

Species at Risk and Critical Habitat: Understanding Responsibilities & Making Informed Decisions On Private Land



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SOUTH COAST CONSERVATION PROGRAM

Protecting and Restoring at Risk Species and Ecological Communities on BC's South Coast

Species at Risk and Critical Habitat: Understanding Responsibilities & Making Informed Decisions On Private Land

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About the South Coast Conservation Program



As a leading conservation partnership program in BC, the South Coast Conservation Program has been working with landowners and decision makers since 2005 to ensure they employ the most effective tools and resources to protect and conserve species at risk on BC's South Coast. For further information about our work and other resources please visit us at

www.sccp.ca

Disclaimer:

The SCCP is not a regulatory authority. Information provided in this document and through other resources developed by the organization is designed as guidance only, is not a substitute for legal advice and will not guarantee compliance with municipal, provincial or federal requirements or regulations. Users of this document are strongly advised to contact the appropriate government authorities to address questions or concerns, and be prepared to retain the services of an appropriately qualified environmental professional (QEP) with demonstrated skills in species at risk conservation and critical habitat restoration and protection.

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Terminology – Read Me First!¹

The following terms or abbreviations are used in this document

Critical Habitat (CH): The habitat that is necessary for the survival or recovery of a listed wildlife species (schedule 1), and that is identified as the species' critical habitat in a recovery strategy or in an action plan for the species.

Critical Habitat Protection Assessment (CHPA): When assessing whether critical habitat is being effectively protected, Environment and Climate Change Canada uses a four-step process called Critical Habitat Protection Assessment on Non-Federal Lands (referred to as CHPA).

Candidate critical habitat: CH that is being assessed with the intention to propose it for inclusion in a recovery strategy prior to the document being ready for posting as proposed.

Recovery Strategy: Planning document that identifies what needs to be done to arrest or reverse the decline of a species at risk.

Migratory Birds Convention Act (MBCA): One of Canada's oldest pieces of legislation, the Act implements the Convention between Canada and other countries by protecting and conserving migratory birds — as populations and individual birds — and their nests.

Federal Fisheries Act (FFA): One of the oldest Acts in Canada, the FFA provides for the legislative authority to protect fish and fish habitat from destructive activities in marine and inland waters.

BC Wildlife Act: Protects virtually all vertebrate animals (including introduced species) from direct harm, except as allowed by regulation (e.g. hunting or trapping). Under this legislation, any vertebrate species other than fish can be legally designated as endangered or threatened — enabling additional protection.

BC Water Sustainability Act: The WSA is the principal law for managing the diversion and use of water resources. The Act's associated regulations identify what types of activities are allowed with or without a permit around different waterbodies (see Stream and Wetland next.)

Stream: A natural watercourse, including a natural glacier course or natural body of water. Bodies of water described by the term "stream" can include a lake, pond, river, creek, spring, ravine, gulch, wetland, or glacier, whether or not usually containing water, including ice.

Wetland: A distinct ecosystem that is inundated by water, either permanently or seasonally characteristically colonized by aquatic plants, adapted to the unique water-saturated, low oxygen soil.

BC Riparian Act - Riparian Areas Regulation (RAR): Calls on local governments to protect riparian areas during residential, commercial, and industrial development by ensuring that a Qualified Environmental Professional (QEP) conducts a science-based assessment of proposed activities.

Riparian Area: A distinct ecological association that links water to the land that borders streams, lakes, and wetlands. The blend of elements in this transition area (e.g. streambed, water, trees, shrubs and grasses) provides and directly influences the habitat used by fish and wildlife as well as associated plant species.

Qualified Environmental Professional (QEP): An applied scientist or technologist who is registered and in good standing with an appropriate B.C. professional organization constituted under an Act.

Environmentally Sensitive Area (ESA): Places that have special environmental attributes worthy of retention or special care. These areas are critical to the maintenance of productive and diverse plant and wildlife populations. Many municipalities and or regional districts have mapped and assessed their ESAs.

Sensitive Ecosystem Inventory (SEI): Sensitive Ecosystems are often the remnants of the natural ecosystems that once occupied a much larger area and are increasingly important as human activities change the landscape. They are rare, ecologically fragile, or at-risk ecosystems. A number of regional districts (e.g. Metro Vancouver) and some municipalities have mapped these ecosystems.

Development Permit Area/Environmental Development Permit Areas (DPA/EDPA): Land use/develop review permitting designated for specific areas and purposes, typically subject to the provisions of the Local Government Act. EDPAs are triggered when an ESA or SE is part of the development footprint.

¹ Definitions are drawn from municipal, provincial and federal sources.

About this Guide

Whether you are a homeowner, property manager, developer, or a realtor, you should be aware of your responsibilities under the Canadian *Species at Risk Act* (SARA). This legislation, enacted in 2003 protects Canada's endangered plants and animals and their habitat and applies to all lands in Canada. This guidance document is designed to assist you in understanding your roles and responsibilities as private landowners or private land managers by ensuring you undertake land use activities in a way that does not negatively affect species at risk or their habitat.

On non-federal (e.g. private) lands, the Government of Canada has identified voluntary stewardship as the key approach to help ensure the protection of species at risk and their habitat. The Federal Government applies a "Critical Habitat Protection Assessment" or CHPA (pronounced chee-pah) to measure how well this voluntary approach is working for a given species or its critical habitat. Critical habitat is the habitat that a species needs to survive and recover and is identified in a species' recovery strategy or action plan. These plans are science-based roadmaps that set out what we know about a species at risk and what is needed to recover their populations and reduce their likelihood of going extinct². Only SARA listed species classified as Threatened or Endangered critical have their habitat identified and mapped out.

Taking it step by step:

So how do you as a landowner even find out if critical habitat is an issue you need to be concerned about, and if your property is affected, what next?

On the following pages we will explore the steps needed to take proactive, effective measures to answer these questions. The information we have provided is designed to be as comprehensive as possible. It may well be that you will need to retain the services of a professional (QEP) like a biologist to help you address certain issues. Many aspects covered may seem a lot to take in and worrisome. The intent of the SCCP is not to add costs to landowners, increase their frustration or tell them what they can or cannot do on their property. But we would be remiss if we didn't cover all the bases and provide you with the best understanding of what your obligations are under the legislation, and what options are available to achieve them.

To make the guide more meaningful and relevant to local audiences and issues on the South Coast, we have chosen to use the Pacific Water Shrew, a species found only on the South Coast in Canada, and whose distribution covers a number of municipalities here. While perhaps not as high profile species at risk like the Mountain Caribou or Northern Spotted Owl, as a small mammal with habitat requirements encompassing both aquatic and riparian realms, this diminutive, unique creature exemplifies the diversity of considerations needed to achieve effective protection.



Figure 1. The Pacific Water Shrew, a focus for this guide, is a federally listed endangered species in Canada found only on BC's South Coast. Image credit: Tamsin Baker

² For a comprehensive overview of SARA including recovery strategies, critical habitat and how the legislation deals with the issue of effective protection, see Appendix 1.

A Decision Process to Get Started: Consider this your initial step to help determine if critical habitat may be an issue. Taking this approach is a proactive way to avoid surprises and frustration during development, redevelopment or other changes or activities you may wish to undertake on your property:

Do You Have?

Features on your property important for fish and or wildlife? These can include: Streams (permanent or seasonal), ponds, wetlands, meadows, unused agricultural fields ("old field habitat"), forests, stands of mature trees, large downed (dead) or standing dying trees (aka "wildlife trees").

