



STAFF REPORT

Date: February 3, 2014 **File No.:** TH-6500-20

To: Thetis Island Local Trust Committee
For meeting of March 19, 2014

From: Aleksandra Brzozowski, Island Planner

CC: Courtney Simpson, Regional Planning Manager

Re: **Thetis Associated Islands Official Community Plan and Land Use Bylaw – Bylaw Provisions for Environmental Protection**

PURPOSE:

The Associated Islands Community Plan project was initiated by the Thetis Island Local Trust Committee (LTC) to create an official community plan and land use bylaw for Ruxton, Whaleboat, Pylades, Tree, Reid, Hudson, Scott, Dayman, Dunsmuir and Bute Islands.

The purpose of this staff report is to provide background information and options for protecting sensitive ecosystems and unique features on the Thetis Associated Islands based on sensitive ecosystem mapping (SEM) data, shoreline mapping, species at risk identification, and rare occurrence mapping available for the area.

BACKGROUND:

A preliminary report at the April 18, 2012 LTC meeting provided background information on the project. A Community Profile providing background environmental information was presented at the November 21, 2012 LTC meeting.

The first draft of the Associated Islands Official Community Plan was presented at the June 5, 2013 meeting, and the first draft of the AILUB was presented at the November 20, 2013 meeting. Subsequent revised drafts have been presented to the LTC. Draft versions of both documents contain preliminary provisions for environmental protection.

SITE CONTEXT:

Please refer to the Community Profile, September 2012 for site context information.

CURRENT PLANNING STATUS OF SUBJECT LANDS:

Please refer to the staff report presented at the November 21, 2012 LTC meeting for this information.

SENSITIVE ECOSYSTEMS ON ASSOCIATED ISLANDS:

Sensitive ecosystems are defined as those which are fragile and/or rare because of the diversity of species they support. These ecosystems rely on a delicate mix of species and conditions that are easily impacted by human activities. The islands in the Strait of Georgia (the Gulf Islands) hold a disproportional number of these sensitive ecosystems due to the high density of rare species residing in the region.

The Islands Trust sensitive ecosystem mapping maps the presence of up to three ecosystems in any given area (polygon). Percent coverage of each ecosystem class is available in any given polygon and the three layers of ecosystems are termed primary, secondary and tertiary ecosystems.

Of the seven sensitive ecosystem categories in the Sensitive Ecosystem Mapping (SEM), Woodland, Cliff, Wetland, and Herbaceous are present on the Thetis Associated Islands. As well, there are two instances of Mature Forest, which is categorized as a “rare ecosystem”, and a number of occurrences of the red-listed Dull Orgeon Grape / Coastal Douglas-fir ecological community. The following is a discussion of each of the sensitive ecosystems and the mature forest ecosystem on the Associated Islands.

Woodland ecosystems are dry open forest with 10-30% tree cover (conifer-dominated or mixed conifer-broadleaf), often with shallow soil and bedrock outcrops. They provide habitat for rich assemblage of plants, insects, reptiles and birds. They are rare, highly fragmented, and vulnerable to rural development.

In general, activities associated with land development are primarily responsible for the degradation and habitat loss of Woodland ecosystems. Direct impacts such as tree or understorey removal or damage are attributed to construction and vegetation management. Introduction of invasive species from gardens and landscape fragmentation also reduce Woodland diversity.

Woodland ecosystems are present as primary ecosystems on Hudson Island, Dayman Island, Whaleboat Island, the islet off the northeast coast of Pylades Island, and the islet south of Reid Island. Secondary woodland ecosystems are present along the western half of Ruxton Island, the west side of Reid Island, and the centre of Pylades Island.

Cliff ecosystems are very steep slope, often exposed bedrock, and may include steep-sided sand bluffs. Ledges and fissures on cliffs provide nesting sites for birds, roosting sites for bats, and overwintering shelters for snakes.

Cliff ecosystems are characterized by soils which accumulate very slowly and only in isolated micro-sites. This factor, combined with the characteristically thin organic layer that protects the soil from erosion and disturbance, makes these areas extremely susceptible to any type of use and development. The largest direct impact for Cliff ecosystems is by humans seeking the highly desirable property for recreational and residential purposes. Human activity in this ecosystem can be quite detrimental.

