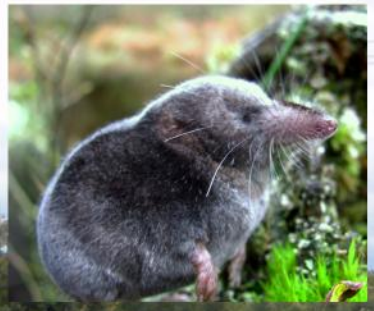
Species at Risk Backgrounder and Policy Review

District of Squamish



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South Coast Conservation Program www.sccp.ca

The SCCP is a multi-partner conservation program helping facilitate projects and activities to protect and restore species and ecological communities at risk on the South Coast of B.C.

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Cover photos: Pamela Zevit, Denis Knopp, Paul berlinguette, and Angus Wilson. From left to right: Pacific Water Shrew, Red-legged Frog, Marbled Murrelets.

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1. Introduction


Chris Lee

1. Introduction

The South Coast Conservation Program respectfully submits this Species and Ecosystem at Risk (SEAR) policy review to the District of Squamish.

The SCCP is a multi-partner conservation program facilitating the restoration and protection of endangered species and ecological communities on BC's South Coast. The SCCP, a non-profit organization, was established in 2005 to fill coordination gaps between various levels of government, conservation groups, land use interests and local communities to conserve species and ecological communities at risk. The SCCP plays a vital role in assisting various stakeholders in navigating the complexities around species at risk. The SCCP used its expertise in species and ecosystems at risk ecology, policy, legislation and management, and expertise in environmental policy and planning evaluation in the preparation of this report. The SCCP also drew on the knowledge of provincial and federal SEAR experts to ensure accuracy of information.

This review is designed to provide an independent analysis of the content, approach, and efficacy of the District of Sqamish's (DOS) plans and policies in protecting Species and Ecosystems at Risk. The report also provides recommendations for the improved integration of SEAR into the District's everyday operations and decision-making and provides guidance to help the DOS work toward compliance with relevant legislation.

The report represents a starting point for the development of a comprehensive strategy for addressing species and ecosystem at risk management and protection. Additional discussion with District of Squamish staff, provincial and federal species at risk experts, consultation with affected stakeholders and additional inputs of technical expertise and resources will be required to fully address the recommendations put forward in this report. The South Coast Conservation Program would be happy to meet with staff and other District representatives to discuss this review and the recommendations put forward.

1.1 Purpose and Rationale

The District of Squamish is a progressive community, rich in environmental values and biodiversity resources, including many species and ecosystems at risk (SEAR). Like most

communities in the South Coast of British Columbia, the District is experiencing increased development and urbanization. For local government staff, who carry much of the burden for local land use decisions, it can be a struggle to find a balance between these often competing interests. While these interests seem to be at odds, the District of Squamish and other municipal governments are well positioned to protect and benefit from the protection of species and ecosystems at risk. Creative policy and planning measures can be used to enhance both biodiversity protection and land use potential in Squamish. The recommendations put forth in this report will assist the District in working towards compliance with relevant legislation, preserving the environmental values it is known for and relies on, and in doing so promote community health and wellbeing.

1.2 Species and Ecosystems at Risk: Background

The South Coast Region of BC[1] supports some of the highest biodiversity in Canada. It is also one of the most populated areas, with over 2 million people currently calling it home. Over 100 provincially listed ecosystems and over 260 provincially and/or federally listed species of conservation concern also share this region. Three species are already considered extirpated from the South Coast. Some species and ecosystems are found nowhere else in Canada, and some nowhere else in the world.

Species at risk is a term used to describe any wildlife species (plant, animal, or other organism) that is at risk of extinction in Canada. In the United States the term used is endangered species. Species are often 'at risk' as a result of human activities that pose a threat to their survival. Ecosystems at Risk is a term used in B.C. to describe the list of ecological communities assessed as endangered, threatened or vulnerable with respect to continued existence in B.C. by the BC Conservation Data Centre (CDC). Ecological Communities (formerly known as plant communities) include sensitive ecosystems[2] and ecosystems of the provincial Biogeoclimatic Ecosystem Classification[3]

For the purpose of this report, Species and Ecosystems at risk are defined as all species at risk listed under Schedule 1 of *the Species at Risk Act (S.C. 2002, c.29)*[4] as well as BC Conservation Data Centre (CDC) Red and Blue listed species and ecosystems[5].

The SCCP guidebook "Local Government Tools Supporting Species and Ecosystems at Risk: A Resource Guide for the South Coast" provides more detailed information about species at risk in this region and an overview of factors influencing local government in SEAR protection[6]

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1 [1] While 69 species have been assessed as endangered or threatened by COSEWIC, in the South Coast only 59 have been SARA listed and only 20 have federal Recovery Strategies detailing Critical Habitat and Recovery Actions. No ecosystems at risk have been designated by federal legislation. Provincial legislation includes ecosystems under the Forest and Range Practices Act.

2 Sensitive Ecosystems Inventories. 2014. B.C. Ministry of Environment. Sensitive Ecosystem Inventories website. (Accessed November 13, 2014). http://www.env.gov.bc.ca/sei/

3 Meidinger, D and J. Pojar, 1991. Ecosystems of British Columbia. Special report series; No. 6. , Victoria, B.C. 330 pp

4 [4] Species at Risk Act; S.C. 2002, c.29 <Online: http://laws-lois.justice.gc.ca/eng/acts/S-15.3/>

5 More information about provincially listed species can be found on the BC MOE website.

1.3 Legal Context for protecting Species and Ecosystems at Risk

As a local government, it can be hard to navigate jurisdictional responsibilities with respect to SEAR. There are several pieces of provincial and federal legislation that confer some level of protection for a select number of species and ecosystems at risk, but the legislative framework is difficult to navigate and piece-meal at best. A more detailed overview of this information can be found in the SCCP Guidebook[7].

