All hydraulic systems, fuel systems and lubricating systems should be in good repair;
- Equipment should be inspected before commencing work. Equipment with fuel or fluid leaks should not be permitted to work within or above any watercourse. Any equipment that develops a leak should immediately be removed from the watercourse and repaired;
- Before commencing work, all equipment should be steam-cleaned to remove oil, grease and other substances deleterious to aquatic life; and,
- Equipment should use only biodegradable hydraulic fluid.

The Spill Prevention Plan will be operationalized and put into effect by the Environmental Monitor (EM), who will be responsible for ensuring that the contractor is familiar with the plan, and that all elements of the plan are appropriately put into effect.

4.3 ENVIRONMENTAL MONITORING

The EM will be responsible for ensuring compliance with these guidelines, the Development Permit conditions and possibly provincial and government agencies. They will follow and enforce the approved sediment erosion control plans and other relevant legislation, and for putting the Spill Prevention Plan into effect. The monitoring guidelines will be in place prior to any works proceeding.

4.3.1 MEETINGS AND COMMUNICATION

The EM will meet with the general contractor for the Site to establish appropriate lines of communication. The monitor should also meet with the Site contractor during any Site inspection. The EM will also meet with subcontractors, other field staff, environmental agency representatives, key stakeholders and other engineering staff associated with the project where required.

4.3.2 MONITORING PRIOR TO AND DURING SITE CLEARING

The EM will be responsible for the following activities prior to and during site clearing:

- Examining construction areas prior to commencement of work to identify sensitive areas where adverse effects may occur to ensure that they are adequately delineated;
- Ensuring that contractors are aware of environmentally sensitive areas in advance of construction activities and assisting in the development or modification of appropriate mitigative measures, if necessary;
- Marking environmentally sensitive areas and identify these areas to the construction foreman and/or crew;
- Reviewing vehicle access points to the Site and the sediment control structures at these points prior to the start of clearing;
- Providing information and advice to project staff and contractors about construction matters related to environmental issues;
- Preparing Site inspection field notes, and routinely taking photographs (and where necessary video) to record conditions; and
- Reviewing the sediment control structures proposed during construction.

4.3.3 DRAINAGE AND SEDIMENT CONTROL

The EM will review the proposed sedimentation control plan proposed for the Site with the Site contractor prior to construction activities. The EM will be on Site during construction of the sediment control system (SCS). It is understood that the General Contractor will be responsible for ensuring that the SCS is maintained and working adequately to control all discharges from the Site. Their responsibilities will include inspection and maintenance of the SCS.

During construction, the responsibility of the EM will be to:

- Examine the adequacy of the sedimentation and erosion control works in reaching acceptable sediment levels as recommended by DFO/WLRS guidelines (i.e. total suspended solids and turbidity) discharged from the Site;
- Make recommendations to the General Contractor on improving the SCS, if required;
- Instruct the construction foreman as to the site requirements and design specifications on sediment control structures and complete an inspection of such structures on a routine basis, particularly during periods of inclement weather;
- Review placement of sand, gravel and materials (eg. hydroseed and mulch) specified to control erosion in exposed areas;

- Require that works be stopped in the event of malfunctions of the sediment control system or contravention of discharges limits;
- Ensure that runoff is diverted from cleared areas by use of swales or low berms and that runoff is routed to the appropriate sedimentation control structures. In environmentally sensitive or problem areas, the monitor will need to oversee the installation and maintenance of sediment control structures;
- Review stockpiling methods for excavated materials to ensure that they are placed in appropriate locations and stored properly (eg. covered with tarps); and,
- Recommend mitigation measures and ensure expeditious implementation of these if activities are found to have the potential for environmental impact or poor water quality runoff.

4.3.4 CONTROL OF DELETERIOUS SUBSTANCES ON THE DEVELOPMENT SITE

The EM will review housekeeping practices on Site (e.g. daily cleanup, use of disposal bins) and ensure proper use, storage and disposal of deleterious substances and associated containers. This necessitates that the monitor be aware of all such substances used on Site. Any spillage of fuels, lubricants or hydraulic oils events should be immediately reviewed by the monitor to determine if additional remedial measures are required and, if necessary, implemented expeditiously. The monitor will operationalize the Spill Prevention Plan and will ensure that an inventory of all hazardous materials is maintained.

4.3.5 FREQUENCY OF SITE INSPECTIONS

Initially, the EM will visit the Site daily. Once all the environmental management measures are in place and these measures have demonstrated effective Site control, the frequency of monitoring will be decreased to once per week. This frequency will increase during heavy rainfall events.

4.3.6 REPORTING

The EM will provide environmental monitoring summary reports to the project developer and the City of Colwood as required. The EM will also complete an environmental completion report at the end of the construction phase, which will outline the major construction activities in relation to environmental issues, significant concerns encountered during the project and mitigation measures used to deal with those concerns.