There is one cliff ecosystem in the Associated Islands area, on the southwest edge of Ruxton Island. The majority of this ecosystem falls within a CVRD nature park; however, a handful of properties both north and south of the nature reserve are private properties.

Wetland ecosystems are areas saturated or inundated with water for long enough periods of time to develop specialized vegetation (may result from fluctuating water

tables, tidal influences or poor drainage conditions). They exhibit rare species, high biodiversity, fragility, specialized habitat and functions.

Direct impacts such as draining, filling or dyking, are responsible for the loss of or disturbance of vegetation or soils in a wetland. Indirect impacts such as changes to hydrology from development, and agriculture and forestry activities have the most significant effects on wetlands. Additional indirect impacts include increased disturbance from recreational access and the introduction of invasive species.

One wetland in the centre of Reid Island straddles two properties, and the other falls on one property. Ruxton Island supports a wetland ecosystem in the centre of the island. This wetland is for the most part designated as a nature park under the CVRD; however, the wetland ecosystem does extend beyond those boundaries into the surrounding properties.

Herbaceous ecosystems are non-forested areas (less than 10% tree cover) with shallow soils. They include bedrock outcrops, large openings within forest, spits, dunes and shorelines vegetated with grasses and herbs.

Herbaceous ecosystems are characterized by thin soils which are easily disturbed. Herbaceous plants can be easily trampled or dislodged onto bare rock where they cannot re-establish. Thus they are highly vulnerable to a range of human disturbance factors including residential development and various recreational uses.

Primary Herbaceous ecosystems exist on the Rose Islets and secondary herbaceous ecosystems make up Scott, Bute, (north) Dunsmuir and much of Reid Island.

Mature forest ecosystems are usually conifer-dominated, occasionally deciduous, dry to moist forest, and 80-250 years in age. These are future older forests. They provide connections between natural areas and act as buffers minimizing disturbance to sensitive ecosystems. Note that some woodland forests are also mature forests, but are mapped in the Islands Trust Sensitive Ecosystem Mapping as Woodlands because the latter class is both rare and sensitive.

The southern Dunsmuir (Ovens) Island is entirely covered by a mature forest ecosystem, and a stand of mature forest exists on two properties on northwest Reid Island.

SPECIES AND ECOLOGICAL COMMUNITIES AT RISK:

Certain species and ecological communities have been designated by the Province as at risk of non-reversible damage or extinction. In some instances, these species have also been listed as Endangered (a species facing imminent extirpation or extinction) under the federal *Species at Risk Act*. The following are Species and Communities at Risk in the Associated Islands area:

Lindley's Microseris (*Microseris lindleyi*) is a provincially red-listed plant species found on Ruxton Island that is also classified as Endangered under the federal *Species at Risk Act*. Ruxton Island has one of only four known populations in British Columbia, the others being found on other southern Gulf Islands. The Ruxton population is on the south-west side of the island, associated with the cliff ecosystem. The primary threats to Lindley's Microseris are housing development and invasive species.

Erect pygmyweed (*Crassula connate*) is a provincially red-listed plant species found on Tree Island.

Double-crested cormorants (*Phalacrocorax auritus*) are a provincially blue-listed species and have a nesting site on the Rose Islets, north-west of Reid Island.

Douglas-fir / Dull Oregon-grape Ecological Community: The Douglas-fir/dull Oregon-grape is a provincially red-listed plant community. It is also considered globally imperilled (at high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.). Very little of this kind of coastal old-growth remains in the world, and most of it exists in fragments under 40 hectares.

Mapping indicates that most of Ruxton Island and all of Pylades Island show occurrences of the complex Coastal Douglas-fir / Dull Oregon-grape ecosystem with a fair rating in terms of ecological integrity. Past subdivision on Ruxton Island into very small lots makes for difficult protection strategies, but larger lots still exist on Pylades that may warrant protection efforts.