The federal *Species at Risk Act (SARA)* is the most relevant and compelling piece of SEAR legislation in British Colombia, especially for Local governments. Under the *Species at Risk Act*, listed species at risk and their critical habitat must be protected on all land types, **including local government and private land**[8]. How this protection occurs, differs between federal and non-federal lands. The federal government promotes voluntary stewardship measures for the management of SAR on private land. The federal government looks to the laws of the province to protect SEAR, and if those are insufficient in protecting the species, the Minister must make a recommendation to enact a safety net order to protect the species. *SARA* does not apply to all provincially (Red and Blue) listed species. *SARA* applies only to species listed under Schedules 1, 2 and 3 of the *Act.*

1.4 Community Benefits of Protecting Species and Ecosystems at Risk

In addition to compliance with federal and provincial regulations, there are a variety of community benefits associated with protecting species at risk and biodiversity values in the District of Sqaumish and surrounding area. Table 1, extracted from 'A Guide to Municipal Tools Supporting Wildlife Species and Habitats in Nova Scotia' summarizes the rationale and benefits of local government involvement in SEAR and habitat conservation.[9] The amount that a community values each 'benefit' differs across and within communities. Staff and officials at the District can tailor education, outreach and policy to appeal to the values held by their residents. In Squamish, the maintenance of ecosystems services like erosion control and flood management and the maintenance of ecotourism and high recreational experiences are benefits that resonate with the community. Several public opinion surveys performed in the South Coast region show the support of the general population for the protection of the natural environment and species at risk. These studies can be used as evidence of public support when engaging in discussions with the public, council or other interested parties[10]

Table 1. Rationale and benefits for local government involvement in species at risk, wildlife, and habitat conservation and recovery initiatives (Nova Scotia Natural Resources, 2005).

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6 South Coast Conservation Program, 2014. Local Government Tools Supporting Species and Ecosystems at Risk: A Resource Guide for the South Coast. Available on SCCP's website.

7 South Coast Conservation Program, 2014. Local Government Tools Supporting Species and Ecosystems at Risk: A Resource Guide for the South Coast. Available on SCCP's website.

8 Species at Risk Act; S.C. 2002, c.29 <Online: http://laws-lois.justice.gc.ca/eng/acts/S-15.3/>

9 Nova Scotia Natural Resources. 2005. A Guide to Municipal Tools Supporting Wildlife Species and Habitats in Nova Scotia.

10 Species at Risk Public Opinion Surveys for Canada, BC and the South Coast

General Rationale	Specific Benefit
Creates informed and Healthy Public	Species at risk are indicators for the health of environment
	Better understanding of links to human health, quality of life
	Encroachment on habitats leads to wildlife-human encounters – SEAR awareness and education can help mitigate this
Improved Economic Competition	Tourism (aesthetics, community image)
	Ecotourism
	Increased Property Values
High Quality Recreational Experience	Outdoor activities (hiking, biking, canoeing, camping)
	Hunting and fishing
Maintenance of Ecosystem Services	Forests and vegetation moderate our climate, reduce greenhouse gases (absorb carbon dioxide and release oxygen), and clean our air
	Water purification
	Regulating and cleaning soils
	Maintaining the water cycle
	Recycling nutrients
	Pollinating crops
	Flood management
Improved Quality of Life	Health of local community
	Sustainable economy
	Environmental health
Untapped Funding Opportunities	Collaborate on conservation projects
Not Violating Existing Legislation	Species at Risk Act (section 61 relates to effective protection of critical habitat)

2. Recommendations for the Integration of SEAR into District of Squamish Decision Making

2.1 Compile Species at Risk Information

2.1.1 Generate list of Species and Collect Spatial Data

In order to benefit from the protection of species and ecosystems at risk, the District of Squamish needs to have the best available information about what species are present and exactly where they occur. This requires collection of up to date SEAR habitat and occurrence data from federal, provincial and academic sources and regular updating of DOS maps to reflect these updates. Accurate and up to date spatial data about SEAR and their habitat is important in prioritizing land use and conservation measures. Updating should occur as new information becomes available, or at least every year. Acquisition (parks, protected areas), planning (green networks, zoning, environmental development permit areas,) and other types of protection measures can be more effectively established in a way that best meets management objectives. SEAR spatial data should be linked to existing property tenure information to ensure that parcels with SEAR values are flagged during any building or development permit application, recreational trail development, or other such planned development.

The federal and provincial governments have spatial data for many species and ecosystems at risk in the South Coast.

Provincial Species and Ecosystem at Risk Information

The online BC Species and Ecosystems Explorer can be used to generate lists of provincial species and ecological communities based on a number of criteria options, including conservation or legal status, and spatial distribution[11]. Searching "Squamish Forest District" for red and blue listed species will provide you with a list of SEAR in the District of Squamish, with potential filters according to species with no potential to occur (E.g. marine). The BC [12]Conservation Data Centre (CDC) also maps known locations of Red- and Blue-listed species and ecological communities, referred to as 'occurrences'. The Conservation Data Centre iMap theme can be used to view mapped occurrences and print occurrence reports. Shape files of public occurrences can be downloaded via the B.C. Government Data Distribution Service, and

[11] The Species and Ecosystems Explorer can be found online.

[12] Data Submission forms and information regarding reporting occurrences can be found online.

fall under the Open Government License[13]. It is important to note that the absence of occurrence records in an area of interest does not mean that there are no species or ecosystems at risk present; only that there are none currently recorded in the database corresponding to a specific location. It is recommended that the DOS generate a list of SEAR in its area using the advanced search criteria " Squamish Forest District" in the CDC Species and Ecosystems Explorer. Species and ecosystems are dynamic, and recorded occurrences and listings change as more information is sought and discovered. As such, it is recommended that the District of Squamish assess this list annually (at minimum) and request and obtain relevant information (new species, updated habitat info, new occurrences etc.) as it becomes available. Any and all occurrence data collected by the District should be provided to provincial and federal representatives to be included in the CDC database.