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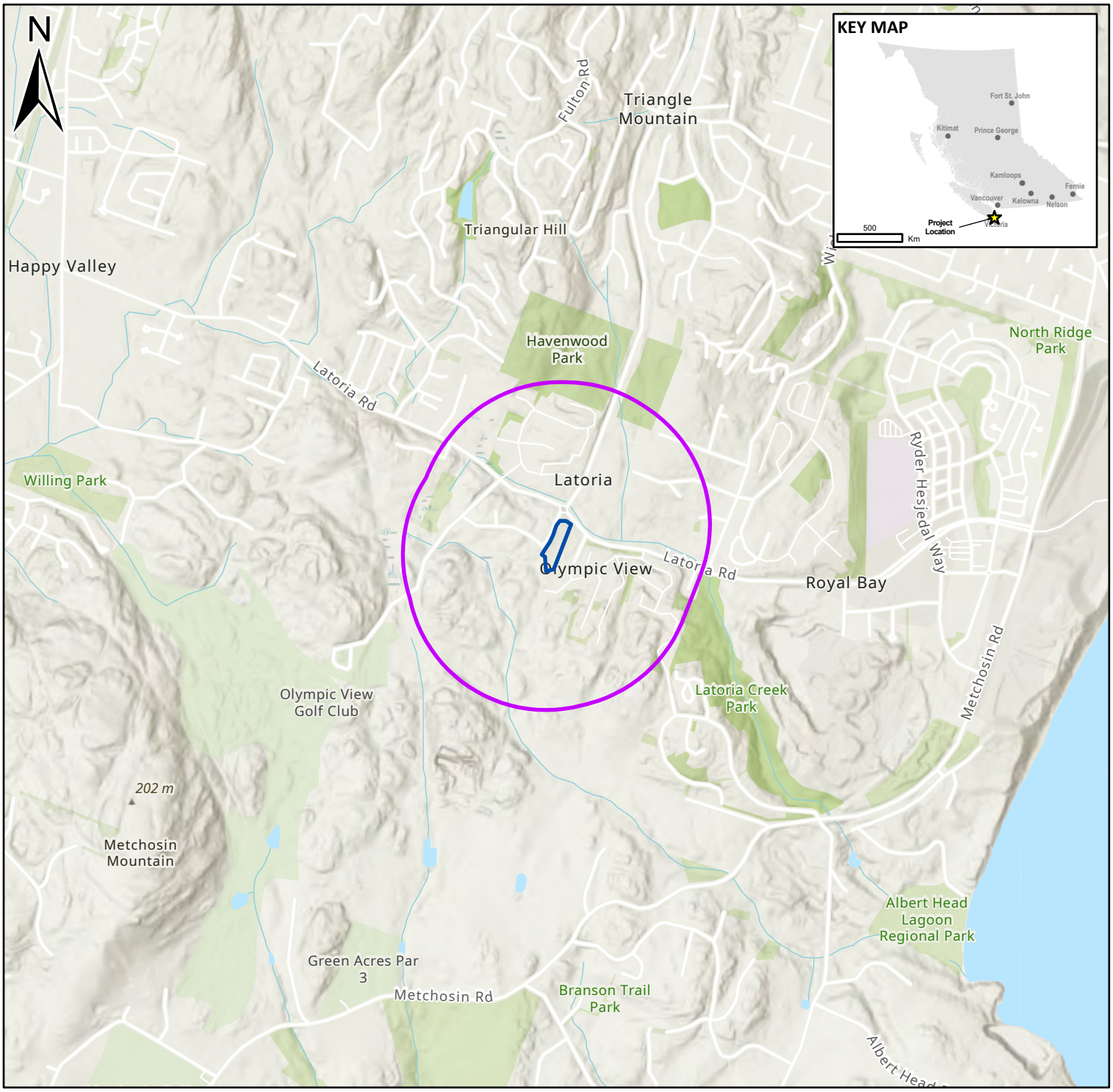
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APPENDIX

A FIGURES



LEGEND

- PROJECT SITE
- STUDY AREA

DRAFT

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1:20,000 Kilometers

REFERENCES

1. Parcel and hydrography data contain information licensed under the Open Government License – British Columbia

Spatial Reference: NAD 1983 UTM Zone 10N

CLIENT

WEST URBAN DEVELOPMENT LTD.