EELGRASS MAPPING AND MARINE ECOSYSTEMS:

Shoreline ecosystems have become increasingly fragile ones as more people live, work and play along coasts; meanwhile, continued research and scientific understanding of nearshore ecosystems emphasize their importance to environmental balance. Eelgrass is a critical nearshore habitat for birds, mammals, fish and invertebrates; nearshore environments with eelgrass beds are home to more than 80% of commercially important fish and shellfish species. Eelgrass beds also serve as carbon sinks and shoreline stabilizers. Globally, eelgrass is used as an indicator of water quality.

In July 2012, eelgrass mapping was conducted for Thetis Island and the Associated Islands (a final report on Eelgrass Mapping was presented to the LTC at their February 5, 2014 meeting). A significant presence of eelgrass was found along the Associated Islands, ranging from 0 – 50%. The study findings noted that areas where boats are moored and areas with modified shorelines show greater impact on eelgrass presence. One potential restoration site for eelgrass habitat was noted on the northeast side of Dunsmuir Island, as it is composed of clean sandy substrate in a protected site.

In the final report on eelgrass mapping, a series of recommendations were made for Local Trust Committees to contribute to ongoing conservation work. A number of recommendations involved education about the importance of eelgrass beds, and a number of recommendations suggested land use policy and regulation. These included limiting dock development, encouraging a focus of moorage areas to areas that are too deep for eelgrass, and maintaining coastal riparian zones to be as undisturbed as possible.

As water access only properties, the shoreline ecosystems along the Associated Islands are especially vulnerable to cumulative impact. Protecting the nearshore should be a top priority looking forward.

AREAS FOR TARGETED ENVIRONMENTAL PROTECTION:

Reviewing all the above information, it is clear there are are significant number of environmentally sensitive features in the Associated Islands. Certain ecosystems, such as herbaceous ecosystems which are both prevalent in the area and very easily impacted, are best protected by providing information and fostering general stewardship throughout the area. Other features, such as the cormorant nesting site on the Rose Islets, are already protected as a park, nature reserve, or ecological reserve and do not require additional land use policies protecting them.

However, the following can be prioritized as particualry vulnerable to residential and recreational use, and requiring particular attention when establishing bylaw provisions for the area:

1. Properties in the Cliff ecosystem on Ruxton Island that are not in the CVRD nature park (most especially as these cliffs host Lindley's Microseries)
2. Wetlands and their surrounding areas on Ruxton and Reid Islands
3. Hudson Island and Dayman Island as primary woodland ecosystems and Scott Island as a primary herbaceous ecosystem
4. The rare Mature Forest ecosystems on Ovens (south Dunsmuir) Island and in the northwest Reid Island
5. Douglas-fir/dull Oregon-grape ecosystem on Pylades Island
6. Properties in secondary woodland ecosystems (Pylades, Ruxton, Reid)
7. Protection of shorelines where there is mapped eelgrass presence
8. Shoreline ecosystem protection generally in the Associated Islands area

PROTECTING SENSITIVE ECOSYSTEMS IN THE OCP AND LUB:

The majority of policy directives set out in the *Islands Trust Policy Statement* require Local Trust Committees to address in their bylaws the protection of ecosystems in their Plan areas. To date, a number of policies have already been drafted as part of the Associated Islands Official Community Plan to address the protection of sensitive ecosystems. These include:

Terrestrial Policies:

3.2.9 Applications for additional higher density for new development may only be considered subject to the following:

- *the application would result in the preservation and protection of a sensitive ecosystem, significant natural feature, or a heritage resource;*
- *the additional density takes the form of residential lots or dwellings;*
- *the additional development would be sited away from sensitive ecosystems, would minimize visual impacts, would mitigate potential natural hazards, and would address the sustainability of new development;*
- *would not adversely impact groundwater resources; and,*
- *would not adversely impact adjacent properties.*

6.2.1 *The Local Trust Committee should support the preservation of ecologically sensitive areas through land use regulation, conservation covenants, park land dedication, conveyance to conservation agencies, or, where feasible, participation in the Natural Areas Protection Tax Exemption Program (NAPTEP).*

6.2.4 *Local Trust Committee bylaw provisions may include in this designation lands that are protected by conservation covenant, park dedication, by donation to a conservancy organization or have been protected by other means.*