Federal Species at Risk Critical Habitat Information

Environment Canada's Canadian Wildlife Service (CWS) shares detailed spatial data describing the location of candidate and final Critical Habitat for species requiring Recovery Strategies under the *Species at Risk Act.* It is recommended that the District of Squamish request Recovery Strategies and the associated critical habitat information for all species on the DOS list (list generated as per instructions in section 2.1.1). It is also recommended that the DOS update this list annually (at minimum) and request and obtain relevant information (new species, updated habitat info, new occurrences etc.) as it becomes available. It is recommended that the DOS subscribe to the SARA Public Registry email newsletter[14] to receive updates on recovery strategies, upcoming and current consultations and emergency species listings.

Static maps pertaining to final critical habitat are also publically available in the individual species' recovery strategies at: www.sararegistry.gc.ca.

Spatial data (in GIS format) pertaining to candidate Critical Habitat is shared in compliance with Section 39 of the *Species at Risk Act*, and is bound by the conditions of a No-Fee End-Use **Restricted** License Agreement for Government of Canada Geographic Data. The DOS can contact the Species at Risk Consultation Coordinator if they have any questions or wish to enter into a data sharing agreement. Spatial data should be interpreted in conjunction with recovery strategies and any questions or concerns should be addressed to recovery teams and regulatory authorities.

2.1.2 Compile Additional Information

The following information aids in the identification and management of SEAR on DOS lands. Compiling and organizing this information up-front will increase the efficiency and effectiveness of protection efforts.

[13] Some occurrence records are secured for various reasons. Details of secured occurrence records are available if there is a "need-to-know". Please contact CDC for information about secured occurrence records.

[14] Subscribe online.

Ecosystem Mapping Data

Sensitive Ecosystem Inventories (SEI)15, Terrestrial Ecosystem Mapping and the Sea to Sky Habitat Atlas can provide a more comprehensive picture of potential SEAR habitat and areas of conservation interest. As mentioned above, the absence of SEAR occurrence records in an area of interest does not mean that there are no species or ecosystems at risk present; only that there are none currently recorded in the database corresponding to a specific location. Wetlands, riparian areas and other sensitive ecosystems identified through TEM are often the remnants of the natural ecosystems that once occupied a much larger area. As human activities change an increasing portion of the landscape, these remnant ecosystems become increasingly valuable for the conservation of biodiversity. Species at risk habitat and ecological communities at risk often overlap partially, if not entirely with Sensitive Ecosystems such as woodlands, mature and old growth forests, riparian areas, and wetlands. While there is a high degree of overlap between sensitive ecosystems and SEAR habitat, it is prudent to ensure both sets of information are collected and represented in DOS mapping in order to 1) ensure species specific DP submission requirements are used when a SAR is known to be present and 2) to ensure that DOS can demonstrate compliance with *SARA* if required.

It is recommended that DOS continue to use this Ecosystem mapping data to inform development permit areas for the protection of the natural environment (DPA #1). It is recommended that it also be used to inform the development of additional wildlife connectivity corridors, future protected areas and parks acquisitions, and potential habitat restoration projects.

Best Management Practices (BMPs) and "Develop with Care" Guidelines

BMPs and provincially developed Develop with Care Guidelines for each of the species on the District of Squamish's SEAR list (the list to be generated as per instructions in section 2.1.1), should be compiled.

Develop with Care guidelines were prepared by the provincial government for use by local government planners and the development community as a comprehensive guide to maintaining environmental values during the development of urban and rural lands. The guidance documents feature information on 'green' alternatives to typical urban development, riparian protection, terms of reference for conducting biological inventories, checklists for streamlining review processes, sector and species specific BMPs and more[16].

Best Management Practices (BMPs) for species and ecosystems at risk provide guidance for managing activities that are a threat to the recovery of listed species. These management practices are based on the best available science and recognize a need to promote the conservation of species on working landscapes. Local governments can establish, follow and disseminate BMPs. Some BMPs are included in the Develop with Care guidelines, and organizations like the Stewardship Center of BC have developed comprehensive 'Voluntary

[15] Government of British Colombia. Sensitive Ecosystems Inventories.

[16] Develop with Care guidelines also include a number of species at risk factsheets specific to the South Coast region.

Stewardship Practices' for several of the most common threats to species at risk. Through extensive consultation with individuals and organizations that have an interest in the activities addressed, the Stewardship Centre of BC has developed these BMPs for drainage maintenance in agricultural water ways, recreational climbing, domestic and feral cat predation, riparian areas in settled landscapes, and guidance for restoration activities in riparian areas[17].

Guidelines and BMPs should be used in the following ways:

- Shared with DOS operations staff to ensure they are conducting municipal work in a way that supports species and ecosystems at risk.
- Shared with developers to promote SEAR friendly development
- Form the basis for development permit conditions and site alteration permit conditions.
- Shared with the public and special interest groups (i.e. climbers, Squamish outdoor recreation clubs etc.) to promote SEAR friendly activities within the District's jurisdiction and beyond.

Species and Ecosystems at Risk Expert Contact Information

There is a lot to consider when addressing species and their habitat in land use planning. Navigating legislation, politics and community interests, and understanding species-specific recovery actions can be complicated. Connecting with federal and provincial representatives, local conservation organizations and other experts who may be able to provide expertise can help streamline the process and reduce challenges.