PROJECT

3601 OLYMPIAN WAY, COLWOOD, BC

TITLE

OVERVIEW

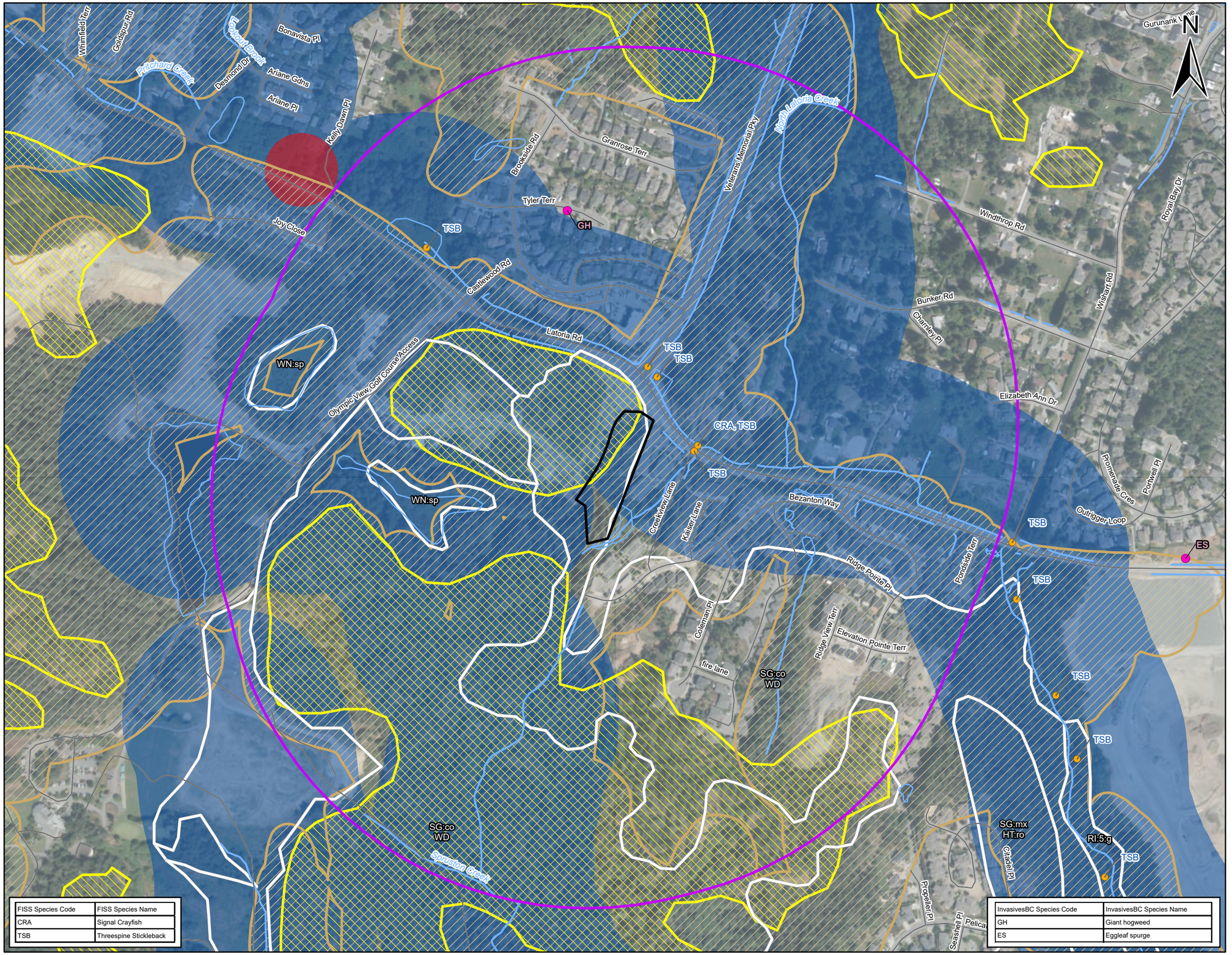
CONSULTANT

wsp

YYYY-MM-DD	2024-10-28
DESIGNED	SB
PREPARED	MY
REVIEWED	
APPROVED	

PROJECT NO.	CONTROL	REV.	FIGURE
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FISS Species Code	FISS Species Name
CRA	Signal Crayfish
TSB	Threespine Stickleback

InvasivesBC Species Code	InvasivesBC Species Name
GH	Giant hogweed
ES	Eggleaf spurge

LEGEND

- EXISTING ROAD
- WATERCOURSE
- WATERBODY
- PROJECT SITE
- STUDY AREA
- INVASIVESBC LISTED SPECIES
- FISS POINT
- POTENTIAL SHARP TAIL SNAKE HABITAT AREA
- SENSITIVE ECOSYSTEMS AREAS
- WESTERN PAINTED TURTLE PACIFIC COAST POPULATION CRITICAL HABITAT

CDC ANIMAL SPECIES OF CONSERVATION CONCERN

- NORTHERN RED-LEGGED FROG

CDC ECOLOGICAL COMMUNITY AT RISK OF CONSERVATION CONCERN

- DOUGLAS-FIR / DULL OREGON-GRAPE

Note:
CDC Mask Sensitive covers the whole map

DRAFT

0 50 100 200
1:5,000 Meters

REFERENCES

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Spatial Reference: NAD 1983 UTM Zone 10N

CLIENT
WEST URBAN DEVELOPMENT LTD.

PROJECT
3601 OLYMPIAN WAY, COLWOOD, BC

TITLE
ENVIRONMENTAL FEATURES

CONSULTANT
wsp

YYYY-MM-DD	2024-11-01
DESIGNED	SB
PREPARED	MY
REVIEWED	
APPROVED	

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LEGEND

- PLOT
- BARRED OWL
- WILDLIFE TREE
- EXISTING ROAD
- WATERCOURSE
- WATERBODY
- PARCEL BOUNDARY
- DESIGN LINE
- GREEN AREA
- DESIGN BUILDING
- DESIGN DECK
- PROJECT SITE

VEGETATION POLYGON

- CD - BLACK COTTONWOOD
- DA - DOUGLAS-FIR/ARBUTUS
- DG - DOUGLAS-FIR – DULL OREGON-GRAPE
- DIST - DISTURBED
- RC - WESTERN REDCEDAR – SKUNK CABBAGE
- RK - WESTERN REDCEDAR – OREGON BEAKED MOSS

DRAFT

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1:1,000 Meters

REFERENCES

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Spatial Reference: NAD 1983 UTM Zone 10N

CLIENT
WEST URBAN DEVELOPMENT LTD.

