**Expression of Interest (EOI) for targeted projects that support SARA listing and recovery planning**

**SARA Consultation, Cooperation, and Accommodation Project**

**Purpose of Funding**

Environment and Climate Change Canada (ECCC) has heard from many Indigenous communities and organizations that they wish to undertake targeted short-term activities that will help with terrestrial species at risk (SAR) recovery actions, address immediate threats to SAR, and provide information that will fill knowledge gaps in listing considerations and recovery document development for specific species. This EOI process will help ECCC to provide federal funding, administered by CIER, to support as many projects of this type as possible.

Note: For those interested in learning about ECCC funding that supports larger species at risk projects (e.g., multi-species, multi-year), visit the ECCC website or contact:

* Laura Machial for questions related to Southern Mountain Caribou (Laura.Machial@ec.gc.ca)
* Undiné Thompson for questions related to any other species (Undine.Thompson@ec.gc.ca)

**Overview**

* The purpose is to fund targeted short-term projects that directly support Indigenous peoples’ and organizations’ meaningful participation in listing, recovery planning and/or recovery actions for terrestrial species at risk (see appendix A&B for details).
* Projects can include any SARA listed terrestrial species at risk however, priority will be given to proposals focusing on the species undergoing listing consultation and recovery planning within the next two years. See appendix C for the list of species.
* Applicants may submit more than one expression of interest per intake.
* Should funds allow, there will be additional calls for expressions of interest.

**Requirements**

* Expressions of Interest must be received by March 11th, midnight local time.
* Please use the subject line “SARA Expression of Interest” when making your submission.
* Inquiries and submissions can be made to Kate Hewitt, Project Manager at the Centre for Indigenous Environmental Resources (khewitt@yourcier.org) who is working in partnership with ECCC to distribute these federal funds.
* Project amounts should be between $5,000 - $15,000 and use federal funding rates where applicable (see example and federal rates below)
* All applicants will be notified of their application status in March 2022.
* A brief final report that includes a table of expenses and description of project outcomes will be due by February 15th, 2023.

**Primary Contact Details for Indigenous Community or Organization**

|  |  |
| --- | --- |
| Name of Community or Organization |  |
| Contact Name |  |
| Contact Title |  |
| Contact Email |  |
| Contact Phone Number |  |
| Street Address, City, Province/Territory & Postal Code |  |

\*Contact identified will be the primary contact for all EOI correspondence

**Project Title**

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**Project Timeframe** (approximate start date & end date):

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**What Species at risk is/are the focus of project activities? If other species are focused on in this work, please list.**

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**Project Purpose** (approx. 4 – 5 sentences):

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**Funding Request**

Please include a list of any partners and other financial contributions. At least 20% matching funds is required. It can include in-kind contribution (e.g., staff time, administration, venues, catering). As this is ECCC funding, other federal government funding cannot be used as match.

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| **CIER Cash** | **Other Cash** | **In-Kind** |
| $ | $ | $ |

**Past ECCC Funding**: If you have received funding from ECCC related to species at risk in the past three years, please provide the project title(s) and brief description: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project Activities**

We need to understand how each activity will directly contribute to listing consultation and/or recovery planning (see appendices for details). While it is not required, we encourage recipients to explain how they anticipate their project activities and timeframes would align with ECCC’s recovery planning goals for the specific species (see appendix C&D for details). Categories and example activities for this funding include the following:

* Data collection to provide to ECCC for use in recovery documents: surveying, monitoring, mapping (Note, if those collecting and sharing appropriate information wish to formalize how this is done, ECCC is open to exploring approaches that can work for everyone (e.g., MOUs, protocol agreements, data sharing agreements).
* SAR specific activities: community identified activities that align with recovery goals, address known knowledge gaps, activities identified in the schedule of studies found in recovery documents and/or those identified in appendix D.
* Building capacity (e.g., establish a species at risk leadership committee).
* Education and outreach to increase awareness and involvement in species at risk conservation and recovery.
* Training in and/or development of methods and tools (e.g., species at risk database, guidance) that support the activities listed above.
* Direct actions that reduce threats to species and their habitats (e.g., signage, fencing, traditional burning, planting native species).