Species at Risk Recovery Teams: A Recovery Team exists for most species at risk in BC that have been assessed as at risk by COSEWIC, the arms length scientific body that assesses the status of species in Canada. These teams help oversee all conservation and recovery efforts for a species, including the development of the 'recovery strategy'. Conservation groups and local governments wanting to undertake activities to enhance critical habitat or assist with conservation and recovery of a species within their community would need to communicate with the Recovery Team prior to proceeding. This ensures efforts are coordinated and harmonized with planned actions by specialists and regulators and based on the most up to date recovery recommendations. To contact a specific recovery team, search the species recovery strategy on the Species at Risk Public Registry or contact the appropriate provincial or federal representative (Appendix B).

Provincial and Federal Representatives: In addition to recovery teams, provincial and federal SEAR representatives are an excellent resource for information, support and guidance. Examples of ways provincial and/or federal representatives can assist the District of Squamish in addressing SEAR and habitat protection include:

- The provincially coordinated Species and Ecosystems at Risk Local Government Working Group (SEAR LGWG), providing a forum for communication between

[17] The SCBC's Draft Stewardship Practices guides for species at risk are available on their website. .

provincial and local governments on SEAR issues. The group works together to enhance SEAR protection on private and local government lands.

- Advice on funding sources and potential partners for SEAR related work.
- Access to GIS layers and maps of Critical Habitat for federally listed species, species and ecosystems at risk occurrence information, and provincial sensitive ecosystems inventory (SEI) data for use in local government land use plans[18].
- A list of species at risk for which the federal government will be performing public consultation. This will help local governments address any questions that get misdirected to them. See Appendix C for an example notice than can be sent to residents.
- Communications language and support or presentations to staff, officials or developers or the public regarding SAR in BC and/or the application of *the Species at Risk Act* on private land.
- Information on best management practices and current science for species and ecosystems at risk.

2.2 Develop Biodiversity Conservation Strategy

The development of a comprehensive Biodiversity Conservation Strategy that is directly linked to and informs the OCP and other municipal plans and policies is recommended. This type of strategy takes a holistic approach that extends beyond the scope species and ecosystem at risk and encompasses all biodiversity values, many of which indirectly affect SEAR. The Biodiversity Conservation Strategy (BCS) should include a Green Network that spatially identifies habitat and ecosystem values including but not limited to, sensitive ecosystems, connectivity corridors, species at risk habitat and ecological communities at risk, parks and green space, ALR and forestry tenures. The BCS should include goals, objectives and implementation plans as well as a financial strategy that identifies market-based tools for biodiversity conservation, and terms and conditions for their use. It is recommended that the BCS incorporate the recommendations contained in this report.

Local Government Example: City of Surrey's Biodiversity Conservation Strategy[19]. It is based on ecosystem modelling and mapping and includes policies, BMPs, market-based approaches to protect identified ecosystem values.

2.3 Develop Internal Support and Protocol for Addressing SEAR

2.3.1 Share Information

Misinformation, miscommunication and the resulting lack of trust are key barriers to the successful inclusion of SEAR and biodiversity considerations into local government planning. A well-informed staff, council, public and development/land use community is a foundation to moving conservation initiatives forward smoothly. Opposition, differing values, priorities and agendas will of course exist. However, a well-informed community

[18] Government of British Colombia. Sensitive Ecosystems Inventories.
[19] BCS can be found on the Surrey website. Details on the development of the BCS and green network can be found here.

will reduce the number and magnitude of issues and will expedite the process of finding solutions.

Starting internally by educating and training District of Squamish staff in all relevant departments is an essential step in ensuring that there is a system-wide acknowledgement and integration of values that the natural environment, wildlife, habitat and biodiversity have as part of local government decision-making. These issues must be a part of everyday operations within the DOS and must be the responsibility of all rather than just an afterthought or an addendum added to approved policies and plans. In-house staff workshops, training sessions, lunch-and-learns, and educational materials like issue specific booklets/notices can address local government-specific elements of environmental protection.

A well-informed public is also key to effectively integrating SEAR protection into long-term decision making. Involving the public can increase the level of ownership and value recognition of species and species related projects, reduce opposition to local government led initiatives and policy development and act as an excellent public relations opportunity. The DOS should include the public at each step of the process, with the caveat that all Squamish staff should be well informed of the issue and process before consultation with the public begins.

2.3.2 Designate point person for SEAR related inquiries.

While it is important for all staff at the District to have a basic understanding of SEAR and how it relates to their role and their work, it is recommended that an individual be the point person for SEAR related inquiries both externally and internally. Currently, federal species at risk consultations often don't make it to staff, or staff handles inquiries from concerned citizens when they should be directed to upper level government. Having a point person who is connected to the appropriate experts is important. In the early stages of addressing SEAR, the point person can help facilitate inter-departmental collaboration and training workshops, disseminate SEAR information including BMPs and respond to SARA species consultations that effect the municipality.

2.3.4 Revise DOS plans policies and bylaws to incorporate SEAR

Suggested revisions to the District of Squamish's Plans Policies and Bylaws can be found in Appendix A. The purpose of these revisions is to ensure SEAR is included in everyday decision making at the municipal level. The proposed revisions and recommendations are designed to help the DOS work towards compliance with provincial and federal legislation, with specific focus on compliance with the federal *Species at Risk Act.*

2.3.5 Ensure DOS operations support species and ecosystems at risk

Many local governments own a significant amount of land and have to manage and maintain these properties. As a landowner, the DOS can lead by example when it comes to species and ecosystems at risk protection. The following considerations will increase the District's ability to manage SEAR on its land.

- Identify presence/ absence of species on DOS land using spatial information compiled as per section 2.1.2 of this report. Perform additional on-the-ground surveys for species and ecosystems at risk in collaboration with provincial and federal species at risk experts and/or include select SEAR in an ecosystem monitoring program.
- Inform operations staff of species at risk habitat or ecological communities at risk that occur on DOS land.
- Train operations staff to identify species at risk
- Develop a procedure for the reporting of SEAR occurrences to the District's SEAR point person and to the appropriate provincial and federal representatives.
- Make Staff aware of the best management practices and develop with care guidelines for species that occur on DOS lands (List of species compiled as per recommendations in section 2.1.2 of this report)
- Work with species at risk experts to develop species and situation specific mitigation strategies where possible.