PROJECT
3601 OLYMPIAN WAY, COLWOOD, BC

TITLE
VEGETATION POLYGON

CONSULTANT

YYYY-MM-DD	2024-10-28
DESIGNED	SB
PREPARED	MY
REVIEWED	
APPROVED	

PROJECT NO.	CONTROL.	REV.	FIGURE
CA0035496.7539		A	3

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APPENDIX

B PHOTOPLATES



Photo 1: Disturbed area in northwest corner of Site



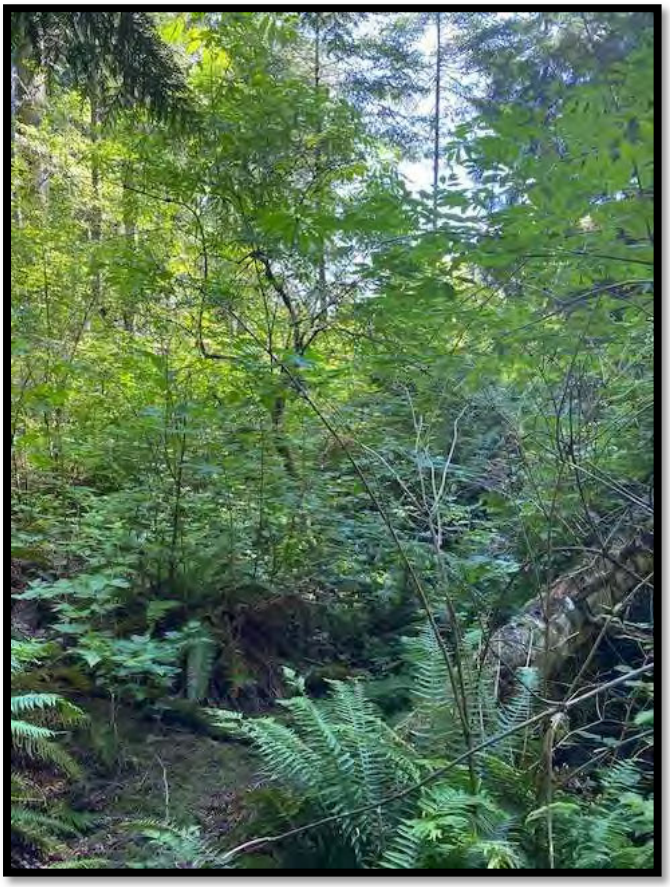
Photo 2: DA ecological community in northeast part of Site



Photo 3: DG ecological community



Photoplate 4: RK ecological community present in south part of Site



Photoplate 5: CD ecological community adjacent to swamp wetland



Photoplate 6: RC swamp wetland located along southeast edge of Site



Photoplate 7: Barred owl observed in east part of Site



Photoplate 8: Cavity nest tree in south part of Site

APPENDIX

C CONVERATION DATA CENTRE INORMATION

Appendix A-1 - Rare Plants Occurring in City of Colwood (CDC, October 2024)

Scientific Name	English Name	Provincial	BC List	Global	COSEWIC	SARA
Abronia latifolia	yellow sand-verbena	S3 (2019)	Blue	G5 (1988)		
Allium amplectens	slimleaf onion	S3 (2019)	Blue	G4 (1988)		
Balsamorhiza deltoidea	deltoid balsamroot	S2 (2019)	Red	G5 (1988)	E	1-E (2003)
Bartramia aprica	rigid apple moss	S2 (2024)	Red	GU (2006)	T	1-E (2003)
Bidens amplissima	Vancouver Island beggarticks	S3 (2019)	Blue	G3 (2016)	SC	1-SC (2003)
Camissonia contorta	contorted-pod evening-primrose	S1S2 (2022)	Red	G5 (1988)	E	1-E (2007)
Carex tumulicola	foothill sedge	S3S4 (2019)	Yellow	G4 (2023)	SC	1-E (2010)
Castilleja levisecta	golden paintbrush	S1 (2019)	Red	G2 (2020)	E	1-E (2003)
Castilleja victoriae	Victoria's owl-clover	S1 (2019)	Red	G1 (2016)	E	1-E (2012)
Cephalanthera austiniae	phantom orchid	S2 (2019)	Red	G4 (1990)	E	1-E (2019)
Clarkia purpurea ssp. *quadrivulnera*	wine-cup clarkia	S2 (2019)	Red	G5T5 (2016)		
Claytonia washingtoniana	Washington springbeauty	S3 (2022)	Blue	G2G4 (2001)		
Crassula connata	Erect Pigmyweed	S2S3 (2019)	Blue	G5 (1993)		
Entosthodon fascicularis	banded cord-moss	S3S4 (2024)	Yellow	G4G5 (2001)	SC	1-SC (2006)
Epilobium densiflorum	dense spike-primrose	S2 (2019)	Red	G5 (1988)	E	1-E (2006)
Epilobium torreyi	brook spike-primrose	SH (2019)	Red	G5 (1988)	E	1-E (2007)
Erigeron philadelphicus var. *glaber*	salt marsh Philadelphia daisy	S2S3 (2022)	Blue	G5T2T3 (2022)		
Eurybia radulina	rough-leaved aster	S2 (2022)	Red	G4G5 (2024)	T	
Festuca rubra ssp. *mediana*	dwarf red fescue	S5? (2020)	Yellow	G5TNR		
Githopsis specularioides	common bluecup	S3 (2019)	Blue	G5 (1994)		
Glehnia littoralis ssp. *leiocarpa*	American glehnia	S3 (2019)	Blue	G5T5 (1991)		
Hosackia gracilis	seaside bird's foot lotus	S2 (2019)	Red	G4 (2005)	E	1-E (2003)
Hosackia pinnata	bog bird's-foot trefoil	S2? (2019)	Red	G4G5 (2001)	E	1-E (2005)
Juncus kelloggii	Kellogg's rush	S1S2 (2019)	Red	G3? (1990)	E	1-E (2005)
Lathyrus littoralis	silky beach pea	S2 (2019)	Red	G3G4 (2013)	T	1-T (2023)
Limnanthes macounii	Macoun's meadow-foam	S2? (2019)	Red	G2? (2023)	SC	1-T (2006)
Lomatium dissectum	fern-leaved desert-parsley	S2 (2019)	Red	G4T4 (2003)		
Lomatium papilioniferum	butterfly bearing lomatium	S2 (2019)	Red	GNR	T	1-T (2011)
Lupinus lepidus var. *lepidus*	prairie lupine	S1 (2019)	Red	G5TNR	E	1-E (2003)
Lupinus microcarpus var. *microcarpus*	dense-flowered lupine	S1 (2019)	Red	GNRTNR	E	1-E (2006)
Marah oregana	coast manroot	S1 (2019)	Red	G5 (1990)	E	

Appendix A-1 - Rare Plants Occurring in City of Colwood (CDC, October 2024)