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| **Project Activity** | **Activity Description****(what)** | **Activity Timeframe****(approximate start date & end date)** | **Description of Expected Results****(goal)** | **Amount of ECCC funding requested** |
|  |  |  |  |  |
|  |  |  |  |  |
| *Example 1:**Immediate threat reduction* | *Example 1:**Install fencing and signage to help protect nest sites* | *Example 1:**April 1st – May 31st*  | *Example 1:**People will learn about x species and will stay out of its nesting sites improving the survival and recovery of the species* | *Example 1:****Total request: $x*** *$x for fencing materials**$x at $x/hour for workers to install fencing and signage**$x for graphic design and printing of signage**$x for engaging community on signage design and promoting awareness through: social media, newsletters, press release* |
| *Example 2:**Community engagement* | *Example 2:**Online workshop/community meeting, newsletter, and social media posts to enhance community support and understanding of x and y species recovery in the territory.*  | *Example 2:**April 1st – June 15th*  | *Example 2:**Community will be well informed and supportive of recovery planning for x and y species. Community members will be identified to participate in recovery planning for these species in future.*  | *Example 2:****Total request: $x****Staff time at $x/hour* *Prizes for workshop participants - $x* |
| *Example 3:**Monitoring* | *Example 3:**Purchase and installation of monitors for x species and associated training*  | *Example 3:**May 1st – July 15th* | *Example 3:**Information and understanding of x species is increased and data will be shared with ECCC to inform recovery planning. Increased knowledge and skills within community to conduct monitoring* | *Example 3:****Total request: $x*** *X cameras at $x/per camera**Technician at $x/hour for x hours for camera installation, training and data analysis*  |

**Information Sharing Details (If applicable for those collecting and sharing appropriate data)**

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| --- | --- |
| Anticipated month that information will be shared | e.g., June |
| Anticipated format for sharing information | e.g., email summary, written report, spatial data |
| Request for formalized information sharing agreement and format if known | If yes, e.g., Community’s existing information sharing agreement template is attached, Community wishes to co-develop agreement with ECCC |

**Federal Funding Rates**

Funding to support a person’s time to participate:

We understand that communities’ policies and protocols pertaining to honoraria may differ and they may be higher or lower than the maximum amounts identified by the federal treasury board as listed below or they may take other forms (e.g., appreciation gifts). Please include in your budget request what is appropriate for your community. If you would like to discuss please contact Kate Hewitt, Project Manager at the Centre for Indigenous Environmental Resources (khewitt@yourcier.org).

Elders and Knowledge Holders - $500/day, $250/half day
All other participants - $350/day, $175/half day

Travel and hospitality for in person meetings:

***Kilometric Rates***

|  |  |  |  |
| --- | --- | --- | --- |
| **Province/Territory** | **Cents/km****(taxes included)** | **Province/Territory** | **Cents/km****(taxes included)** |
| Alberta | 51.0 | Nunavut | 60.5 |
| British Columbia | 56.0 | Ontario | 57.5 |
| Manitoba | 52.0 | Prince Edward Island | 53 |
| New Brunswick | 54.5 | Quebec | 55 |
| Newfoundland and Labrador | 58 | Saskatchewan | 51.5 |
| Northwest Territories | 64.5 | Yukon | 63 |
| Nova Scotia | 55 |  |  |

***Allowances***

| **Canadian $ (taxes included)** | **Canada** **& USA** | **Yukon** **& Alaska** | **N.W.T.** | **Nunavut** |
| --- | --- | --- | --- | --- |
| **Private non-commercial accommodation allowance** |
| Day 1–120 | 50.00 | 50.00 | 50.00 | 50.00 |
| *Day 121 onward* | *25.00* | *25.00* | *25.00* | *25.00* |
| **Meal allowances** |
| *breakfast - 100% (up to 30th day)* | *21.35\** | *22.90* | *24.80* | *28.25* |
| *lunch - 100% (up to 30th day)* | *21.60\** | *21.05\** | *30.05\** | *34.30\** |
| *dinner - 100% (up to 30th day)* | *53.00\** | *60.65* | *64.35* | *91.35* |
| **Incidental allowance** |
| *Incidental allowance – 100% (up to 30th day)* | *17.30\** | *17.30* | *17.30* | *17.30* |

For complete travel directive (e.g., includes hotel rates) visit: https://www.njc-cnm.gc.ca/directive/d10/en

**Appendix A – Examples of information considered in the Minister’s decision to list a species under SARA**

* Do the species support livelihoods, for example, through harvesting, subsistence or medicine?
* Would listing the species have an impact on people’s activities with the species?
* Would listing the species result in cultural, social, or economic costs or benefits to individuals, communities or organizations?
* Do current or planned activities overlap with any of the species ranges or occurrences (i.e., where individuals of the species have been seen)?
* Are there any current or planned activities that may harm the species and/or destroy any part of its habitat?