Yes

Check and see if your property contains or is near known critical habitat. This information has been mapped for a number of SARA listed threatened and endangered species (in their recovery strategies). The Province of BC also has mapping resources that provide occurrence information for species at risk. [See pgs. 15 & 16 for guidance on how to find out if your property is affected by critical habitat.](#)

If your property supports critical habitat, or there are records or observations of species at risk near your property, or has features noted in the box above (especially streams or wetlands), it is recommended that you seek the assistance of an appropriately skilled, qualified environmental professional ("QEP"). [See pg. 3.](#) If harm cannot be avoided special permitting and or restrictions may be triggered

No

Useful Tips:

Check with your municipality or regional district about:

- Mapping or reports for [environmentally sensitive areas](#), rare plants, fish or wildlife, fish-bearing streams, wildlife trees or other important ecological features.
- Special zones like [development permit areas including EDPAs](#).
- Bylaws for activities like tree removal, building on steep slopes or near streams (e.g. RAR). [See pg. v for more about these terms.](#)
- Local naturalist groups or conservation organizations in your community. There may be local knowledge keepers that can tell you about species at risk on or near your property. [See pgs. 17-19](#)

Does this mean I can go ahead?

Critical habitat for many species at risk has not been fully mapped, or existing maps require updating. As well the provincial and federal government often recommend buffer distances to reduce outside effects on critical habitat, which for some species like the Pacific Water Shrew (covered in this guide) is 100 meters. So to err on the side of caution, even if your property doesn't directly support critical habitat, or your property doesn't have those important features noted at the beginning, if there is critical habitat next door you should ensure your activity doesn't end up having negative effects, even if they are indirect. A quick decision tip would be to identify where the closest critical habitat ([see pgs. 15 & 16](#)). For a species like Pacific Water Shrew, if it falls outside of 100 metres, AND you or your neighbour's properties do not have any of those important features noted at the beginning, you probably are in a safe zone to proceed.

Just remember that many species at risk such as Little Brown Bats, Barn Swallows and amphibians like the Western Toad use human structures like roofs, attics, crawl spaces etc. for roosting, rearing their young, nesting or hibernating. Some species at risk use dedicated migration routes that cover large distances between habitat patches, even when there are roads or structures in the way. And non-SARA listed species are still protected under other legislation (MBCA, WA, [see pg. v](#)) as well as things like timing windows (best time to do activities with the least harm). That is why the best approach is still to discuss your planned activity with your municipality just to be sure (especially since other types of permits may be required).

Do I need to hire a Qualified Environmental Professional?

For many issues related to the environment, federal, provincial and municipal governments all have similar requirements for retaining the use of appropriately skilled qualified environmental professional (QEPs)³ such as Registered Professional Biologists, Engineers, Foresters, Landscape Architects and Technologists etc. These designations all reflect accreditation in a legislated professional body governed by codes of practice.

If your property supports identified critical habitat, or has features which are associated with species at risk, or there are records or observations of species at risk near your property, it is recommended that you seek the assistance of a QEP. Aside from expertise to help you avoid or reduce harm to the environment, a QEP will help avoid costly mistakes and holdups to development and other land use activities.

What to look for in your QEP?

Most professional associations provide a public registry of members that identifies the geographic area they work in and their particular areas of expertise. However not every QEP is a skilled expert in species at risk ecology or the protection of critical habitat. As with securing the services of any professional, you should ask questions to ensure you receive an appropriate level of expertise that can be backed up by references and abilities. Costs for QEPs can vary, but cost is not an indicator of whether a QEP has the necessary expertise to provide the advice or undertake the tasks needed. An expert in rare plants who has never undertaken a small mammal survey would not be an appropriate individual to be assessing critical habitat for a species like the Pacific Water Shrew (see page 6).



Image credit: Pamela Zevit

Questions to ask when choosing and retaining a QEP:

- ? Do they have supporting credentials (e.g. proof of membership from an accrediting body, or a degree, diploma or certification showing relevant studies in areas such as restoration ecology, conservation biology, plant ecology, wildlife ecology, inventory and monitoring etc.)
- ? How many years of relevant experience do they have (training and academic accreditation is important, but so are years of on the ground, real world practical experience)
- ? Can they provide examples of experience with species at risk (e.g. other projects surveying and assessing critical habitat or inventory expertise specific to the species concerned)
- ? Do they have demonstrated experience and understanding of relevant bylaws, regulations and policies e.g. SARA, BC Wildlife Act, Fisheries Act etc. (see page v and Appendix 1)
- ? Can they provide recent references from other clients (e.g. landowners, developers or government)
- ? Do they carry comprehensive general liability insurance and errors and omissions insurance⁴
- ? Will they take responsibility for any deficiencies or issues that might crop up with the project⁵

³ See: <http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/fish/riparian-areas-regulation/qep-resources>. In some instances regulatory agencies may accept using experts who are not accredited with a legislated professional body, but are highly recognized for their skills and expertise on species at risk ecology and management. Some municipalities have their own QEP checklist or review criteria for QEP reports involving species at risk or environmentally sensitive areas. Contact your municipality to find out what process they use. It may save you time!

⁴ Accredited professionals are automatically held to a higher level of duty and accountability. Commercial General Liability policy typically only addresses events related to property damage and bodily injury. Errors & Omissions Liability aka Professional Liability ensures there will be adequate funds to pay for damages incurred if the professional's services are deemed to be faulty.

⁵ Reviews can happen at any level of government, including municipal governments. Reviews can also happen if the work forms part of an investigation from a complaint against a QEP. Landowners should be aware that First Nations in Canada are recognized as a level of government and may have local interest in respect to the management or conservation of a given species tied to ceremonial, spiritual or traditional use.

Summary Decision Tool: Let's take a look at how the process might work using the question and answer approach from page 2, in this case we are using the Pacific Water Shrew as an example. On the following pages you will find more detailed information about this species at risk and why it serves as a useful example for dealing with critical habitat on private land⁶.

If the answer to any of these questions is yes, contact your municipality to ensure you identify and address regulations, bylaws and permitting which may be triggered.

The services of a QEP will mostly likely be required. When hiring a QEP, ensure that they have the specific expertise needed. Refer to the QEP Checklist on Page 3

No to step 1 but yes to any of these? Contact your municipality to discuss, and to identify any other bylaws and policies which may be triggered (e.g. bird nesting and instream works timing windows).

The services of a QEP may still be required.

No to all of these? You are probably safe to proceed. But remember you should still discuss your planned activity with your municipality just to be sure (especially since other types of permits may be required).



American Water Shrew illustration by Aleta Karstad, used with permission

⁶ This process is transferrable to most species at risk when working to avoid impacting critical habitat

Introducing the Pacific Water Shrew: A South Coast Species at Risk Example

No guidance document would be effective for making informed, conservation-based choices around land use activities and critical habitat without using a locally relevant species at risk. For the purposes of this document, the SCCP is using a species that uses a range of habitats that have been a common focus of land use and development issues on BC's South Coast. Those habitat preferences include streams, wetlands, forests and riparian areas, and that species is the Pacific Water Shrew (*Sorex bendirii*). With its unique life history, critical habitat characteristics and distribution, the Pacific Water Shrew is an ideal, useful model in working through SARA and critical habitat responsibilities⁷.

World's smallest diving warm-blooded animal!