Meconella oregana	white meconella	S1S2 (2019)	Red	G2 (2020)	E	1-E (2006)
Microseris bigelovii	coast microseris	S2 (2019)	Red	G4 (1995)	E	1-E (2007)
Montia chamissoi	Chamisso's montia	S3 (2022)	Blue	G5 (1985)		
Nuttallanthus texanus	Texas toadflax	S3 (2019)	Blue	G4G5 (2016)		
Orthocarpus bracteosus	rosy owl-clover	S1 (2019)	Red	G3? (1998)	E	1-E (2005)
Plagiobothrys figuratus var. *figuratus*	fragrant popcornflower	S1 (2019)	Red	G4T4 (1996)	E	1-E (2010)
Plagiobothrys tenellus	slender popcornflower	S1? (2019)	Red	G4G5 (1988)	T	1-T (2011)
Platanthera ephemerantha	white-lip rein orchid	S3 (2019)	Blue	G3? (2012)		
Psilocarphus elatior	tall woolly-heads	S2 (2019)	Red	G4 (2001)	E	1-E (2003)
Pyrola aphylla	leafless wintergreen	S3 (2019)	Blue	GNR		
Ranunculus alismifolius var. *alismifolius*	water-plantain buttercup	S1 (2019)	Red	G5T5 (1995)	E	1-E (2003)
Ranunculus californicus	California buttercup	S2 (2019)	Red	G5 (1987)	E	1-E (2011)
Ranunculus lobbii	Lobb's water-buttercup	SH (2019)	Red	G4 (1991)		
Sabulina pusilla	dwarf sandwort	S1 (2019)	Red	G3G5 (2004)	E	1-E (2005)
Sanicula arctopoides	bear's-foot sanicle	S2 (2019)	Red	G5 (1990)	T	1-T (2003)
Sanicula bipinnatifida	purple sanicle	S2 (2019)	Red	G5 (1990)	T	1-T (2003)
Sericocarpus rigidus	white-top aster	S3 (2019)	Blue	G3 (2024)	SC	1-SC (2003)
Sidalcea hendersonii	Henderson's checker-mallow	S3 (2021)	Blue	G3 (2016)		
Silene scouleri ssp. *scouleri*	coastal Scouler's catchfly	S1 (2019)	Red	G5T3T5 (2002)	E	1-E (2005)
Sisyrinchium idahoense var. *segetum*	Idaho blue-eyed-grass	S1 (2014)	Red	G5TNR		
Tonella tenella	small-flowered tonella	S3 (2019)	Blue	G5 (1990)	E	1-E (2005)
Trifolium depauperatum var. *depauperatum*	poverty clover	S3 (2019)	Blue	G5T5? (2000)		
Trifolium dichotomum	branched clover	S2 (2021)	Red	G4? (2002)		
Triphysaria versicolor ssp. *versicolor*	bearded owl-clover	S1 (2019)	Red	G5T5 (1997)	E	1-E (2003)
Triteleia howellii	Howell's triteleia	S1 (2005)	Red	G4G5T3T4Q (2020)	E	1-E (2005)
Uropappus lindleyi	Lindley's microseris	S1S2 (2019)	Red	G5 (1990)	E	1-E (2010)
Utricularia ochroleuca	ochroleucous bladderwort	S2S3 (2019)	Blue	G4G5 (2016)		
Viola howellii	Howell's violet	S1S2 (2019)	Red	G4 (1988)		
Viola praemorsa var. *praemorsa*	yellow montane violet	S1 (2019)	Red	G5T3T5 (2000)	E	1-E (2003)
Woodwardia fimbriata	giant chain fern	S3 (2019)	Blue	G5 (1994)		
Zeltnera muehlenbergii	Muhlenberg's centaury	S1 (2019)	Red	G5? (1996)	E	1-E (2010)

Appendix A-2 - Rare Ecological Communities Occurring in City of Colwood (CDC, October 2024)