It is incredibly important for Squamish to know what SEAR is present or likely to be present on their land and manage accordingly. It is especially important before construction or development. The District can lead by example by selecting maintenance and construction methods that minimize or eliminate negative impacts. These types of solutions confer many benefits. For example, choosing to maintain natural vegetation on a site would be integral to retaining natural ecosystem services such as noise and visual buffering, treatment of run-off, helping control erosion as well as maintain natural habitat for wildlife species.

2.3.6 Use Sensitive Ecosystem Inventory and SEAR data to inform Acquisitions, Divestments and Parks Management

If SAR critical habitat or ecological communities at risk are identified on DOS land, the DOS can also take steps to ensure the protection of the land through (as an example), the formation of a park, protected area, setting up a conservation easement, partnership with a land trust or taking advantage of the benefits of donating land through the federal "Ecogifts program".

The DOS can also engage in habitat restoration projects on municipal land, where appropriate. Qualified professionals should undertake habitat rehabilitation and recovery team members should be consulted if the restoration is designed for a specific species at risk. It is recommended that the DOS develop an inventory of potential restoration projects (informed by SEAR mapping data, TEM, local habitat inventories and recovery expert advice). This inventory can be included as part of the Biodiversity Conservation Strategy or as a separate document.

When purchasing land, Squamish can give consideration to whether or not the land has significant wildlife value including specific ecosystems and species at risk habitat, and

how it is connected to other habitat areas, such as government owned parks and protected areas. In this way, DOS can optimize the benefit of land purchases and increase the amount of connectivity through the landscape.

Finally, when the DOS sells land, it should be aware of any sensitive ecosystems, species at risk or habitat attributes. To support this, a process could be established where parcels of land for sale are cross-referenced with a database of species and ecosystems at risk locations and a Recovery Team or provincial or federal representative is contacted prior to the public sale of land (See Appendix B for representative contact information)

2.3.7 Develop Ecosystem Monitoring Programs

It is recommended that the District establish and Ecosystem Monitoring Program, which includes species and ecosystem at risk monitoring, with the aim of tracking biodiversity and ecosystem health over time. Having a systematic way to track biodiversity in the region will provide a better picture of the state of ecosystem health and can also inform and lend legitimacy to decisions that affect the environment. Long term monitoring will provide a more accurate and fine-scale picture of SEAR resources in the DOS than is currently provided by provincial and federal mapping. While the development of a monitoring program can seem onerous and costly, there are opportunities to partner with local ENGOs and apply for grants that would support monitoring program development. Note: Any SEAR data collected by the District through an Ecosystem monitoring program or by any other means should be communicated with species recovery team biologists. The provincial government has developed the following recommendations with respect to SEAR sampling:

- Sampling must be conducted in accordance with any detailed standards that have been recommended by the Ministry of Environment. Data submissions should be in accordance with Conservation Data Centre protocol[20].
- If detailed standards are not available, then Resources Inventory Standards Committee (RISC) approved sampling methodology must be followed[21]
- To ensure that data are considered credible, a qualified environmental professional should conduct sampling.
- Surveys should be conducted at the appropriate time of year because for some species detection out of season may be impossible.
- Survey methods should be adjusted where possible to avoid incidental mortality of non-target species (e.g., when minnow trapping in the range of the Pacific Water Shrew)

[20] Data Submission forms and information regarding reporting occurrences can be found online.

[21] RISC standards exist for a variety of ecosystem and species types. Information can be found online.

3. Conclusion

Both globally and locally, human activities have already had significant impacts on native flora and fauna and the ecosystems that they rely on. With the population of the Squamish and the Sea to Sky Corridor steadily climbing, increasing conflicts over conservation versus population growth are likely to increase. Species and Ecosystems at risk represent some of the most unique and sensitive biological resources in the Squamish area. A loss of SEAR in the DOS is indicative of the degradation of environmental health, human health, long-term economic prosperity and cultural values of the region. Proper consideration and planning is necessary now to ensure Squamish retains the environmental, cultural and recreational values it is known for.

The recommendations provided in this report represent a starting point for the development of a comprehensive strategy for addressing species and ecosystem at risk management and protection. Additional discussion with DOS staff, provincial and federal species at risk experts, consultation with affected stakeholders and additional inputs of technical expertise and resources will be required to fully address the recommendations put forward in this report. The South Coast Conservation Program would be happy to meet with staff and other DOS representatives to discuss this review and the recommendations put forward and look forward to working with the DOS as the process evolves.

Appendices

Appendix A: District of Squamish's SEAR Policy Review and Recommendations

As agreed upon with District of Squamish Staff, the SCCP reviewed the content approach and efficacy of the following plans and policies and tools in protecting Species and Ecosystems at risk:

1. OCP Bylaw 2100, 2009(including DP Areas)
2. -Site Alteration Bylaw
3. -Land Development Application Form
4. -Land Development Internal Checklist
5. -Zoning Bylaw No 2200, 2011

Recommended revisions and additions to these plans and policies that allow for better consideration of SEAR in District of Squamish land use are provided below.

1. District of Squamish Official Community Plan Bylaw 2100, 2009

General Recommendations

a. Where appropriate, modify language associated with "sensitive ecosystems" and "habitat" to explicitly include species at risk, their habitat, and ecological communities at risk. "Sensitive ecosystems" don't always include SEAR, and the definition of SEAR doesn't include all sensitive ecosystems so it is important to make sure both of these environmental values are represented.

b. Provide definition of Species and Ecosystems at Risk in OCP Glossary.