**Appendix B – Examples of information included in a recovery document**

* Where the species and its habitat have been found.
* What the species needs to survive and/or recover.
* Threats (current and historical) to the species and which activities might destroy their habitat.
* What could be done to recover/manage the species and what actions are already underway.
* Population and distribution objectives for recovery/management.
* Indigenous Knowledge that knowledge holders would like to see included in a recovery document.
* Anything else that may aid in the survival and recovery of the species.

**Appendix C – List of Species and associated information**

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| **Upcoming Listing Species** |
| **Species** | **COSEWIC status – proposed new listing status** | **SARA status**  |
| Barn Swallow | Special Concern | Threatened |
| Canada Warbler | Special Concern | Threatened |
| Grappletail | Special Concern | No status |
| Lesser Yellowlegs | Threatened | No status |
| Seaside Centipede Lichen | Threatened  | Endangered  |
| Short-eared Owl | Threatened | Special Concern |

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| **Pacific Region Species at Risk with documents in progress** |
| **Species** | **Scientific Name** | **SARA Status** | **Document Type** |
| American Badger *jeffersonii* ssp. | *Taxidea taxus jeffersonii* | Endangered | Recovery Strategy |
| Audouin’s Night Stalking Tiger Beetle  | *Omus audouini* | Threatened | Recovery Strategy |
| Bank Swallow | *Riparia riparia* | Threatened | Recovery Strategy |
| Barn Owl - Western Population | *Tyto alba* | Threatened | Recovery Strategy |
| Barn Swallow  | *Hirundo rustica* | Threatened | Recovery Strategy |
| Black Swift  | *Cypseloides niger* | Endangered | Recovery Strategy |
| Bobolink | *Dolichonyx oryzivorus* | Threatened | Recovery Strategy |
| Buff-breasted Sandpiper | *Calidris subruficollis* | Special Concern | Management Plan |
| Cassin’s Auklet  | *Ptychoramphus aleuticus* | Special Concern | Management Plan |
| Collared Pika | *Ochotona collaris* | Special Concern | Management Plan |
| Crumpled Tarpaper Lichen | *Collema coniophilum* | Threatened | Recovery Strategy |
| Evening Grosbeak  | *Coccothraustes vespertinus* | Special Concern | Management Plan |
| Grizzly Bear - Western Population | *Ursus arctos horribilis* | Special Concern | Management Plan |
| Gypsy Cuckoo Bumblebee  | *Bombus bohemicus* | Endangered | Recovery Strategy |
| Haida Gwaii Slug  | *Staala gwaii* | Special Concern | Management Plan |
| Horned Grebe – Western population | *Podiceps auritus* | Special Concern | Management Plan |
| Marbled Murrelet  | *Brachyramphus marmoratus* | Threatened | Recovery Strategy amendment - Marine Critical Habitat |
| Monarch  | *Danaus plexippus* | Special Concern | Management Plan |
| Northern Goshawk *laingi* subspecies | *Accipiter gentilis laingi* | Threatened | Recovery Strategy |
| Okanagan Efferia  | *Efferia okanagana* | Endangered | Recovery Strategy |
| Olive Clubtail | *Stylurus olivaceus* | Endangered | Recovery Strategy |
| Oregon Forestsnail | *Allogona townsendiana* | Endangered | Recovery Strategy amendment - updated Critical Habitat |
| Roell’s Brotherella Moss | *Brotherella roellii* | Endangered | Recovery Strategy |
| Spotted Owl *caurina* subspecies | *Strix occidentalis caurina* | Endangered | Recovery Strategy amendment - updated Critical Habitat |
| Tiny Tassel | *Crossidium seriatum* | Special Concern | Management Plan |
| Vivid Dancer | *Argia vivida* | Special Concern | Management Plan |
| Wandering Salamander | *Aneides vagrans* | Special Concern | Management Plan |
| Western Bumble Bee *mckayi* subspecies | *Bombus occidentalis mckayi* | Special Concern | Management Plan |
| Western Bumble Bee *occidentalis* subspecies | *Bombus occidentalis occidentalis* | Threatened | Recovery Strategy |
| Western Grebe  | *Aechmophorus occidentalis* | Special Concern | Management Plan |
| Western Screech-Owl *kennicottii* subspecies | *Megascops kennicottii kennicottii* | Threatened | Recovery Strategy |
| Western Screech-Owl *macfarlanei* subspecies | *Megascops kennicottii macfarlanei* | Threatened | Recovery Strategy |
| Western Waterfan | *Peltigera gowardii* | Special Concern | Management Plan |
| Western Yellow-bellied Racer | *Coluber constrictor mormon* | Threatened | Recovery Strategy |
| Wolverine  | *Gulo* *gulo* | Special Concern | Management Plan |
| Woodland Caribou – Southern Mountain Population (Southern Mountain Caribou) | *Rangifer tarandus caribou* | Threatened | Recovery Strategy amendment - updated Critical Habitat |
| Yellow Banded Bumble Bee  | *Bombus terricola* | Special Concern | Management Plan |