6.2.6 *Land provided as a conservation amenity in exchange for an increase in density as part of an amenity rezoning application may be included in this designation.*

9.2.1 *The Local Trust Committee should support and undertake initiatives to protect environmentally sensitive areas and significant natural sites, features and landforms in the Plan Area.*

9.2.2 *The Local Trust Committee should support and undertake initiatives to plan, establish, and maintain a network of protected areas that preserves the representative ecosystems of the area and maintains its ecological integrity.*

9.2.3 *The Local Trust Committee should protect environmentally sensitive areas, significant natural sites, features, views, scenic areas and landforms in the planning area through:*

- a) *zoning regulations that encourage the siting of new development away from sensitive areas;*
- b) *the implementation of development permit areas where accurate mapping identifying sensitive ecosystems at an appropriate scale is available and where the administration of development permit areas is feasible;*
- c) *acquisition of land by the Trust Fund Board, other conservancies, the Cowichan Valley Regional District, and government agencies;*
- d) *encouragement of voluntary stewardship including the use of tools such as conservation covenants and where feasible, participation in the Natural Areas Protection Tax Exemption Program (NAPTEP);*
- e) *park dedication at the time of subdivision; and*
- f) *the use of incentives such as lot clustering and amenity zoning.*

Marine Policies:

5.2.1 *The Local Trust Committee should identify and protect ecologically sensitive marine areas.*

5.2.7 *The Local Trust Committee should use bylaw provisions to locate docks in locations with minimum environmental impact, and should encourage dock design that is sensitive to marine ecosystems and habitat.*

5.2.10 *The Local Trust Committee should, through zoning, the use of setbacks, and the use of development permit areas:*

- a) *protect the integrity of the foreshore, shoreline, and natural coastal and intertidal processes;*
- b) *discourage uses that disrupt natural features and processes;*
- c) *allow for natural erosion and accretion processes, without endangering structures;*
- d) *encourage owners of shoreline properties to retain, wherever possible, natural vegetation and natural features on areas adjacent to the foreshore; and*
- e) *discourage filling, deposit, excavation, or removal of foreshore and seabed materials, except for maintenance of navigational channels and existing facilities.*

5.2.11 *The Local Trust Committee should encourage and facilitate education around shoreline stewardship.*

5.2.12 *The Local Trust Committee should only give consideration to permitting structural modification of the shoreline, such as seawalls, where it can be demonstrated to be necessary to support or protect a permitted or existing use or structure. Preference should be given to shoreline structures that have a lesser impact or enhance ecological functions, including vegetation enhancement, drainage control, beach enhancement, anchor trees, and gravel placement. Shoreline stabilization should not interrupt natural processes solely to reduce erosion of undeveloped land. Vegetation which helps stabilise banks, reduce erosion and provide habitat should be retained or enhanced.*

In the draft of the Associated Islands Land Use Bylaw, regulations have been drafted for the following topics for the purposes of environmental protection:

- Conservation areas permitted in all zones
- 10 metre setbacks from the sea for buildings and most structures
- 30 metre setbacks from watercourses for buildings and most structures
- Zoning for marine protection, parks, private conservation
- Conditions of use for structures in water zones

OPTIONS FOR PROTECTION:

Looking at the above eight natural areas of particular vulnerability, a number of land use planning tools can be used to improve protection. Attachment 1 breaks down the possible planning tools available for protection of these particular areas, the pros and cons of the tool for the situation, whether the policy or regulation has already been inserted into the bylaws, whether certain gaps exist, and any recommendations from staff.

STAFF COMMENTS:

At present, many of the sensitive ecosystems in the Associated Islands plan area have been well-maintained with a relatively low level of disturbance. This is a credit to the conscientious stewardship to date by current and past landowners; however, future owners may not take the same attitude or have the same level of knowledge as current landowners. In the meantime, these ecosystems become rarer and sparser in British Columbia and the world. Balancing the very real and mandated need to protect these vulnerable and rare natural features while at the same time respecting the current residential and recreational use of these islands is made more difficult when it is hard to predict future actions of property owners.