The only federally designated (endangered) species of water shrew in Canada, the Pacific Water Shrew occurs just past the US border (like many species at risk in BC - and Canada) and is at the northern end of its global range on BC's South Coast. This species of shrew is what is called an "aquatic specialist." As an aquatic mammal, water shrews have evolved a number of unique traits adapted for lengthy periods foraging in flowing and still waters. As their name implies, Pacific Water Shrews are excellent swimmers. Air bubbles trapped beneath the unique fringe hairs of the front and hind feet enable them to run on the surface of the water for up to 5 seconds! The fur of water shrews also has the dual ability to repel water while trapping a layer of air, acting as insulation and reducing heat loss by 50% while swimming. Important if you are an animal with a high metabolic rate that can die from stress and energy loss quickly!



Pacific Water Shrew. Image credit: Denis Knopp

Many species at risk like the Pacific Water Shrew are not found in large numbers, are rarely observed by the public, may range over large distances looking for food, or have populations that are far apart (and as is often the case, disconnected due to land development activities). The Pacific Water Shrew may spend much of its time in less accessible habitat like dense streamside vegetation, using large downed wood for cover and can remain submerged for up to 30 seconds while foraging. If you are a small mammal with poor eyesight that is a tasty treat for raptors, weasels, coyotes and bobcats, you don't want to be seen!

Pacific Water Shrews can be hard to tell apart from other more common shrew species or even rodents like voles and mice. Other than intentionally or unintentionally capturing a Pacific Water Shrew in a small mammal trap or fish or crayfish trap⁸, or your cat possibly bringing one home, it is unlikely that a Pacific Water Shrew will show up on your doorstep. These unique animals are secretive, and other than the types of habitat features we know they like, there may be few if any indicators to let you know they are residing on your property. The story is similar for many species at risk here on the South Coast.

⁷ Pacific Water Shrew recovery strategy available online through the SARA Public Registry and landing page for the BC critical habitat mapping page available through Environment and Climate Change Canada. SARA Public Registry http://www.registrelep-sararegistry.gc.ca/species/default_e

⁸ The Pacific Water Shrew Recovery Team has learned of several water shrews being killed in minnow traps during fisheries surveys. <http://www.sccp.ca/species-habitat/pacific-water-shrew>

What Do Pacific Water Shrew Prefer?

Table 1. Pacific Water Shrew Ecology and Habitat⁹

Distribution (BC)	Found at elevations <1000 m (typically <850 m). Known to occur across the Fraser Valley to Hope (perhaps further east) west to the Howe Sound-Squamish area (perhaps as far north as Whistler). Not presently found on the Sunshine Coast. Not found on Vancouver Island.
Habitat Preferences	<ul style="list-style-type: none"> • Riparian (streamside) areas, especially small systems (e.g. <10 m wide). • Variety of wetland types (swamps, bogs, marshes). • Preference for mature coniferous forests. • Dense understory vegetation with abundant downed wood. • High fidelity for areas within 50 m of the water's edge. • Connectivity to upland forests for overwintering/nesting and/or dispersal. • Will also use channelized drainages (e.g. highway median stream crossings and ditches). • Sources of abundant invertebrate food sources.

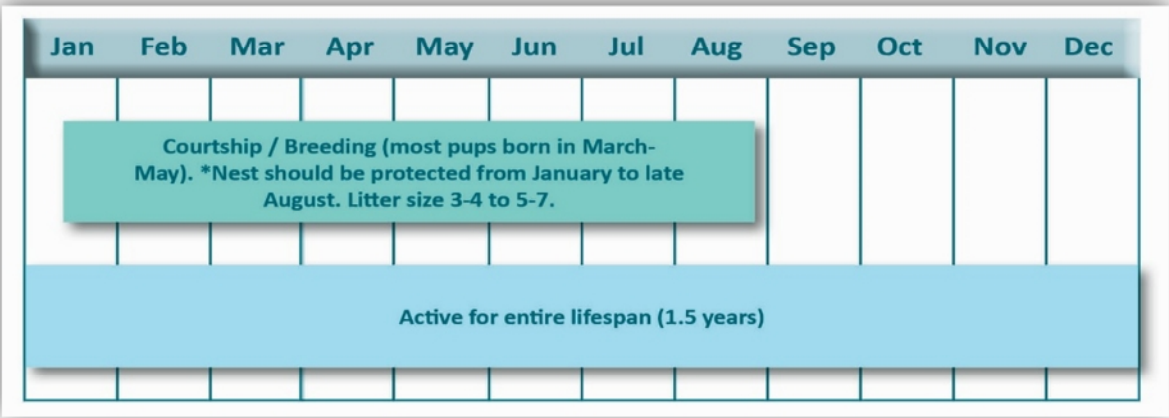


Figure 3 Pacific Water Shrew Life History: Pacific Water Shrew use small dens made in depressions under downed wood and stumps. They may also use small burrows made by other animals.



Figure 2 Examples of the types of aquatic, riparian and upland habitat features preferred by Pacific Water Shrew. Image credit: Pamela Zevit

⁹ Refer back to page 2. Even if your property does not have these features you cannot assume it does not provide some importance for species at risk. Some species at risk like the Barn Owl, Little Brown Myotis bat, Western Toad, or Barn Swallow frequently use man-made structures like porch overhangs, attics, barns and crawlspaces.

Avoiding harmful or destructive activities to Critical Habitat

Why is understanding the potential impacts of an activity important? On private land the Federal Species at Risk Act requires that critical habitat for species classified as endangered and threatened be 'effectively protected' (see Appendix 1.) **The law does not necessarily mean all land use activities are prohibited in order to protect critical habitat, but where activities do occur those activities must avoid damaging or destroying the habitat.** Under SARA, destruction is determined on a case by case basis, *"critical habitat will be considered destroyed if part of the critical habitat were degraded, either permanently or temporarily, such that it would not serve its function when needed by the species."*

The likelihood of an anticipated effect from an activity, and the severity of that effect are important considerations (Figure 4). Such activities may be ones that damage or destroy critical habitat sufficiently to lead to a species at risk dying (e.g. starving from loss of food organisms or preyed on from loss of cover). In turn this may contribute to local populations being lost (extirpated) or cumulatively to extinction for species with limited global distribution¹⁰.

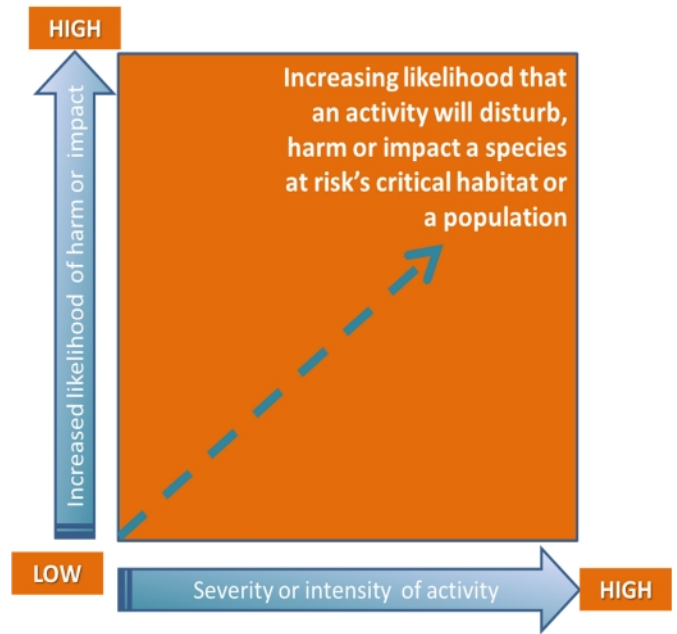


Figure 4 Likelihood of an activity having an impact related to increasing severity.