Definition: Species and Ecosystems at risk are defined as all species at risk listed under Schedule 1 of *the Species at Risk Act (S.C. 2002, c.29)*[22] as well as BC Conservation Data Centre (CDC) Red and Blue listed species and ecosystems[23]

c. Land identified as species and ecosystems at risk habitat should be designated as Development Permit Area for the Protection of the Natural Environment

d. A Green Infrastructure Network should be developed that identifies areas of environmental value and outlines a comprehensive strategy for the protection, enhancement management of these areas (see section 2.2).

Specific Recommendations

R1) Section: OCP Part 3- Growth Management, page 25. Sustainability Commitment #3. Work in harmony with natural systems.

a. Revise to read "…protects ecologically sensitive areas including species at risk and their habitat as well as ecological communities at risk.

b. DOS should continue to development of the stated "green and blue networks" put forward in the Downtown Squamish Concept Plan[24] and referenced in this OCP. Development should be based on detailed ecosystem mapping and **integrate species at risk critical habitat maps** as provided by the federal and provincial governments. Green networks can manage for multiple objectives by providing opportunities for recreation, identifying ecosystem connectivity, protection and restoration opportunities, as well as informing decisions regarding urban growth and zoning and park and recreational acquisitions.

Local Government Example: City of Surrey's Green Infrastructure Network, which is detailed within the city's Biodiversity Conservation Strategy[25].

R2) Section: OCP Part 3- Growth Management, page 28. Protected Areas, Ecological Greenways and Blueway Systems.

a. Include explicit reference to SEAR. Change to read, "It is intended that the network will expand the protected areas to include important natural areas, sensitive ecosystems and species and ecosystems at risk habitat, and avoid fragmentation of habitat areas."

[22] [22] Species at Risk Act; S.C. 2002, c.29 <Online: http://laws-lois.justice.gc.ca/eng/acts/S-15.3/>

[23] More information about provincially listed species can be found on the BC MOE website.

[24] UBC Design Centre for Sustainability, 2005. Downtown Squamish Concept Plan. Available online.

[25] BCS can be found on the Surrey website. Details on the development of the BCS and green network can be found here.

b. Again, honour the content of the OCP by developing a comprehensive Green network and proposed and referenced in the OCP.

R3) Section: OCP Part 3- Growth Management, page 30. Protected Areas and Greenway System 10-20.

a. Change Policy 10-20 to require a more detailed, expansive and comprehensive green network. The policy currently reads, "Lands designated as Parks and Ecological Reserves, and Greenway Corridors and Recreation on Schedule B form the foundation of the District's protected areas and Greenway system." This foundation, as shown on Schedule B, lacks connectivity (ex. there is not even a single corridor connecting Alice Lake Provincial Park to the rest of the "network"), and just acts as a visual inventory of lands with some ecological value. It also doesn't reflect language earlier in the OCP that states, "It is intended that the network will expand the protected areas to include important natural areas and sensitive ecosystems and to avoid fragmentation of habitat areas." Rather than being just a map of the green spaces that currently exist within the DOS's jurisdiction, the green network should identify any land (including private) that has ecological value and what that value is, identify land that has restoration potential, and identify areas that could be added to the network. It should also include a concrete strategy for the use, protection and restoration of the identified network. For example, the city of Surrey's Green Network and associated Biodiversity Conservation Strategy outline how much of the green network is privately owned and how they intend to protect it, whether is it through a green levy or development cost charges used to purchase and set aside lands of ecological value, or Development Guidelines or landscaping bylaws for properties adjacent to the network.

R4) Section: OCP Part 3- Growth Management, page 32. Future Boundary Expansion and Adjustments.

a. Revise policy 10-47 to include a 5th condition: e) no net-loss of environmental values including harm to sensitive ecosystems, species at risk and their habitat and ecological communities at risk.

R5) Section: OCP Part 3- Growth Management, page 37. Area Planning (Neighbourhood Plans and Sub-Area Plans).

a. Revise policy 11-11 to include explicit reference to species at risk. Change condition d) to read " environmentally sensitive areas including species at risk habitat and ecological communities at risk and opportunities for protection and enhancement."

R6) Section: OCP Part 3- Growth Management, page 38. Cheekeye Special Study Area.

a. Revise policy 11-22 to include explicit reference to species at risk. Change condition c) to read "Inventory of the environmentally sensitive areas, including species at risk

habitat and ecological communities at risk, other environmental habitat, and wildlife movement corridors and identify opportunities for protection and enhancement;"

R7) Section: OCP Part 3- Growth Management, page 39. Land Use Designations.

The land use designation "Greenways and Recreation" and all associated policies should be revised or sub-divided to better identify management objectives associated with recreation and those associated with habitat protection/ wildlife values. While there are many opportunities for multi-use spaces that satisfy objectives for both, without clearly designating the objectives and areas for each, you can't accurately manage either of them and one will take precedence. Currently the designation

"Applies to major recreational or wildlife greenway corridors, riparian corridors of key streams and rivers, selected areas within the 200-year floodplain, golf courses or selected undeveloped portions of the Highway 99 corridor. Examples of uses within the Greenway Corridors and Recreation designation include habitat protection areas such as the Squamish River Estuary, riparian areas for watercourses, campgrounds, golf courses and other areas used for recreational purposes."

The description is too broad and lists a wide variety of activities that have the potential to be contradictory. For example, a campground or golf course has a very different use and management objectives than a riparian area and not only does it not provide habitat protection for most species, it can actual pose a large threat to habitat. Yet, they all fall under the same designation.

Areas identified in this designation should be subdivided based on use and management objective, with the opportunity to identify areas that are multi-use. If a distinct land use designation for habitat/ sensitive area/ species at risk is not provided (outside of existing Provincial Protected areas and ecological reserves) the recreational and trail uses will take precedence. This can already be seen on page 54 of the OCP where Policy 15 – 1 states "Lands identified as Greenway Corridors and Recreation on Schedule B are intended to provide areas for recreation and provide trail corridors throughout the District." Within the same document the objectives related to habitat protection have already been forgotten. If this part of the OCP is not appropriate for such detail it should clearly state where these more fine-scale items can be found.