Scientific Name	English Name	Biogeoclimatic Units	Provincial	BC List	Global	COSEWIC	SARA
Abies grandis / Mahonia nervosa	grand fir / dull Oregon-grape	CDFmm/04	S1 (2009)	Red	G1	N/A	N/A
Abies grandis / Tiarella trifoliata	grand fir / three-leaved foamflower	CDFmm/06	S1 (2013)	Red	G1	N/A	N/A
Alnus rubra / Carex obnupta [*Populus trichocarpa*]	red alder / slough sedge [black cottonwood]	CDFmm/14	S2 (2022)	Red	G1	N/A	N/A
Alnus rubra / Lysichiton americanus	red alder / skunk cabbage	CDFmm/Ws52	S2 (2010)	Red	GNR	N/A	N/A
Alnus rubra / Rubus spectabilis / Equisetum arvense	red alder / salmonberry / common horsetail	CDFmm/09; CDFmm/Fl51	S3 (2009)	Blue	GNR	N/A	N/A
Arbutus menziesii / Arctostaphylos	arbutus / hairy manzanita	CDFmm/00	S1S2 (2021)	Red	G2	N/A	N/A
Artemisia campestris - Festuca rubra / Racomitrium canescens	northern wormwood - red fescue / grey rock-moss	CDFmm/00	S1 (2008)	Red	G1	N/A	N/A
Bolboschoenus maritimus var. *paludosus*	seacoast bulrush Alkali Marsh	CDFmm/Wm11	S1 (2015)	Red	GNR	N/A	N/A
Carex lasiocarpa - Rhynchospora alba	slender sedge - white beak-rush	CDFmm/Wf53	S2 (2022)	Red	G2	N/A	N/A
Carex lyngbyei Herbaceous Vegetation	Lyngbye's sedge herbaceous vegetation	CDFmm/Em05	S1 (2022)	Red	GNR	N/A	N/A
Carex macrocephala Herbaceous Vegetation	large-headed sedge Herbaceous Vegetation	CDFmm/00	S1S2 (2008)	Red	G1G2	N/A	N/A
Deschampsia cespitosa ssp. *beringensis* -	tufted hairgrass - meadow barley	CDFmm/Ed01	S2 (2013)	Red	G3	N/A	N/A
Distichlis spicata - Sarcocornia pacifica	seashore saltgrass - Pacific swampfire	CDFmm/Em03	S1S2 (2018)	Red	GNR (2008)	N/A	N/A
Dulichium arundinaceum Herbaceous	three-way sedge	CDFmm/Wm51	S1 (2022)	Red	GNR	N/A	N/A
Eleocharis palustris Herbaceous Vegetation	common spike-rush Herbaceous Vegetation	CDFmm/Wm04	S3 (2023)	Blue	GNR	N/A	N/A
Festuca roemeri - Koeleria macrantha	Roemer's fescue - junegrass	CDFmm/00	S1 (2004)	Red	G1	N/A	N/A
Juncus arcticus - Plantago macrocarpa	arctic rush - Alaska plantain	CDFmm/Ed03	S1 (2007)	Red	GNR	N/A	N/A
Leymus mollis ssp. *mollis - Lathyrus*	dune wildrye - beach pea	CDFmm	S1S2 (2008)	Red	GNR	N/A	N/A
Menyanthes trifoliata - Carex lasiocarpa	buckbean - slender sedge	CDFmm/Wf06	S3 (2004)	Blue	G3	N/A	N/A
Myosurus minimus - Montia spp. - *Limnanthes macounii*	tiny mousetail - montias - Macoun's meadow-foam	CDFmm/00	S1 (2013)	Red	G2	N/A	N/A
Myrica gale / Carex sitchensis	sweet gale / Sitka sedge	CDFmm/Wf52	S3 (2022)	Blue	G3	N/A	N/A
Pinus contorta / Sphagnum spp. CDFmm	lodgepole pine / peat-mosses	CDFmm/10	S1 (2004)	Red	GNR	N/A	N/A
Populus tremuloides / Malus fusca / Carex obnupta	trembling aspen / Pacific crab apple / slough sedge	CDFmm/00	S1 (2018)	Red	G2 (2013)	N/A	N/A
Populus trichocarpa - Alnus rubra / Rubus	black cottonwood - red alder / salmonberry	CDFmm/08	S3 (2010)	Blue	GNR	N/A	N/A
Pseudotsuga menziesii - Arbutus menziesii	Douglas-fir - arbutus	CDFmm/02	S2 (2021)	Red	GNR	N/A	N/A

Appendix A-2 - Rare Ecological Communities Occurring in City of Colwood (CDC, October 2024)

Pseudotsuga menziesii / Mahonia nervosa	Douglas-fir / dull Oregon-grape	CDFmm/01	S1 (2018)	Red	G2	N/A	N/A
Pseudotsuga menziesii / Melica subulata	Douglas-fir / Alaska oniongrass	CDFmm/03	S1 (2018)	Red	G1	N/A	N/A
Quercus garryana - Arbutus menziesii	Garry oak - arbutus	CDFmm/00	S1 (2004)	Red	G1	N/A	N/A
Quercus garryana / Bromus carinatus	Garry oak / California brome	CDFmm/00	S1 (2022)	Red	G1	N/A	N/A
Quercus garryana / Holodiscus discolor	Garry oak / oceanspray	CDFmm/00	S1 (2004)	Red	G1	N/A	N/A
Rhododendron groenlandicum / Kalmia microphylla / Sphagnum spp.	Labrador-tea / western bog-laurel / peat-mosses	CDFmm/Wb50	S3 (2004)	Blue	G4	N/A	N/A
Ruppia maritima Herbaceous Vegetation	beaked ditch-grass Herbaceous Vegetation	CDFmm/Em01	S2 (2013)	Red	GNR	N/A	N/A
Salix sitchensis - Salix lasiandra var. *lasiandra / Lysichiton americanus*	Sitka willow - Pacific willow / skunk cabbage	CDFmm/Ws51	S3 (2022)	Blue	G2	N/A	N/A
Sarcocornia pacifica - Lysimachia maritima	American glasswort - sea-milkwort	CDFmm/Em02	S2 (2013)	Red	G3G4	N/A	N/A
Schoenoplectus acutus Deep Marsh	hard-stemmed bulrush Deep Marsh	CDFmm/Wm06	S3 (2020)	Blue	G5	N/A	N/A
Selaginella wallacei / Cladina spp.	Wallace's selaginella / reindeer lichens	CDFmm	S3 (2012)	Blue	GNR	N/A	N/A
Thuja plicata / Achlys triphylla	western redcedar / vanilla-leaf	CDFmm/12	S1 (2013)	Red	G1	N/A	N/A
Thuja plicata / Oemleria cerasiformis	Western Redcedar / Osoberry	CDFmm/13	S1 (2006)	Red	G1	N/A	N/A
Thuja plicata / Polystichum munitum - Lysichiton americanus	western redcedar / sword fern - skunk cabbage	CDFmm/11; CDFmm/Ws53	S3? (2012)	Blue	GNR	N/A	N/A
Thuja plicata - Pseudotsuga menziesii / Kindbergia oregana	western redcedar - Douglas-fir / Oregon beaked-moss	CDFmm/05	S1 (2013)	Red	GNR	N/A	N/A
Thuja plicata / Symphoricarpos albus	western redcedar / common snowberry	CDFmm/07	S1 (2013)	Red	GNR	N/A	N/A
Typha latifolia Marsh	common cattail Marsh	CDFmm/Wm05	S3 (2020)	Blue	G5	N/A	N/A