If you are dealing with a species at risk and or critical habitat issue, the more questions you as a landowner go over with your QEP to determine whether an activity is likely to impact a species at risk, or destroy its critical habitat the better. Here are just a couple of examples of issues to consider:

1. Is there evidence that the species is likely to be present or using a particular part of its habitat when the activity is taking place (e.g. denning and rearing pups under downed wood or in burrows during the summer, see Figure 2 pg. 6).
2. Is there a potential for cumulative effects? This is when multiple activities over time lead to destruction of critical habitat and reduce the potential for a species to survive (e.g. culverting a watercourse which may directly eliminate important habitat features, but also results in negative changes to instream flows and instream cover downstream).

Avoiding harmful or destructive activities to Critical Habitat for Pacific Water Shrew

Sticking with the example of the Pacific Water Shrew, the table on the following pages is designed for you to go over (before or with your QEP) to help determine how likely an activity will be in generating an impact, their significance and how to address them.

¹⁰ This section has been derived from the Province of Ontario's *Policy Guidance on Harm and Harass under the Endangered Species Act (2014)*. Ontario enacted stand-alone legislation on species at risk on 2007 to meet its bilateral agreement responsibilities. <https://www.ontario.ca/page/how-species-risk-are-protected>.

Table 2 Considerations for determining whether a land use activity may be a threat to Pacific Water Shrew¹¹

Threat Type	Example Disturbance Activity	Effects on Pacific Water Shrew	Example Ways to Avoid Harm to Critical Habitat
Changes to streamside areas	<p>Disturbances to riparian vegetation (e.g., forest harvesting, clearing for urban or agricultural uses, building right up to the edge of the riparian area, livestock grazing/trampling).</p> <p>Removal of large, downed wood, shrubs and leaf litter/organic material from the riparian understorey.</p>	<p>Vegetation removal (tree/canopy removal, understorey alteration) leads to elimination of cover needed for nesting and dispersal. Removing cover, especially during colder periods, or during the time pups are being born and reared can result in mortality. Shrews must eat continuously to maintain energy and body temperature, succumbing easily to starvation and hypothermia when deprived of food and cover</p> <p>Warming/drying of the microclimate, debris deposition, and bank erosion (causing sedimentation of the water course) lead to loss of water quantity/quality required to support foraging on aquatic invertebrates.</p> <p>Removal of woody debris leads to loss of nesting, foraging, and cover structures which in turn can lead to increased vulnerability to predation (e.g. domestic pets such as cats¹², as well as native wildlife that naturally prey on small mammals), abandonment of young and decreasing breeding success</p>	<p>Maintain and protect the physical integrity of existing habitat (restrict or avoid activities that may alter the vegetation, or soils, particularly the upper soil layers.).</p> <p>Retain downed wood, especially large diameter logs or rootwads (e.g., stems ≥ 6 cm diameter minimum, but preferably logs ≥ 12 cm diameter with bark still attached)</p> <p>Retain important “microclimate” features such as understorey vegetation, leaf litter and moderate to high closed canopy cover through coniferous, deciduous, or mixed stands</p> <p>Fence off important habitat features to reduce access.</p>

¹¹ For detailed information see: the Recovery Strategy for the Pacific Water Shrew in Canada, Best Management Practices Guidelines for Pacific Water Shrew in Urban and Rural Areas, available through the SCCP via the Pacific Water Shrew Species Profile page: <http://sccp.ca/species-habitat/pacific-water-shrew>.

¹² The Stewardship Centre of BC has an excellent set of guidelines for fencing options for protecting critical habitat for species at risk, as well as ways to reduce predation risk from free ranging domestic and feral cats. See: <http://stewardshipcentrebc.ca/resources/>

Threat Type	Example Disturbance Activity	Effects on Pacific Water Shrew	Example Ways to Avoid Harm to Critical Habitat
Changes to Instream Habitat	<p>Alteration of watercourse/wetted areas (e.g., ditching/channeling, culverting, ditch cleaning)</p> <p>Installing or removing instream structures such as beaver dams, man-made weirs and diversions, or habitat enhancement structures.</p>	<p>Alteration of water courses leads to changes in water quantity, flow and sedimentation rates and patterns that are required to support the prey such as fish, amphibians and aquatic invertebrates Pacific Water Shrew prefer. Instream barriers can impact access to foraging areas.</p> <p>Suddenly removing structures like beaver dams, old water intake dams or weirs can lead to sudden flooding of watercourses and debris and deposition of sediment covering foraging areas, it can also resulting in intensive scouring and channelization of watercourses, and loss of habitat.</p>	<p>Maintain hydrology and natural stream structure.</p> <p>Maintain water quality and physical integrity of instream habitat</p> <p>Retain instream cover like downed wood, especially large diameter logs or rootwads (e.g., stems ≥ 6 cm diameter minimum, but preferably logs ≥ 12 cm diameter with bark still attached) and debris jams</p> <p>Ensure instream projects for fish enhancement are passible by Pacific Water Shrew</p> <p>Remove beaver dams and artificial structures like weirs or diversions in phases to reduce siltation and excessive scouring effects.</p>
Environmental Contamination	<p>Release of pollutants into or adjacent to water courses (e.g., herbicide/pesticide application, road and agricultural run-off)</p>	<p>Changes in water chemistry lead to loss of water quality required to support foraging on aquatic invertebrates</p>	<p>Avoid using pesticides of any form within riparian areas (either herbicides or fungicides for removing vegetation, including invasive plants or rodenticides for killing rodents).</p>
Loss of Connectivity	<p>Installation of impassable barriers (e.g., multi-lane roads with no culverts) Removal of linear cover or connecting features e.g. riparian vegetation, downed wood</p>	<p>Elimination of access between foraging, dispersal, and breeding habitats results in loss of habitat function and reduced gene flow as individuals and populations become isolated</p>	<p>Because of the Pacific Water Shrew's biology, habitat must remain well-connected. As an example along streamside habitat, riparian areas of at least 50 metres wide connected for at least 75% of the stream length are critical</p>

Threat Type	Example Disturbance Activity	Effects on Pacific Water Shrew	Example Ways to Avoid Harm to Critical Habitat
Proximity Effects	Structures or activities adjacent to or within the riparian zone which generate high intensity artificial lighting, constant noise and or ground disturbance (e.g. pile driving, soil compacting)	<p>Due to its biology, the Pacific Water Shrew is active around the clock, most of the time foraging for food. When raising its pups this activity intensifies. While much of the shrew's hunting occurs instream, they also forage along adjacent riparian areas, and use streamside areas for drying their fur, resting and raising their young.</p> <p>Bright lights and loud noise, especially at night, or activities that continually disturb the ground may force the Pacific Water Shrew to abandon an area to avoid the disturbance, potentially forcing it to retreat to areas with less cover or food potential. These activities can also affect the food that the shrew preys upon (especially artificial lighting and noise which can negatively affect fish and amphibians as well as insects)</p>	Most of the Pacific Water Shrew's life history occurs within 50 metres of the aquatic habitats they use (though they do utilize areas beyond that), avoidance of these types of harmful and persistently disturbing activities within or next to critical habitat, along with an additional buffer if possible should be the objective.