Staff requests that the LTC review the protection tool matrix to confirm their comfort with the level of protection currently included in the two drafted bylaws, and whether the LTC would wish to explore any of the additional measures noted. Below are some notes about the additional tools suggested in the attached protection tool matrix.

Clarity on permitted activities and structures on Cliff ecosystem properties

While it was understandable that cliff property owners wish to more easily access their properties at the top of the cliff, pulley systems in cliff ecosystems can be quite damaging to the

soils and vegetation along and at the top of the cliffs. The at-risk Lindley's Microseries is predominantly found in this area on Ruxton Island, making it all the more essential to protect the soils and vegetation on Ruxton Island's cliffs.

The Ruxton Zoning Bylaw adopted in 1983 did not allow for any structures in the water zone nor for structures other than fences or waterfront stairways 10 metres upland of the natural boundary of the sea; in effect, pulley systems are already not allowed on Ruxton Island. Pulleys placed before the Ruxton Zoning Bylaw was adopted are legally non-conforming; in those instances, it should be communicated to property owners that continued use of pulleys will have detrimental impact on the sensitive ecosystem.

Clarifying in the new Associated Islands Land Use Bylaw that pulley systems to hoist supplies up the cliff are not considered a permitted apparatus in the Ruxton water zone would be advisable to avoid any misinterpretation of zoning regulations.

Wetland Buffers:

When looking to protect the three wetlands and their adjacent lands, setbacks can serve well. Currently, there is a 30 metre building and structures setback from watercourses and water bodies. However, there are a number of exceptions allowing a variety of structures in the setback. Creating a no-disturbance buffer around the wetlands is advised as a best practice. No-disturb buffers are set at 30–150 metres depending on the size of the wetland and the vulnerability of the surrounding lands. Another option is a ratio of 3:1 for smaller wetlands, which may be applicable for the south wetland on Reid Island. However, this 3:1 ratio would result in an approximately 30 metre buffer.

Staff advises to start with a 30 metre no-disturbance setback from the high water mark of the three wetlands in the Plan area. It would be advisable to work with landowners to complete more refined mapping about the extent and nature of the wetlands for more accurate protection measures in the future.

Development Permit Areas:

When addressing development in sensitive ecosystems, there many benefits to Development Permit Areas (DPAs). Regulating by way of a Sensitive Ecosystems Development Permit Area (or possibly Development Permit Areas separated out for specific ecosystems) could serve as clear parameters and guidelines for new property owners. Tree removal and vegetative disturbance is the primary concern for four of the eight especially vulnerable areas in the Plan area; development permit areas and guidelines are the only method to regulate such concerns through land use planning.

DPAs do allow for flexibility and are only triggered if land is to be disturbed; i.e. if an owner wishes to leave the land as it currently is, there is no regulation placed upon them. However, if the owner wishes to further develop or modify land that is in a sensitive ecosystem, then the DPA becomes another step in their process. Development permit guidelines are often laid out as checklists that can be made accessible to property owners for clarity and transparency before the process begins.

The mapping that designates a Sensitive Ecosystem DPA should be of a standard that allows the public, landowners, and planning staff to be able to reasonably ascertain whether a particular location is in a sensitive ecosystem or not, so some areas will need further mapping by the Local Trust Committee if it wished to pursue development permit areas. This would take

considerable resources and may require prioritizing. This mapping work should be conducted with the cooperation of the landowners involved.

A drawback to note with DPAs is that it can be difficult to effectively administer minor work in a DPA that does not require a building permit and is often not visible from off the property. Many of the islands identified with sensitive ecosystems were previously unzoned areas, and these property owners may be particularly reticent to embrace what is a precautionary regulation.

A shoreline ecosystem DPA for general shoreline protection would not require further mapping. A shoreline DPA would allow for better guidelines specific to shoreline types than the “Conditions of Use” in the Land Use Bylaw can allow. Forage fish mapping would provide additional information on marine habitats in the Plan area and is recommended.