**Appendix D – Some Examples of Priority Actions by Species**

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| **American Badger *jeffersonii* subspecies** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Identify habitat that can be improved and restore grassland and open forest habitat
 |
| Threat mitigation | * Reduce the chance of American Badgers being bit by cars (e.g., bu installing fencing and/or “Slow for wildlife”/“Badger crossing” signs)
* Raise awareness of the importance of Badgers with landowners, land managers, and the broader community to reduce threats to Badgers and their habitats
 |
| Research and monitoring | * Identify and prioritize data gathering to support Badger recovery
 |
| **Audouin’s Night Stalking Tiger Beetle** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Develop plans and restore habitat in these subpopulations: 1. Finlayson Point, Victoria; 2. Boundary Bay, Delta; 3. Blackie Spit (Mud Bay), Surrey; 4. Inlet, Victoria; 5. Swan Lake, Victoria; 6. Colquitz River, Victoria
 |
| Threat mitigation | * Gather data on threats to the subpopulations listed above
* Assess impacts of current land management activities to habitat
* Develop best management plans and/or stewardship plans in partnership with landowners, land managers, different sectors, and Indigenous Knowledge holders to reduce threats
 |
| Research and monitoring | * Gather data on species presence, habitat use, range, distribution and abundance, and habitat requirements and characteristics at current sites
 |
| **Bank Swallow** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Restore lost or severely damaged wetlands, especially in areas with nesting habitat
* Restore shorelines into nesting habitat in areas that are not likely to be damaged in the future
* Replace aging erosion-control measures with natural solutions such as planting vegetation and other natural methods to reduce bank erosion
* Explore the “freedom space approach” to river system restoration (consider river movement, flooding, and wetland habitat in planning)
* Replant areas on top of nesting cliffs and banks where plants had previously been removed to improve cliff stability and protect burrows from water spilling off the edge
 |
| Threat mitigation | * Conduct outreach and education with landowners and farmers to reduce pesticide use and promote Integrated Pest Management practices
 |
| Research and monitoring | * Conduct surveys at nesting colonies in natural and human-made settings
 |
| **Barn Owl (Western Population)** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Identify habitat that can be improved and restore habitats to increase suitable habitat and improve connections between habitat areas
 |
| Threat mitigation | * Raise awareness about the importance of owls to reduce rodent numbers and the risks of using rodenticide to owls and other birds such as through developing and sharing outreach material
* Install nest boxes throughout the Owl’s range (but not in areas with high risk of being hit by cars)
 |
| Research and monitoring | * Monitor and compile existing information on road deaths to identify high risk areas and develop options to mitigate threats
* Identify and describe the habitat near nest sites and assess habitat requirements based on different levels of urbanization and habitat fragmentation surrounding their nest/roost sites
 |
| **Crumpled Tarpaper Lichen** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Develop and raise awareness of best management practices and the importance of the species and its habitat amongst landowners
* Advise landowners of the potential of the species to be present on their lands and how to reduce threats
 |
| Research and monitoring | * Determine areas of suitable habitat for inventories and conduct inventories and gather more precise location data and land ownership information for each population
* Monitor locations to assess the status of populations and the effects of previous management activities taken to protect the habitat
 |
| **Evening Grosbeak** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Encourage public reporting of sightings and participation in monitoring programs (e.g., Great Backyard Bird Count, Project FeederWatch)
 |
| Threat mitigation | * Build relationships with industry, land owners and managers, and other sectors to reduce threats to the species and its habitat
* Raise awareness about the importance of Evening Grosbeak and promote people putting bird feeders in areas that will not lead to window strikes and cleaning the feeders to reduce birds sharing diseases or infections
* Encourage people to put up window stickers to reduce the chances of birds hitting the windows
 |
| Research and monitoring | * Conduct studies on the bird’s basic life history and ecology
* Research the impacts of various threats to populations
* Study the relationship with Spruce Budworm, including impacts of Spruce Budworm control measures