Appendix A-2 - Rare Animals Occurring in City of Colwood (CDC, October 2024)

Scientific Name	English Name	Provincial	BC List	Global	COSEWIC	SARA
Accipiter atricapillus laingi	American Goshawk, *laingi* subspecies	S2 (2010)	Red	G5T2 (2016)	T	1-T (2003)
Aechmophorus occidentalis	Western Grebe	S1S2B,S2N (2023)	Red	G5 (2016)	SC	1-SC (2017)
Allogona townsendiana	Oregon Forestsnail	S2 (2015)	Red	G3G4 (2010)	E	1-E (2005)
Anarta edwardsii	Edwards' Beach Moth	S1 (2020)	Red	GNR	E	1-E (2011)
Anaxyrus boreas	Western Toad	S4 (2022)	Yellow	G4 (2008)	SC	1-SC (2018)
Aneides vagrans	Wandering Salamander	S3 (2022)	Blue	G4 (2005)	SC	1-SC (2018)
Arctiostrotus perrieri	an earthworm	S3? (2019)	Blue	GNR		
Ardea herodias fannini	Great Blue Heron, *fannini* subspecies	S3B,S4N (2022)	Blue	G5T4 (2016)	SC	1-SC (2010)
Asio flammeus	Short-eared Owl	S3B,S1N (2022)	Blue	G5 (2016)	T	1-SC (2012)
Bombus occidentalis	Western Bumble Bee	S4 (2023)	Yellow	G3 (2018)	T	1-T (2023)
Botaurus lentiginosus	American Bittern	S3B,SNRN (2015)	Blue	G5 (2016)		
Brachyramphus marmoratus	Marbled Murrelet	S3 (2022)	Blue	G3 (2016)	T	1-T (2003)
Branta bernicla	Brant	S3M (2015)	Blue	G5 (2016)		
Branta canadensis occidentalis	Canada Goose, *occidentalis* subspecies	S2M (2009)	Red	G5T3 (2016)		
Buteo lagopus	Rough-legged Hawk	S3N (2015)	Blue	G5 (2016)	NAR	
Buteo swainsoni	Swainson's Hawk	S2B (2022)	Red	G5 (2016)		
Butorides virescens	Green Heron	S3S4B (2015)	Blue	G5 (2016)		
Calidris canutus	Red Knot	S3?M (2022)	Blue	G4 (2016)	T	1-T (2010)
Callophrys eryphon sheltonensis	Western Pine Elfin, *sheltonensis*	S2 (2023)	Red	G5TNR		
Callophrys johnsoni	Johnson's Hairstreak	S2? (2020)	Red	G3 (2017)	SC	
Callophrys mossii mossii	Moss' Elfin, *mossii* subspecies	S2 (2021)	Red	G4T4 (2001)		
Carychium occidentale	Western Thorn	S3 (2015)	Blue	G3G4 (2002)		
Cercyonis pegala incana	Common Wood-nymph, *incana* subspecies	S2? (2021)	Red	G5T4T5 (2003)		
Chordeiles minor	Common Nighthawk	S3S5B (2022)	Blue	G5 (2016)	SC	1-SC (2023)
Chrysemys picta pop. 1	Painted Turtle - Pacific Coast Population	S1S2 (2018)	Red	G5T2Q (2007)	T	1-T (2021)
Coccothraustes vespertinus	Evening Grosbeak	S5 (2022)	Yellow	G5 (2016)	SC	1-SC (2019)
Coenonympha california insulana	Common Ringlet, *insulana* subspecies	S1 (2021)	Red	G5T3T4 (1998)		
Contia tenuis	Common Sharp-tailed Snake	S1S2 (2018)	Red	G5 (2016)	E/T	1-E (2003)
Contopus cooperi	Olive-sided Flycatcher	S4B (2022)	Yellow	G4 (2024)	SC	1-SC (2023)
Copablepharon fuscum	Sand-verbena Moth	S1 (2020)	Red	G1G2 (2004)	E	1-E (2005)
Corynorhinus townsendii	Townsend's Big-eared Bat	S3 (2022)	Blue	G4 (2016)		