Targeted Education for Property Owners with Sensitive Lands:

Encouraging environmental stewardship and private conservation is a key part of the draft OCP. The LTC and planning staff should continually seize opportunities to engage community and conservancy groups in stewardship projects and community-based mapping of sensitive habitats on their islands, such as the projects that have occurred in the Trust Area on forage fish mapping and community-based conservation mapping.

Some of the Associated Islands have only one to three property owners and these owners could be contacted directly with information about how to protect in perpetuity the unique features on their land. The Islands Trust Fund (ITF) has a number of communications materials on the subject of perpetual conservation options. The ITF notes that recent policy prioritizes a 2 hectare minimum before entering into covenant agreements.

It could well be that exploration of long-term conservation measures will lead to the conclusion that implementing a development permit area to protect the sensitive ecosystem is the most pragmatic and cost-effective approach to protect the ecosystem in perpetuity. Monitoring conservation covenants for smaller areas on remote-access islands is a costly endeavour for land conservancies, and with development permit areas, biologist reports would only be required should the owner wish to alter the land rather than the up-front baseline reports required for covenants.

RECOMMENDATIONS:

Bylaw provisions drafted to date in the OCP and the LUB meet the directives set out in the *Islands Trust Policy Statement*; however, more could be done to proactively protect sensitive ecosystems in the future. Staff recommends that the following additional measures be considered to further protect sensitive ecosystems in the Plan area.

1. That pulleys, etc. be clarified as non-permitted structures in the W3 zone.
2. That no-disturbance wetland buffers of 30 metres be placed into Section 3.3 of the Land Use Bylaw.
3. That environmental education and engagement efforts be placed on the Projects List for future work.
4. That the LTC work with owners on Pylades, Dayman, Scott, and Hudson Islands to gather more refined mapping data of the sensitive ecosystems and ecosystems at risk on their islands.
5. That development permit areas be considered for the Cliff ecosystem on Ruxton Island, as well as the Woodland ecosystems and the shorelines in the Plan area.

Prepared and Submitted by:

Aleksandra Brzozowski

Aleksandra Brzozowski
Island Planner

February 24, 2014

Date

Concurred in by:

Courtney Simpson

Courtney Simpson
Regional Planning Manager

February 24, 2014

Date

Attachments:

1. Thetis Associated Islands Plan – Sensitive Ecosystem Protection Tools matrix



THETIS ASSOCIATED ISLANDS COMMUNITY PLAN SENSITIVE ECOSYSTEMS PROTECTION OPTIONS FOR THE OCP AND LUB

NATURAL FEATURE	Located On	PROTECTION TOOL	ALREADY IN BYLAW?	PROS	CONS OR GAPS	RECOMMENDATIONS
Cliff Ecosystem	Ruxton	10m building setbacks; no structures in setback	Yes [LUB 3.3.3 (a)] [LUB 5.1.4 (b)]	Clear instruction to new owners; consistent with previous Ruxton bylaw	Recent revision allows for structures in W3 zone for unloading goods; this could be construed to allow pulley systems up the cliff, which is very detrimental to the soils.	Add “pulleys” to list of unauthorized structures in the W3 zone [in LUB 5.10.2]
Cliff Ecosystem	Ruxton	Land Use Designation as Park	Yes [OCP Sched C]	Clear indication of use	None	N/A
Cliff Ecosystem	Ruxton	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Cliff Ecosystem	Ruxton	Development Permit Area	No	Would provide guidelines for tree and vegetation removal that mitigates soil damage and maintains talus and rock debris, allows for nuanced options for development in cliff areas; able to exempt removal of invasive plants; ability to determine a proposed work does not occur within cliff ecosystem	Cost to property owner if complex biologist report is required; may be difficult to enforce or monitor; public perception of DPAs is currently negative; if mapped further first, would need financial resources and require cooperation with property owners.	Consider the implementation of DPA into LUB
Wetland	Ruxton	30m Setback from water body	Yes [LUB 3.3 (3)(b)]	Clear instruction	Currently allows for fences, sheds, platforms, stairs in setback	Consider creating no-disturbance buffer area around wetland at a ratio of 3:1 in size. (As recommended by Canadian Wildlife Service)
Wetland	Ruxton	Land Use Designation as Park	Yes [OCP Sched C] [OCP 6.3.3]	Clear indication of use	None	N/A
Wetland	Ruxton	Development Permit Area for Wetland and surrounding land	No	Would allow for more nuanced options for land adjacent to the wetland than a no-disturbance buffer; would allow for exemptions such as maintaining roads and trails; ability to determine a proposed work does not occur within wetland ecosystem;	Cost to property owner if complex biologist report is required; public perception of DPAs is currently negative; if mapped further first, would need financial resources and require cooperation with property owners.	Consider the implementation of DPA into LUB
Wetland	Ruxton	Conditions of use on trails and boardwalks in P zone	No	Could fill a gap until CVRD puts in management plan	Could create confusion if conditions differ from CVRD management plan once it's in place	Liaise with CVRD parks on this matter during agency referrals
Wetland	Reid	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land for wetland and surrounding area	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Wetland	Reid	30m setback from water body	Yes [LUB 3.3 (3)(b)]	Clear instruction	Does allow for fences, sheds, platforms, stairs in setback Reid's wetlands are not readily defined, best to conduct site analysis	Consider creating no-disturbance buffer area around wetland at a ratio of 3:1 in size. (As recommended for small wetlands by Canadian Wildlife Service)
Primary Woodland ecosystem	Dayman	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”