Key considerations to remember:

- Time of year when activity may impact more
- Length of time the activity occurs over
- Potential for permanent footprint or effect from the activity

Prolonged disturbance increases the likelihood that individuals or populations in the affected area will be impacted, displaced or suffer direct or sub-lethal stress or harm. Activities which create permanent loss of habitat or connectivity can lead to local extirpation events with reduced or eliminated chance for recovery unless significant intervention occurs. Taking note of a species' life history, timing for activities and understanding the ecology and patterns of habitat use by species like the Pacific Water Shrew is key to reducing harm to its critical habitat. If effective protection cannot be attained, and harm cannot be avoided, special permitting and or restrictions to land use can be triggered.

Not a One-size-fits-all Approach:

The buffer objectives, beneficial practices and approaches reflected in the preceding table are based on the Pacific Water Shrew's life history, objectives within its Recovery Strategy as well as established guidelines created to protect this species. They are designed to provide the best available information to avoid impacts. It needs to be acknowledged however that for a species like the Pacific Water Shrew (and many other species at risk) critical habitat effective protection is not going to be a one-size-fits-all approach. The impacts of activities vary as does the condition of existing critical habitat on or near your property. Some issues will be unforeseen or are beyond a landowner's control. Many landowners may find themselves in a position where avoiding impacts to critical habitat may be difficult or unattainable. That is why it will be important to be as thorough as possible, retain the appropriate expertise and implement the best possible approach to reduce unintended consequences or foreseen impacts.

A Shared Responsibility

At present BC does not have stand-alone legislation for species at risk (save for a handful of species). The province is only now developing a BC Species at Risk Act. And while a recent court case in Quebec demonstrates¹³ that the federal government, and the courts are willing to invoke and uphold the protection of species at risk and their critical habitat on private land, for the most part the focus remains on SARA's "stewardship first" approach. That is why taking a proactive role as a private land owner is so essential in addressing the protection of critical habitat.

And remember...

Privately owned lands provide important habitat for almost half of federally listed species at risk in British Columbia.

Identification of critical habitat on private land does not necessarily restrict further development. But it is a reminder of the responsibility to protect the important characteristics of these areas. One of the best ways to achieve that is to engage with your municipality, regulators and QEPs at the beginning of the process. By employing expert advice and ensuring all bylaws and regulations are being addressed the risk to critical habitat and associated liability issues can be reduced or avoided.

The great thing is that many of the practices and approaches that protect habitat for species at risk also contribute to improved property values, enhanced soil and water quality, increased crop production and other benefits that directly improve our individual and community health and well-being. As a landowner being part of the stewardship and recovery efforts for species at risk on BC's South Coast means sharing in those benefits for the long-term.

CBC News · Posted: Jul 10, 2018 7:39 PM ET | Last Updated: July 10



The Western chorus frog is considered threatened in Quebec. (Radio-Canada)

A Federal Court judge has ruled the federal Environment Ministry has the right to intervene in private development projects in the interest of protecting biodiversity — in this case, the Western chorus frog.

¹³ Federal Court protects western chorus frog, restricts development <https://www.mccarthy.ca/en/insights/blogs/canadian-era-perspectives/federal-court-protects-western-chorus-frog-restricts-development>

Appendix 1: The Species at Risk Act (SARA) 101

The Canadian Species at Risk Act or “SARA” came about from the Canadian Biodiversity Strategy, developed from Canada’s commitments to the United Nations Convention on Biological Diversity. The Act provides federal legislation to prevent species (wildlife and plants) from becoming extinct and approaches to ensure they recover.

Three Government of Canada departments are responsible for SARA:

1. Fisheries and Oceans Canada who oversee fish and wildlife at risk living in marine and some freshwater environments (i.e. fish, reptiles, marine mammals and molluscs)
2. Parks Canada who oversee wildlife at risk within Canada’s national parks, historic sites, and marine conservation areas and,
3. Environment and Climate Change Canada who holds responsibility for all other wildlife at risk (e.g. terrestrial or land-based plants and wildlife including migratory land and waterbirds)

What is SARA For?

The purposes of the Act are to prevent species, subspecies, and distinct populations indigenous to Canada (also referred to as native or extant species) from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species, and encourage the management of other species to prevent them from becoming at risk.

A recovery strategy¹⁴ outlines what is scientifically required for the successful recovery of a species at risk. This includes an identification of its critical habitat and what needs should be addressed. An action plan¹⁵ then identifies those specific actions needed to help in the species recovery as identified in the recovery strategy.

What is Critical Habitat?

Under S.41(1)(c) of SARA, recovery strategies must include: *An identification of the species' critical habitat (CH), to the extent possible, based on the best available information, including the information provided by COSEWIC...and (c.1) a schedule of studies to identify CH, where available information is inadequate.*

Complementary Federal Legislation: While the focus for protecting species and critical habitat on private lands designated under SARA is on effective protection through voluntary actions first, species that are listed under SARA and that are also listed as Migratory Birds under the Migratory Birds Convention Act (MBCA) their nests and eggs are automatically protected anywhere they are found in Canada, regardless of land ownership, including surrounding ocean waters.



The iconic Great Blue Heron (*fannini* subspecies) is an example of a bird that is listed under SARA and is protected under the MBCA in BC. Image credit: Ross Vennesland

When it comes to Canada’s fisheries resources, DFO has adopted the “Default Listing Position.” This means that unless DFO can provide a qualifying argument as to why a proposed fish species to be listed under SARA should not be listed, its critical habitat is automatically protected wherever it occurs.



The Nooksack Dace is a species of non-game freshwater fish whose critical habitat (e.g. instream and riparian habitat) is automatically protected as a SARA listed species. Image credit: Mike Pearson

¹⁴ http://www.registrelep-sararegistry.gc.ca/sar/recovery/recovery_e.cfm

¹⁵ http://www.registrelep-sararegistry.gc.ca/sar/recovery/action_e.cfm

The Species at Risk Act describes critical habitat as: “....the habitat that is necessary for the survival or recovery of a listed wildlife species **and** that is identified as the species’ critical habitat in a recovery strategy or in an action plan for the species¹⁶.” Under S. 58 of SARA, automatic protection is afforded to critical habitat on Federal lands (e.g. lands owned for the use of various federal government departments like Environment and Climate Change Canada offices on Westham Island, Coast Guard stations like the one at Kitsilano, Department of National Defence lands like those in Chilliwack or Vancouver, Federal Prisons, First Nation’s Reserves etc.).

Effective protection

While SARA applies to all lands in Canada, critical habitat on non-federal lands is not automatically protected. Instead (under S.61) it is expected that land owners and land managers (including those that oversee provincial, regional, municipal and private land) will apply approaches that effectively protect critical habitat. These are seen as “measures and mechanisms that can reasonably be expected to protect critical habitat from alterations that would reasonably be expected to reduce the critical habitat’s capacity to provide for the recovery and survival of a species at risk¹⁷.”

For private lands, SARA sets a six month window for protection of critical habitat of aquatic species (after it has been identified in a finalized SARA recovery strategy or action plan).¹⁸ For other (non-aquatic) species (e.g. species like the Pacific Water Shrew), a variety of approaches to address critical habitat are provided under the Act¹⁹.