* Develop data collection protocols for areas that are not well covered by other programs like the Christmas Bird Count or Breeding Bird Survey
 |
| **Gypsy Cuckoo Bumble Bee** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Restore and enhance habitat by planting bee-friendly native flowering plants that bloom at different times throughout the foraging season
 |
| Threat mitigation | * Increase awareness of the risks of pesticides to insects and animals
* Develop and promote the use of best practices when using pesticides
 |
| Outreach and education | * Raise awareness of the species (e.g., habitat needs, locations, direct threats) amongst land owners and managers and the broader community through social media, traditional news, posters and other displays, workshops, person-to-person engagement, etc.
* Promote habitat restoration and creation of foraging habitat for all Bees (e.g., encourage people to plant flowers with short or open petals and/or flowers that bloom at different times throughout the active season)
 |
| Research and monitoring | * Develop and implement inventory and monitoring programs for the Gypsy Cuckoo Bumble Bee and its host bees and keep data in a database
 |
| **Horned Grebe (Western Population)** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Develop and follow breeding habitat restoration guidelines (e.g., restore “borrow pits” (holes dug for removing gravel, clay and sand), farm dugouts (holes dug to collect surface water runoff), and stock ponds)
* Restore and conserve seasonal and semi-permanent wetlands
 |
| Threat mitigation | * Support the creation and implementation of best-management practices and wetland conservation activities for industries such as oil and gas, mining, and forestry [specifically for western boreal forest region]
 |
| Research and monitoring | * Monitor to track species numbers and habitat use throughout the species’ range, particularly in the boreal forest
* Monitor incidents, species, and number of individual birds affected by oil spills, fisheries bycatch, diseases, and/or dry landing
 |
| **Marbled Murrelet** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Identify and address region-specific threats
* Research Marble Murrelet deaths due to fisheries bycatch (e.g., with Indigenous-owned fisheries and through outreach with other fisheries)
* Research and follow appropriate conservation tools to reduce threats in the marine environment (e.g., possibly through an outreach campaign)
* Develop and share best management practices and recommendations to affected industries such as forestry, fisheries, aquaculture, and recreation
* Raise awareness on the threats to seabirds and ways to reduce these threats
 |
| Research and monitoring | * Identify, map, and quantify nesting habitat at a forest stand or site level
* Establish a monitoring plan to assess changes to suitable habitat
* Review past and future habitat trends
* Monitor population status and trends using the coast-wide radar program
* Refine definitions of nesting habitat in each conservation region
 |
| **Monarch** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Develop and encourage the use of guidelines and/or best management practices to reduce threats and create, conserve, and improve Monarch breeding and nectaring (feeding on flower nectar) habitat. The guidelines and best management practices should be specific to different regions and sectors (e.g., agriculture, transportation, electricity, gas, water, or sewerage) and address timing requirements between flower availability and Monarch feeding times, local species of Milkweed, and threats from the specific industry or invasive species
 |
| Outreach and education | * Develop and conduct education, outreach, and public engagement activities to raise awareness of the species and threats, particularly with the agricultural community
* Encourage participation in citizen science Monarch monitoring and tagging programs in classrooms and with the broader community
* Encourage the creation of butterfly gardens using milkweed species native to the area and restoration of degraded or unsuitable habitat
 |
| Habitat improvement | * Support programs that prevent or reduce the effects of grassland conversion
* Increase native grassland habitat through restoration and improvement
* Minimize the loss of native vegetation through the removal of encroaching vegetation, conducting prescribed burns, planting beneficial plants like Milkweed
 |
| Research and monitoring | * Conduct research and monitoring projects to understand Milkweed distribution and abundance to target specific areas
* Conduct Monarch monitoring programs to monitor and assess population sizes, migration pathways, and effects of habitat loss and degradation at staging areas (where the Monarchs rest during migration)
 |
| **Northern Goshawk *laingi* subspecies** |
| **Broad strategy** | **Recommended actions** |