THETIS ASSOCIATED ISLANDS COMMUNITY PLAN SENSITIVE ECOSYSTEMS PROTECTION OPTIONS FOR THE OCP AND LUB

NATURAL FEATURE	Located On	PROTECTION TOOL	ALREADY IN BYLAW?	PROS	CONS OR GAPS	RECOMMENDATIONS
Primary Woodland ecosystem	Dayman	Conservation incentives and considerations at time of application	Yes [OCP 6.2.1] [OCP 9.2.1] [OCP 9.2.3] [OCP 9.2.4]	Incentivizes environmental conservation on land with development potential	No ability to address land alteration other than new development; strictly optional	Consider DPA tool to influence removal of sensitive trees and woodland vegetation
Primary Woodland ecosystem	Dayman	Development Permit Area for woodland ecosystem	No	Would provide guidelines and parameters around tree removal; guidelines could be written in a discretionary manner that allows for site-specific analysis	Public perception of DPAs is currently negative	Consider DPA tool to influence removal of sensitive trees and woodland vegetation
Primary Woodland ecosystem	Hudson	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Primary Woodland ecosystem	Hudson	Development Permit Area for woodland ecosystem	No	Exemptions could be written to reflect the Hudson building scheme; would provide guidelines and parameters around tree removal; guidelines could be written in a discretionary manner that allows for site-specific analysis	Public perception of DPAs is currently negative; if mapped further first, would need financial resources and require cooperation with property owners.	Consider DPA tool to influence removal of sensitive trees and woodland vegetation
Primary Herbaceous ecosystem	Scott	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Primary Herbaceous Ecosystem	Scott	Development Permit Area for herbaceous ecosystem	No	Would address disturbance beyond residential development; conditions of a Development Permit could include restoration; could allow site-specific limitations to walkways, stairs, and other allowed structures	Difficult to monitor; Public perception of DPAs is currently negative	
Mature Forest Ecosystem	Dunsmuir (Ovens)	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Mature Forest Ecosystem	Dunsmuir (Ovens)	Conservation incentives and considerations at time of application	Yes [OCP 6.2.1] [OCP 9.2.1] [OCP 9.2.3] [OCP 9.2.4]	Incentivizes environmental conservation on land with development potential	No ability to address land alteration other than new development; strictly optional	
Mature Forest Ecosystem	Reid	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Douglas-fir/dull Oregon-grape	Pylades	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Douglas-fir/dull Oregon-grape	Pylades	Conservation incentives and considerations at time of application	Yes [OCP 6.2.1] [OCP 9.2.1] [OCP 9.2.3] [OCP 9.2.4]	Incentivizes environmental conservation on land with development potential	No ability to address land alteration other than new development; strictly optional	