R8) Section: OCP Part 4- Policies. Page 60. Natural Environment.

General Policies

a. Revise objectives to include explicit reference to species at risk. Change Objective 1 to read "To preserve, protect, and enhance the natural environment, environmentally sensitive areas and species and ecosystems at risk;"

b. 16-2 Ensure "Lands for the Protection of the Natural Environment" that are designated as Development Permit Area No. 1 are revised to include SEAR habitat and that SEAR is always a consideration when making these designations in the future.

c. 16-3 Ensure "Lands identified for the protection of watercourses and riparian areas as designated in Development Permit Area No. 11. are revised to include SEAR habitat of any species that are riparian dependent (i.e. Pacific Water Shrew). This may require the widening of some riparian corridors.

d. 16-5 Revise policy to read "The District will consider conserving or protecting areas having significant natural habitat value, with a focus on sensitive ecosystems, species at risk habitat and ecological communities at risk, and important wildlife corridors, in an effort to maintain habitat.

Environmentally Sensitive Areas

e. 16-14 Revise policy to read "The District shall map and inventory sensitive environmental areas including species at risk habitat and ecological communities at risk and update Schedule C when the mapping has been completed.

f. 16-16 This is an excellent clause, however follow through is key. Ensure SEAR are included in the environmentally sensitive areas assessment and mitigation for Future Sub Area Plans.

g. 16-17 Revise to include explicit reference to SEAR instead of just sensitive environmental areas. Add clause " The District will develop a financial strategy for the acquisition of environmentally sensitive land, informed by the green network. A plan, complete with financial strategy is necessary in order to prioritize and optimize the acquisition of environmentally sensitive land. If part of the parks and recreation acquisition plan, it should be clear that the management objectives for certain parcels are protection and restoration before recreation.

Local Government Example: The Capital Regional District's Land Acquisition Fund was initially established in 2000 for a ten year period based on a rate of $10 per average household assessed value. The fund, and land acquired for the regional parks and trails system, is based on the

vision and strategic direction in the Regional Parks' Master Plan[26]. The City of Surrey is currently exploring similar methods to acquire land identified in their green infrastructure network.

Streams and Riparian Areas

h. 16-18 As noted above, ensure that riparian areas for habitat protection are distinct from recreation areas when designated in Schedule B.

i. 16-19 Ensure the critical habitat of riparian dependent species (example pacific water shrew) is designated as a Riparian Assessment Area.

Cooperation and Coordination

j. 16-37 Revise item g) to read "protect habitat of federally listed species at risk and provincially designated Red (endangered) and Blue (rare) species of birds, wildlife and plants as well as provincially designated ecosystems at risk."

k. If possible, include a distinct "Species and Ecosystems at Risk" section under 16-The Natural Environment, combining all of the above recommendations in one section.

R9) Section: OCP Part 5- Development Permit Area Guidelines. Page 129.

a. **Location:** Include sensitive ecosystems, identified species at risk critical habitat and ecological communities at risk in the Protection of the Natural Environment DPA. Amend Schedule C: Sensitive Areas, and Schedule J: DP Areas to include SEAR. See section 2.1 of this report for guidance on where to find critical habitat mapping.

b. Objectives: add the following objectives:

- Identify, conserve, rehabilitate and protect sensitive habitats and important ecosystems, including species at risk habitat and ecological communities at risk.
- Ensure that when reviewing proposals for future development, resource activities and infrastructure project the planning will proactively avoid or if appropriate, mitigate effects on sensitive habitats and important ecosystems.

[26] Information on the CRD's land acquisition fund can be found here.

c. **Guidelines:** Guidelines should be developed for DPA #1 (and potentially applied in other DPAs) that include the following considerations

- Requirement of environmental assessment by qualified environmental professional with experience with the SEAR that has been identified at the site. Terms of reference for the assessment should be included. Assessment will determine non-disturbance areas, conditions for approval etc.

- Experience of the QEP with the SEAR must be demonstrated and assessment must be completed under appropriate conditions (during appropriate time of year etc.)

- Requirement for developer to consult and work with provincial species at risk biologist and/or designated community stewardship group when determining site placement and/or mitigation measures.

- Mitigation where there may be potential for damage to the natural environment during the approved construction; or retain, resolve or replace native vegetation. Species specific Best Management Practices and "Develop with Care Guidelines" should guide mitigation measures when SEAR are present.

- Requirement for construction management plans indicating how non disturbance areas will be protected during construction such as preventing encroachment (fencing), erosion and sedimentation, storage and maintenance of vehicles and controlling invasive plant species (a major threat to SEAR).

- Requirement for monitoring reports at the expense of the applicant/ developer by a qualified environmental professional (QEP) during construction to ensure the conditions of the development permit have been fulfilled.

Local Government Examples: There are many progressive and innovative sets of development guidelines for the protection of the natural environment. The Village of Pemberton has an effective set of guidelines[27]The Green Bylaws toolkit also has several excellent sets of guidelines, all of which have been vetted by environmental lawyers[28].

R10: Section: DPA 11-Riparian Area Protection. Page 164-165

[27] The Pemberton OCP and DP Area Guidelines can be found here.

[28] Curran, D. 2009. Green Bylaws Toolkit for Conserving Sensitive Ecosystems and Green Infrastructure. Ducks Unlimited Canada. Available online

a. Include the critical habitat of riparian dependent species in definition of the Riparian Assessment Area. Accordingly, consider impact on these species when assessing buffer distance.

b. Revise Guideline 7 to read "wildlife species that support the integrity of fish habitat, with special consideration for species at risk."