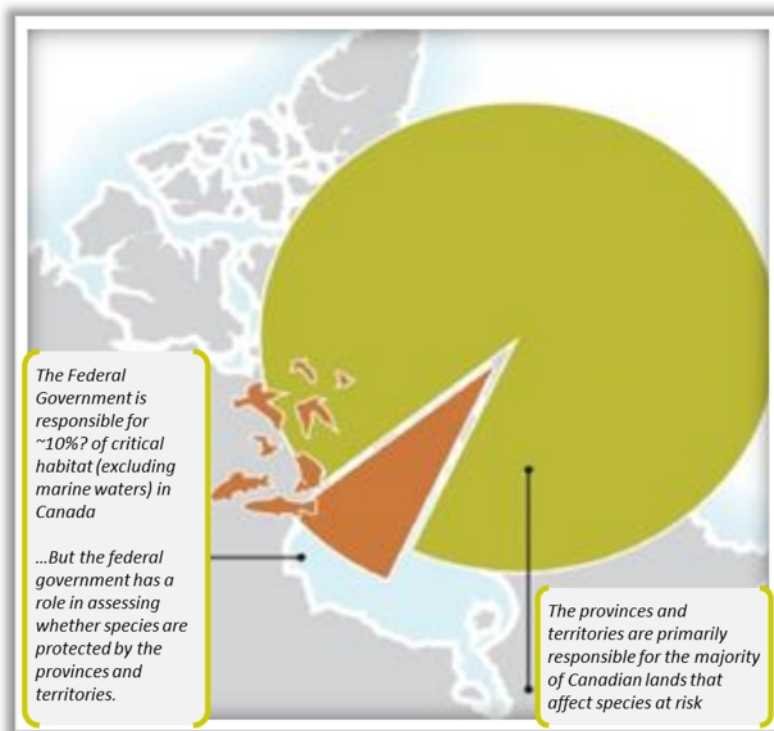


Figure 5 Species at Risk on Non-federal Lands versus Federal Lands. While SARA applies to all lands in Canada, the provinces and territories are responsible for the majority of land in Canada and by extension effective protection of species at risk found on them. Source: Environment and Climate Change Canada

In determining whether critical habitat is effectively protected, the federal government uses a four-step process called a *Critical Habitat Protection Assessment (CHPA)*²⁰. Subsection 61(1) of SARA provides that “no person shall destroy any part of the critical habitat of a listed endangered or threatened terrestrial species at risk that is on non-federal lands.”

¹⁶ “The important part of the definition is the ‘and’ – it [critical habitat] does not become “legally identified” until the final version of the recovery strategy (or action plan) is posted on the SARA public registry.” Source: MOU on Critical Wildlife Habitat, Private Forest Lands Association Annual General Meeting. Sharon Hadway & Chris Ritchie June 5, 2014 <http://www.slideshare.net/BCPFLA/critical-wildlife-habitat-mou-presentation> .

¹⁷ Species at Risk Act: Program Guidance A Guide to the Critical Habitat Provisions of the Species at Risk Act. November 2004

¹⁸ SARA contains a prohibition against destroying any part of critical habitat, but also provides other options for protection. Critical habitat of these species must be protected by one of the following methods: the application of the SARA prohibition by ministerial order; other legal means under SARA such as a conservation agreement, other permits; or by other federal legislation.

¹⁹ “In most situations, provincial laws will provide protection for critical habitat. Alternatively, the SARA prohibition can be applied by an order from the Governor in Council, or other provisions in, or measures under, federal legislation (including SARA) can be used. The Federal Government Regulatory Policy contains a commitment to consult the public on orders from the Governor in Council. SARA also sets out how critical habitat is to be protected in a number of other specific cases, such as critical habitat found on private land which is located within a Migratory Bird Sanctuary.”

²⁰ Species at Risk Policies - Policy on Critical Habitat Protection on Non-federal Lands - 2016 [Proposed]

http://registrelep-sararegistry.gc.ca/document/default_e.cfm?documentID=2987

What happens if the gaps cannot be filled and effective protection is not achieved? On non-federal lands, SARA requires the Minister of the Environment to recommend to the Governor in Council that a protection order (sometimes referred to as a “Safety Net” order) be made to protect critical habitat that remains unprotected. The Minister of Environment and Climate Change Canada must recommend that the order be made if the Minister is of the opinion that the laws of the province do not “effectively protect the species or the residences of its individuals.” The intent of the protection order is to provide the ultimate federal regulatory protection to species at risk and their residences (if the species at risk is a non-aquatic species or not a migratory bird and with the exception of Species of Special Concern).

This is typically a last resort though and there are a variety of actions landowners can take to ensure effective protection is accomplished without preventing an intended use of a property. As well, depending on the species and location of critical habitat, provincial laws or municipal bylaws may apply. The Minister may also defer the order if there is sufficient and reasonable steps being demonstrated to actively ensure protection²¹.

What about Compensation?

To date the use of protection orders has been limited and is expected to remain so. Remember that **the focus of SARA on private lands is voluntary efforts to attain effective protection for critical habitat**. But in the rare instance where that cannot be attained or negotiated and regulatory restrictions on land use to protect the critical habitats of threatened and endangered species occurs, Section 64.(1) of SARA has a provision to allow compensation to those whose property is adversely affected²². Payments under SARA are intended to provide for landowners that would otherwise bear the full burden of restrictions on land use. However, as of the date of this document, this component of SARA has never been triggered and it is uncertain where or how this section of the Act will be applied, especially given the recent court ruling referenced on page 11.

Don't forget about “candidate” critical habitat

While this guide focuses on identified critical habitat, species at risk conservation is not a static process. Recovery actions and objectives are continually being reassessed. Recovery plans (including critical habitat) are intended to be updated every five years. Even if your property is not affected by a species' finalized recovery plan when it was issued, new research or recent inventories may have been conducted since it was published that have not been released publicly. Provincial and federal species at risk recovery teams may be able to provide insight into whether your property may be affected by proposed (candidate) critical habitat that has been identified for future recovery planning updates.²³

²¹ As an example under S. 11 of SARA the federal government can enter into a conservation agreement to benefit a species at risk or enhance its survival in the wild. The agreement must provide for the taking of conservation measures consistent with the purposes of the Act, and may include measures with respect to protecting the species' habitat, including its critical habitat.

²² 64.(1) The Minister may, in accordance with the regulations, pay compensation to any person for losses suffered as a result of any extraordinary impact of the application of section 58, 60 or 61 or an emergency order identifying habitat necessary for the survival or recovery of a wildlife species.

²³ Recovery Team Chairs or Species Contacts by species: http://www.registrelep-sararegistry.gc.ca/sar/recovery/team_ch_e.cfm

Appendix 2: Finding Critical Habitat Information Online

Critical habitat is defined wherever possible in finalized federal recovery strategies. You do not have to be a species at risk specialist or government employee to determine if your property may be affected by or adjacent to critical habitat. Recovery strategies can be accessed online or downloaded from the SARA Public Registry²⁴.

In 2016, the Government of Canada also began posting image files as well as interactive map files of define critical habitat found in recovery strategies that can be overlain on aerial photos for greater ease of use²⁵.