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NATURAL FEATURE	Located On	PROTECTION TOOL	ALREADY IN BYLAW?	PROS	CONS OR GAPS	RECOMMENDATIONS
Douglas-fir/dull Oregon-grape	Pylades	Development Permit Area for ecosystems at risk	No	Would provide guidelines and parameters around tree removal; guidelines could be written in a discretionary manner that allows for site-specific analysis	Further mapping would definitely be required as data is coarse; Public perception of DPAs is currently negative	
Secondary Woodland ecosystem	Pylades	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Secondary Woodland ecosystem	Pylades	Conservation incentives and considerations at time of application	Yes [OCP 6.2.1] [OCP 9.2.1] [OCP 9.2.3] [OCP 9.2.4]	Incentivizes environmental conservation on land with development potential	No ability to address land alteration other than new development; strictly optional	
Secondary Woodland ecosystem	Pylades	Development Permit Area for woodland ecosystem	No	Would provide guidelines and parameters around tree removal; guidelines could be written in a discretionary manner that allows for site-specific analysis	Public perception of DPAs is currently negative	Consider DPA tool to influence removal of sensitive trees and woodland vegetation
Secondary Woodland ecosystem	Ruxton	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Secondary Woodland ecosystem	Ruxton	Development Permit Area for woodland ecosystem	No	Would provide guidelines and parameters around tree removal; guidelines could be written in a discretionary manner that allows for site-specific analysis	Public perception of DPAs is currently negative	Consider DPA tool to influence removal of sensitive trees and woodland vegetation
Secondary Woodland ecosystem	Reid	Option to create conservation area or voluntarily steward on residential land	Yes [OCP 6.2.1] [OCP 9.2.3(d)] [LUB 3.1.1]	Aimed to encourage voluntary conservation on private land	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Secondary Woodland ecosystem	Reid	Development Permit Area for woodland ecosystem	No	Would provide guidelines and parameters around tree removal; guidelines could be written in a discretionary manner that allows for site-specific analysis	Difficult to monitor; Public perception of DPAs is currently negative	Consider DPA tool to influence removal of sensitive trees and woodland vegetation
Shorelines with eelgrass presence	All	Locate docks with minimal impact with sensitive design	Yes [OCP 5.2.7]	Provides direction for future	Policy is not directly enforceable	
Shorelines with eelgrass presence	All	Shoreline Stewardship	Yes [OCP 5.2.11]	Aimed to encourage voluntary conservation	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Shorelines with eelgrass presence	All	Encourage community docks	Yes [OCP 5.2.5] [OCP 5.2.6] [LUB 5.8.1c] [LUB 5.7.1c]	Provides direction for future	none	n/a
Shorelines with eelgrass presence	All	DPA for Shoreline ecosystem	No	Conditions of a Development Permit could include restoration; could allow site-specific limitations to dock development; could address both nearshore and upland in setback; provides guidelines rather than prohibitions	Public perception of DPAs is currently negative	Consider DPA tool to protect shoreline ecosystem
Shorelines in general	All	Provision to protect sensitive marine areas as marine protection zone	Yes [OCP 5.2.1] [LUB	Protects waters surrounding islet ecological reserves	none	n/a



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THETIS ASSOCIATED ISLANDS COMMUNITY PLAN SENSITIVE ECOSYSTEMS PROTECTION OPTIONS FOR THE OCP AND LUB

NATURAL FEATURE	Located On	PROTECTION TOOL	ALREADY IN BYLAW?	PROS	CONS OR GAPS	RECOMMENDATIONS
Shorelines in general	All	Shoreline Stewardship	Yes [OCP 5.2.11]	Aimed to encourage voluntary conservation	Contingent on buy-in and effort and possibly expense by property owners	Add to LTC Projects list “targeted environmental education and engagement for sensitive ecosystem property owners”
Shorelines in general	All	Conditions on consideration of shoreline modification	Yes [OCP 5.2.10]	Provides direction and demonstrates will of LTC	Policy is not directly enforceable	n/a
Shorelines in general	All	DPA for Shoreline ecosystem	No	Could allow for specificity based on shoreline type; could address both nearshore and upland in setback; provides guidelines rather than prohibitions	Public perception of DPAs is currently negative	Consider DPA tool to protect shoreline ecosystem