2. Site Alteration Bylaw

In general the site alternation bylaws is useful as it regulates several activities that can pose a threat to species and ecosystems at risk. Regulatory bylaws like this one are reactive because they enable staff to enforce the bylaw. It can also act to bolster the setbacks in zoning bylaws and Environmental DPA conditions by making enforcement simpler through ticketing. In general the bylaw could incorporate more tree and soil protection considerations and more explicitly state the process for the approval or rejection of permits requested under the bylaw. The following amendments can be made to improve the ability of the site alterative bylaw to protect SEAR.

a. The site alteration bylaw is not as comprehensive as many other jurisdictions' tree/ soil removal bylaws and thus doesn't not provide as much protection as it could. The bylaw only requires permits for the removal or cutting of trees, but does not prohibit damage. It also doesn't explicitly state that permits can be withheld if terms and conditions are not met. With respect to Species and Ecosystems at risk, it is recommended that the Bylaw be amended to prohibit cutting of any trees associated with sensitive habitats or ecosystems at risk (a list of trees should be drawn up in consultation with provincial species at risk biologists).

b. Site Alteration Permit Information Requirements should be amended to include.

    - A site plan indicating the location of site alteration, an inventory of all non-alder trees exceeding a diameter of 0.4 metres measured 1 metre above natural grade of land from the ground to be cut, topographic and hydro-graphic features, structures, roads and other pertinent features;
    - A description of the proposed means of protecting trees which are to remain standing;
    - An environmental assessment report performed by a qualified environmental professional with a focus on sensitive ecosystems and species and ecosystems at risk.

- A proposed replanting plan indicating: location, species, size, and class of trees, bushes and shrubs which are to be planted;
- A copy of any applicable federal or provincial approval.

Local Government Examples: The Resort Municipality of Whistler and the District of North Vancouver both have comprehensive environmental protection bylaws that include regulations for soil removal or deposition and tree cutting or damage[29].

3. Land Development Application Form

It is recommended that the application form be revised to reflect the proposed changes to the OCP.

Revisions:

a. Revise "Natural Environment Areas" box to reflect the addition of species at risk habitat and ecological communities at risk to the Environmental Development Permit Area.

b. Revise "Site Alterations" box to indicate if and how many trees are to be cut.

4. Land Development Internal Checklist

Include SEAR considerations in Section 3: Environment, either as "Species and Ecosystems at risk protection" or "Species and Ecosystems at Risk management".

5. Zoning Bylaw

A detailed review of the zoning bylaw is not within the scope of this review, however the following concepts should be considered for their potential to direct development away from sensitive ecosystems and encourage the permanent protection of these ecosystems.

1) **Conservation Zoning:** The District can rezone to decrease the density or intensity of use in areas that require more protection for ecological features. The District does not have to pay any compensation to landowners for changes in the value of land due to rezoning enacted in the public interest (Section 5.4 and 914 of the Local Government Act). The potential to reduce land values can make conservation zoning unpopular, but it's a relatively straightforward way to prevent development in environmentally sensitive areas.

[29] District of North Vancouver Environmental protection Bylaw is available here.

2) Cluster Development: Tools like density averaging and amenity density bonuses can be used to encourage developments that cluster on the part of the site away from environmentally sensitive areas like SEAR habitat.

3) Amenity Density Bonuses and Amenity Zoning: Funds collected from developers for the provision of increased density (FAR) can be put towards habitat/ riparian restoration efforts on or around the site, acquisition of land with ecological value towards other environmental initiative within the community.

Detailed information on zoning for ecologically sensitive areas can be found in the Green Bylaws toolkit[30]

[30] Curran, D. 2009. Green Bylaws Toolkit for Conserving Sensitive Ecosystems and Green Infrastructure. Ducks Unlimited Canada. Available online

Appendix B: Contact Information

Contacts:

The following individuals can be contacted for questions related to species and ecosystems at risk, species of conservation concern, and other significant wildlife habitats in the South Coast.

Federal Representatives

For general queries and to be directed to additional expertise:
Species at Risk Consultation Coordinator
Environment Canada
Canadian Wildlife Service
SAR.pyr@ec.gc.ca
604-350-1900

Provincial Representatives

For general queries and information regarding SEAR and local governments:
Lynn Campbell Species at Risk Biologist
Ministry of Environment
Victoria, BC
Lynn.Campbell@gov.bc.ca
tel: (250) 387-9676; fax: (250) 387-9750
http://www.env.gov.bc.ca/wld/searl_gwg/

For area-specific information regarding SEAR in the South Coast Region:
Kym Welstead or Kristina Robbins
Ministry of Forests, Lands and Natural Resource Operations
Surrey, BC
Kym.Welstead@gov.bc.ca, Kristina.Robbins@gov.bc.ca

For information on provincial recovery planning please visit:
*http://www.env.gov.bc.ca/wld/recoveryplans/rcvry1.htm#sixth_*

For information on status ranking or occurrence data for SEAR in BC:
BC Conservation Data Centre
Ministry of Environment
Victoria, BC
CDCdata@gov.bc.ca

Appendix C: Example notice to residents regarding federal species at risk consultation

Example notice that local governments could use to communicate with residents about a species at risk draft recovery strategy consultation taking place in their community:

Did you know our community is home to (type and name of species? E.g., a small mammal called the Pacific Water Shrew). The habitat this species needs to live includes: (describe features found in species fact sheet provided in the consultation materials. E.g., near bodies of water). Environment Canada's Canadian Wildlife Service is consulting on a draft recovery strategy document for (name of species). A recovery strategy describes what a species needs to survive and recover. You may receive information regarding this consultation process in the mail if Critical Habitat has been identified for the species and it includes your land. If you have seen this species and/or have the type of habitat described on your property you can contact Environment Canada to learn more. Please send inquiries to:

Species at Risk Consultation Coordinator
Environment Canada
Canadian Wildlife Service
SAR.pyr@ec.gc.ca
604-350-1900