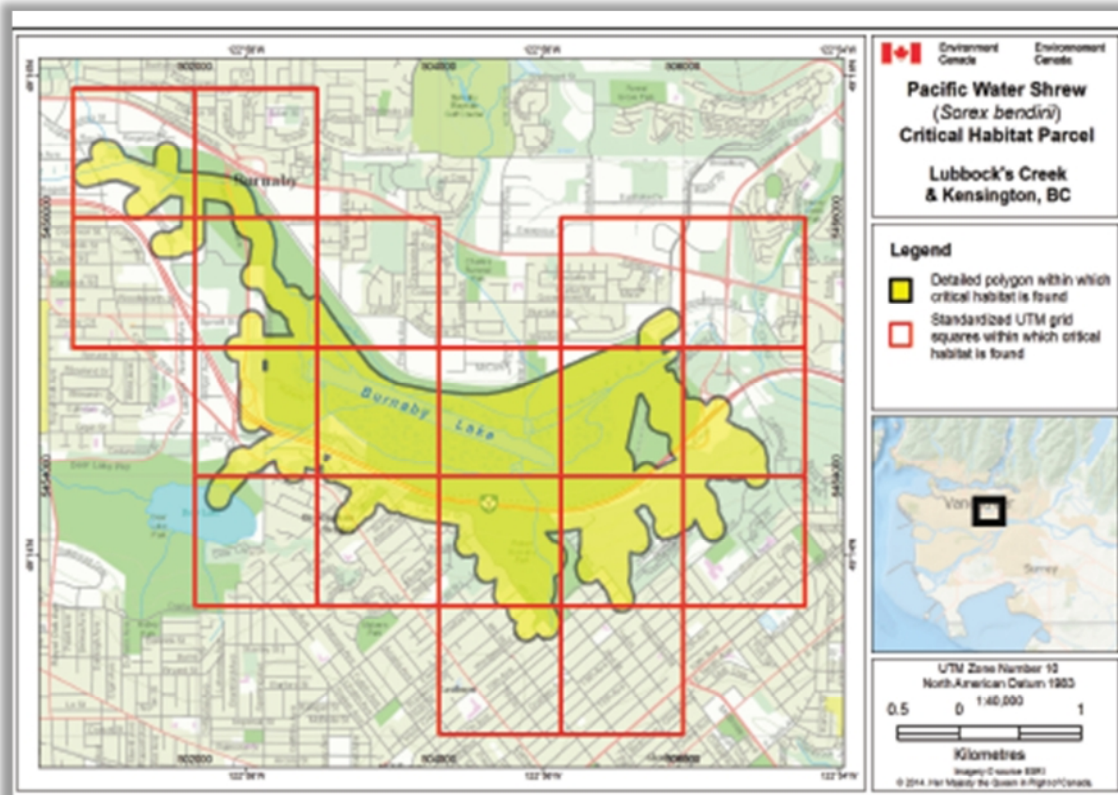


Figure 6 Example critical habitat mapping from the Pacific Water Shrew recovery strategy and publicly available online mapping files. Source Environment and Climate Change Canada

²⁴ <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1>

²⁵ Critical Habitat for Species at Risk, British Columbia <http://donnees.ec.gc.ca/data/species/developplans/critical-habitat-for-species-at-risk-british-columbia/?lang=en>

The BC government supports the BC Conservation Data Centre (BCCDC)²⁶ which is a central portal for provincial species and ecological community information. Through the “Species and Ecosystems Explorer” database, you can review the report for each species listed, as well as check to see if there is a general record of it occurring in your municipality using the online mapping tool (“Mapped Known Locations”) that comes with each species’ profile. Exact locations of species at risk occurrences are masked in order to protect vulnerable species from poaching, collecting or other potential harm. If you want to obtain detailed location or background info beyond what is shown, click on the location point, then on “Detailed Map and Report”. This will open up the Province’s “iMap” system. Again the information will be masked to protect the species, but you can submit a request to the BCCDC obtain the detailed information, especially if you are the property owner or legal representative. Many QEP’s utilize iMap as well as Species and Ecosystems Explorer for their clients as part of their initial search.

The important caveat is that the BCCDC maps (like federal critical habitat maps) are based on available information. Data is being collected continuously and often faster than many online systems can update and display it. Provincial and federal government recovery teams are identifying species occurrences and critical habitat for up-and-coming recovery strategies, recovery strategy updates and action plans on an ongoing basis.

Still, a thorough and complete investigation of all available information is in your best interest. If you do not get any results back, it does not mean that there are not any species at risk or other species that may affect land use activities on your property. The BCCDC notes that “Absence of occurrence records in an area of interest does not necessarily mean that there are no species or ecosystems at risk present; only that there are none currently recorded in the database.”

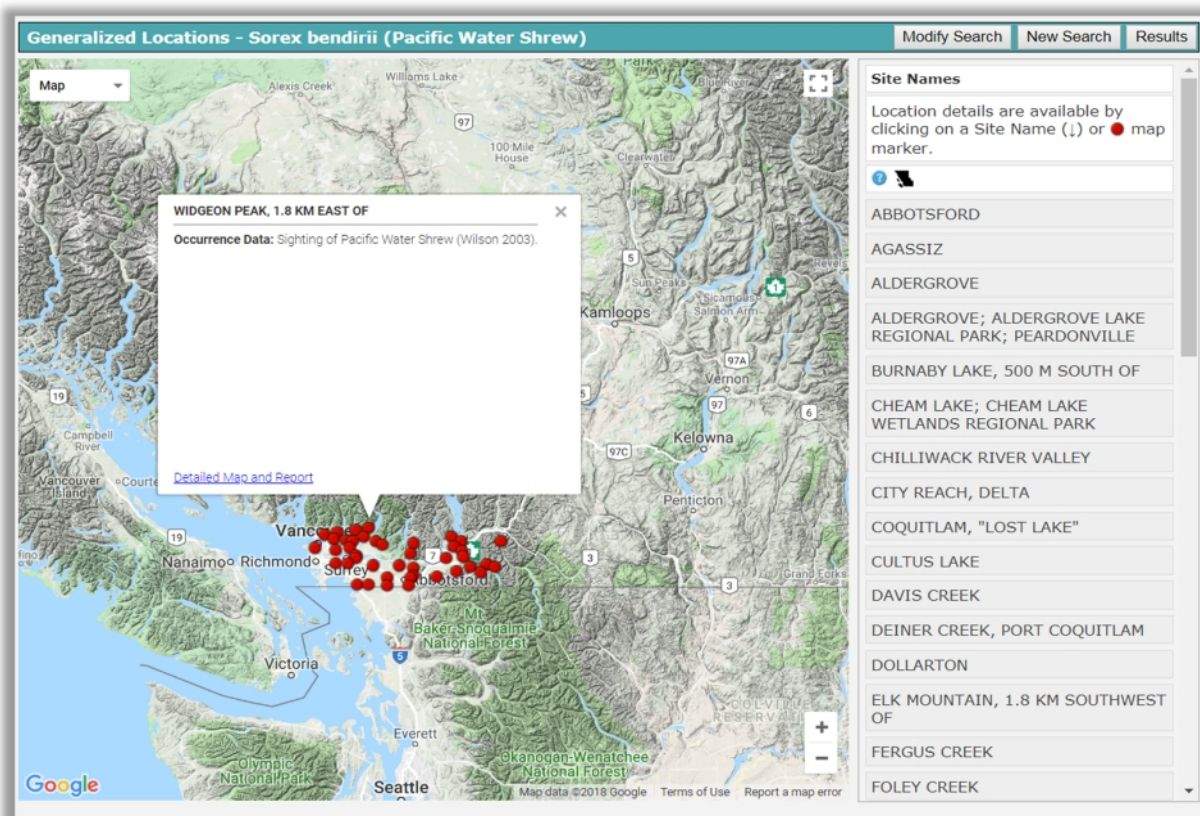


Figure 7 Example generalized mapping information available through the Province of BC’s Conservation Data Centre

²⁶ <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/conservation-data-centre/explore-cdc-data>

Appendix 3: Links to Key Resources for Species at Risk Conservation on the South Coast



SARA Public Registry: Developed as an online service, the Public Registry has been accessible to the public since proclamation of the Species at Risk Act (SARA). The website gives users easy access to documents and information related to SARA

Find out more... <http://www.registrelep-sararegistry.gc.ca/default.asp?lang=En&n=BEDADDA3-1>



Provincial Actions on Species at Risk: In order to protect and improve the management of species at risk in B.C., the Province uses legislative tools and outlines high-level strategic actions. In 2017, government mandated the enactment of an endangered species law, and this legislation is now under development.