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Cypseloides niger	Black Swift	S2S4B (2022)	Blue	G4 (2016)	E	1-E (2019)
Danaus plexippus	Monarch	S1?B (2020)	Red	G4 (2015)	E	1-E (2023)
Erynnis propertius	Propertius Duskywing	S2 (2020)	Red	G5 (2020)		
Erythemis collocata	Western Pondhawk	S4 (2023)	Yellow	G5 (2016)		
Euchloe ausonides insulanus	Large Marble, *insulanus* subspecies	SX (2021)	Red	G4?T1 (2010)	XT	1-XT (2003)
Eumetopias jubatus	Steller Sea Lion	S3S4B,S4N (2022)	Blue	G3 (2016)	SC	1-SC (2005)
Euphydryas editha taylori	Edith's Checkerspot, *taylori* subspecies	S1 (2021)	Red	G4G5T1 (2008)	E	1-E (2003)
Euphyes vestris	Dun Skipper	S2S3 (2020)	Blue	G5 (2020)	T	1-T (2003)
Falco peregrinus pealei	Peregrine Falcon, *pealei* subspecies	S3S4 (2019)	Blue	G4T3 (2016)	SC	1-SC (2003)
Falco rusticolus	Gyrfalcon	S3S4B,SNRN (2015)	Blue	G5 (2016)	NAR	
Galba vancouverensis	Vancouver Fossaria	SH (2015)	Red	GHQ (2015)		
Glaucidium gnoma swarthi	Northern Pygmy-Owl, *swarthi* subspecies	S3S4 (2018)	Blue	G4G5T3T4Q (2019)		
Gnaphosa snohomish	Georgia Basin Bog Spider	S2 (2018)	Red	G2 (2011)	SC	1-SC (2018)
Hemphillia burringtoni	Keeled Jumping-slug	S2? (2015)	Red	G3 (2023)	SC	1-SC (2005)
Hemphillia dromedarius	Dromedary Jumping-slug	S2 (2024)	Red	G3G4 (2005)	T	1-T (2005)
Hesperia colorado oregonia	Western Branded Skipper, *oregonia*	S2 (2021)	Red	G5T2 (2016)	E	1-E (2023)
Hirundo rustica	Barn Swallow	S4B (2022)	Yellow	G5 (2016)	SC	1-T (2017)
Hydroprogne caspia	Caspian Tern	S2S4B (2024)	Blue	G5 (2016)	NAR	
Icaricia icarioides blackmorei	Boisduval's Blue, *blackmorei* subspecies	S3 (2021)	Blue	G5T3 (2006)		
Icaricia saepiolus insulanus	Greenish Blue, *insulanus* subspecies	SH (2021)	Red	G5TH (2018)	E	1-E (2003)
Larus californicus	California Gull	S1B,SNRN (2022)	Red	G5 (2016)		
Lasionycteris noctivagans	Silver-haired Bat	S4S5 (2022)	Yellow	G3G4 (2016)	E	
Lasiurus cinereus	Hoary Bat	S3S4 (2022)	Blue	G3G4 (2022)	E	
Limnodromus griseus	Short-billed Dowitcher	S1S2B,S2S3M (2023)	Red	G3 (2024)		
Megascops kennicottii kennicottii	Western Screech-Owl, *kennicottii*	S2S3 (2017)	Blue	G4G5T4 (2016)	T	1-T (2005)
Melanitta americana	Black Scoter	S3S4N (2015)	Blue	G5 (2016)		
Melanitta perspicillata	Surf Scoter	S3B,S4N (2015)	Blue	G5 (2016)		
Musculium partumeium	Swamp Fingernailclam	S2S4 (2015)	Blue	G5 (2015)		
Mustela richardsonii anguinae	Ermine, *anguinae* subspecies	S3 (2010)	Blue	G5T3 (2016)		
Myotis lucifugus	Little Brown Myotis	S3S4 (2022)	Blue	G3G4 (2024)	E	1-E (2014)
Myotis yumanensis	Yuma Myotis	S3 (2022)	Blue	G5 (2016)		
Nannopterum auritum	Double-crested Cormorant	S3S4 (2015)	Blue	G5 (2016)	NAR	
Omus audouini	Audouin's Night-stalking Tiger Beetle	S1 (2024)	Red	G5 (2008)	T	1-T (2018)

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Oncorhynchus clarkii clarkii	Cutthroat Trout, *clarkii* subspecies	S3S4 (2004)	Blue	G5T4 (1997)		
Ophiogomphus occidentis	Sinuous Snaketail	S3 (2023)	Blue	G5 (2015)		
Ostrea lurida	Olympia Oyster	S3 (2003)	Blue	GNR	SC	1-SC (2003)
Pachydiplax longipennis	Blue Dasher	S4S5 (2023)	Yellow	G5 (2015)		
Parnassius clodius claudianus	Clodius Parnassian, *claudianus* subspecies	S3S4 (2023)	Blue	G5TNR		
Parnassius smintheus olympiannus	Rocky Mountain Parnassian, *olympiannus*	S3 (2021)	Blue	G5T4 (2001)		
Patagioenas fasciata	Band-tailed Pigeon	S3S4 (2022)	Blue	G4 (2016)	SC	1-SC (2011)
Physella propinqua	Rocky Mountain Physa	S3S4 (2015)	Blue	G5Q (2015)		
Physella virginea	Sunset Physa	S3S5 (2015)	Blue	G5 (2015)		
Pluvialis dominica	American Golden-Plover	S3S4B (2015)	Blue	G5 (2016)		
Pooecetes gramineus affinis	Vesper Sparrow, *affinis* subspecies	S1B (2022)	Red	G5T2 (2022)	E	1-E (2007)
Pristiloma johnsoni	Broadwhorl Tightcoil	S3 (2015)	Blue	G3 (2013)		
Progne subis	Purple Martin	S3S4B (2022)	Blue	G5 (2016)		
Promenetus umbilicatellus	Umbilicate Sprite	S2S3 (2015)	Blue	G4 (2015)		
Prophysaon coeruleum	Blue-grey Taildropper	S2S3 (2024)	Blue	G3G4 (2010)	T	1-T (2019)
Rana aurora	Northern Red-legged Frog	S3 (2022)	Blue	G4 (2015)	SC	1-SC (2005)
Sorex navigator brooksi	Western Water Shrew, *brooksi* subspecies	S3 (2024)	Blue	G5T2T3 (2019)		
Speyeria zerene bremnerii	Zerene Fritillary, *bremnerii* subspecies	S2 (2023)	Red	G5T3T4 (1998)		
Sympetrum vicinum	Autumn Meadowhawk	S3S4 (2023)	Blue	G5 (2015)		
Tramea lacerata	Black Saddlebags	S3 (2023)	Blue	G5 (2016)		
Tringa incana	Wandering Tattler	S3B (2024)	Blue	G4G5 (2016)		
Tyto alba	Barn Owl	S3 (2022)	Blue	G5 (2016)	T	1-T (2018)
Uria aalge	Common Murre	S2B,S3S4N (2015)	Red	G5 (2016)		
Urile penicillatus	Brandt's Cormorant	S1B,S4N (2015)	Red	G5 (2016)		
Vertigo rowellii	Threaded Vertigo	S3S4 (2024)	Blue	G3G5 (2006)	SC	1-SC (2012)