Find out more... <https://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/legislation>



Develop With Care: Best management practices are guidelines that help development projects meet necessary legislation, regulations and policies. For example, legislation might dictate that projects cannot harm a stream, while best management practices provide practical methods to avoid harming a stream. Developers and other professionals can rely on best management practices to help improve operations because they're based on science and they've been proven to work. They also help developers act as environmental stewards – completing projects on land or water in a way that doesn't interfere with living resources and their habitats.

The Province of BC has a number of specialized guidance documents housed under the "Natural Resource Best Management Practices" resource pages: Develop with Care 2014 Environmental Guidelines for Urban and Rural Land Development, Develop

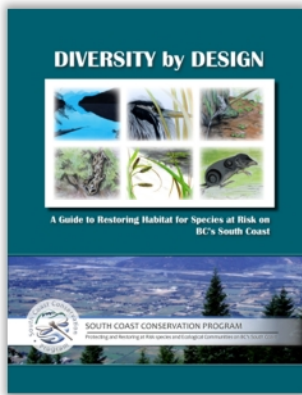
With Care Species factsheets, Develop With Care Special Guidelines, Best Management Practices for Amphibian and Reptile Salvages in British Columbia, Wildlife Guidelines for Backcountry Tourism/Commercial, Best Management Practices for Bats in British Columbia, Guidelines for Translocation of Plant Species at Risk in British Columbia, Wetland Ways: Interim Guidelines for Wetland Protection and Conservation in British Columbia, Standards and Best Management Practices for Instream Works. Find out more...

<https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices>



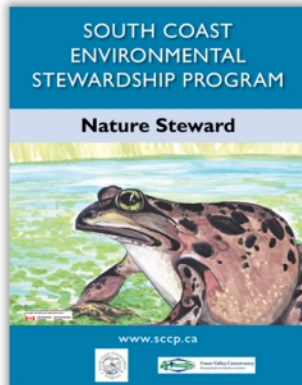
Municipal EDPAs: One of the first comprehensive Development Permit Area bylaws and guidance resources to address species at risk critical habitat on the South Coast was developed by the City of Surrey. Their "Sensitive Ecosystems Development Permit Area"(SEDPA) is composed of two Development Permit Area types, the "Streamside Protection DPAs" and the

"Green Infrastructure Areas DPAs". The objective of the SEDPA ranges from protecting aquatic habitat, ecosystems processes, critical habitat for species at risk, integrate natural assets and biodiversity into urban areas, protect tree health and slope stability, provide for drainage access and create opportunities for public access to natural areas. Find out more... <https://www.surrey.ca/city-services/20748.aspx>



Diversity by Design: Diversity by Design was developed by the SCCP with the intention that it would fulfill an identified need for science-based guidance for stewards, land managers, and practitioners involved in habitat restoration and management activities that either directly target or indirectly affect species and ecosystems at risk on BC's South Coast. The 'DxD' series is made up of four documents, the 'Guide', Module 1 - Wetland Communities, Module 2 - Forest Communities and Module 3 - Stream and Riparian Communities.

Find out more... <http://sccp.ca/projects/restoration-planning-diversity-design>



Nature Steward Program: This program developed by the SCCP and our partners at the Fraser Valley Conservancy encourages landowners to actively play a role in stewarding and improving wildlife habitat on their land. This can include monitoring, maintenance, enhancement, or protection for wildlife including species and ecosystems at risk. Why Stewardship? Environmental Stewardship has been defined as the responsible use and protection of the natural environment through conservation and sustainable practices. It promotes the idea that we all have a shared responsibility to help conserve and responsibly manage our ecological wealth through sustainable practices which minimize our impact on the environment. Find out more... <http://sccp.ca/projects/nature-stewards-program>



Fraser Valley Conservancy: The FVC promotes the acquisition and preservation of areas with ecological and historic value in the Fraser Valley. Their vision is to be a leader in environmental and heritage conservation

through partnerships, education and action. The FVC collaborates, develops and completes research and mapping initiatives with local and regional governments to identify and target key priority areas to protect. They also support private landowners and communities in stewardship activities through their outreach programs. Find out more... <http://fraservalleyconservancy.ca/>



Stewardship Centre of BC Stewardship Practices Guides: The Stewardship Practices guides for species at risk and wildlife presents options and examples of good stewardship practices that address major threats to species impacted. The guides encourage

people to take voluntary stewardship actions, called stewardship practices, to safeguard wildlife and species at risk. Stewardship can be broadly defined as an ethic that promotes the responsible use, protection, and management of the natural environment through conservation and sustainable best practices. Find out more...

<http://www.speciesatriskbc.ca/guides>



Precious Frog: The Oregon Spotted Frog, *Rana pretiosa* (Precious Frog) is the most endangered amphibian species in Canada. Found only in British Columbia, this frog was listed as critically endangered under the federal Species at Risk Act and is red-listed in British Columbia. The Canadian Oregon Spotted Frog Recovery Team (OSFRT), a diverse group of biologists and land managers, was formed in 1999 to prepare a Recovery Strategy for the species which was published in February 2012 by the Province, and adopted in 2016 by the Government of Canada. The Recovery Team coordinates efforts to assess, conserve, manage and recover Oregon Spotted Frogs in Canada. Find out more... <http://www.preciousfrog.ca/>



BC Community Bat Program/South Coast Bat Conservation Society: The success of identifying roost sites for bats at risk and the enthusiasm of residents to report their bats, conserve their roost sites or consider sensitive methods for removing bats from their homes continues to drive the success of his program. The activities in each region depend on the level of funding, community partners, and the priorities of the area. Metro Vancouver-Squamish: South Coast Bat Conservation Society (SCBats) is an organization for bat conservation on the South Coast of British Columbia focusing on bat research, conservation and education. Find out more... <https://www.bcbats.ca/> | www.scbats.org



Coastal Partners in Conservation: The Coastal Partners in Conservation Society is dedicated to science-based conservation actions to protect, restore and monitor species and their habitats. We emphasize collaboration between biologists, governments, First Nations, NGOs, businesses, landowners and citizens, to ensure healthy species populations and habitats for future generations. Find out more... <https://www.coastalpartners.ca/>



AWARE – Association of Whistler Area Residents for the Environment: AWARE is a member driven charity that works to protect the natural environment in Whistler and the Sea to Sky through advocacy and speaking up about key environmental issues, while empowering others to do the same through science-based research and education. We work towards a vision of a knowledgeable community that is engaged and empowered to preserve and enhance the environment on which it depends. Find out more... <http://www.awarewhistler.org/>



Stewardship Pemberton Society: Our mandate is to connect community to nature. Our mission is to encourage the protection, restoration, and long-term sustainability of the natural environment through education, cooperation, and community involvement. Find out more... <http://www.stewardshippemberton.com/>

**SUNSHINE COAST
WILDLIFE PROJECT**

Sunshine Coast Wildlife Project: We are a small group of biologists working to conserve the Sunshine Coast's precious natural heritage for generations to come. Since 2006, we have been working with community partners to help conserve wildlife and their habitats. Find out more... <https://www.coastwildlife.ca/>