| Conservation planning | * Develop guidelines for habitat management and stewardship of nesting and foraging habitat (including information on height, diameter, age etc. of trees, shrubs, and plants in the area; human disturbance; how the area is used; etc.)
* Research, develop and implement forestry techniques to maintain habitat for the recovery, maintenance, and diversity of prey populations (e.g., Red Squirrels)
 |
| Outreach | * Develop and implement outreach and education programs for private landowners and resource managers to reduce threats
 |
| Threat mitigation | * Mitigate threats to known nest trees and areas surrounding the nest trees used by young Goshawks (called “Post Fledging Areas”, PFAs) through fencing, signage, etc.
 |
| Research and monitoring | * Conduct inventory and monitoring programs
* Monitor prey populations and assess impacts of forest harvest techniques on prey species
* Design and implement a monitoring program for competitor and predator species (e.g., Redtailed Hawks, Great Horned Owls, Barred Owls)
 |
| **Nuttall’s Sheep Moth** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Raise awareness of the importance of Nuttall’s Sheep Moth and Antelope-brush habitats, e.g., through developing and delivering education and outreach materials with the broader public
 |
| Threat mitigation | * Develop a plan to mitigate impacts from wildfires for Antelope-brush habitats for the subpopulations at Vaseux Lake (#1) and North Osoyoos (#2)
* Gather site specific data and assess threats to known subpopulations at Vaseux Lake (#1) and North Osoyoos (#2)
* Develop best management practices and/or stewardship plans for landowners and land managers for known subpopulations at Vaseux Lake (#1) and North Osoyoos (#2) and additional subpopulations as needed
 |
| Research and monitoring | * Develop a 10-year inventory and monitoring strategy in suitable habitat areas which includes gathering habitat and threat information
* Develop protocols for gathering habitat information
* Monitor occupied sites to gather information on life history, movements, and habitat use
* Gather information on egg, larval (caterpillar), and pupal (cocoon stage) habitat requirements
 |
| **Okanagan Efferia**  |
| **Broad strategy** | **Recommended actions** |
| Outreach | * Develop and deliver public education and outreach materials regarding the species
 |
| Threat mitigation | * On private land sites, including private conservation land, work with land owners to develop best management practices guidelines to reduce site-specific threats and improve/restore habitat
* Raise awareness of the importance of Okanagan Efferia in controlling other insect populations, their threats, and ways to reduce threats
 |
| Research and monitoring | * Develop a protocol for gathering data and gather habitat information (e.g., soil type, how much bare soil is available, plant diversity and abundance, slope, aspect (which direction is the site facing), temperature, etc.) at known and potential sites
* Develop a protocol for measuring, comparing, and monitoring site-specific threats at known and potential sites and monitor known sites for threats over time (e.g., photographic monitoring)
* Attempt to find larval burrow sites and explore if it’s possible to monitor these sites for information on life history, movements, habitat use, and biology to better understand habitat requirements for each life stage
* Attempt to monitor the temperature requirements for the species (e.g., temperature for flight, foraging, daily activities, perching, and mating)
* Conduct population monitoring at sites to understand abundance
 |
| **Olive Clubtail** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Assess land ownership of habitats near known populations and work with landowners to conduct stewardship measures to mitigate threats to dragonfly habitat at each known site
* Develop best management practices to reduce threats to shoreline habitats and restore vegetation
 |
| Research and monitoring | * Develop a standardized monitoring protocol to record baseline population information at each known site and monitor future trends
* Develop a standardized inventory protocol for surveys at new sites (include habitat attributes, aquatic and terrestrial plant community information, life stage surveys, water quality data, immediate threats, other natural history information) and compile existing information and/or complete similar fieldwork at known sites
* Work with landowners to identify potential habitat and survey priority sites
* Confirm scope, severity, and timing of threats to each of the known populations
* Develop threat monitoring protocols at known sites and (e.g., photographic monitoring, water quality monitoring) to monitor long-term habitat changes
* Document introduction and/or presence of invasive species (e.g., Eurasian water-milfoil and predatory non-native fish) at known sites and assess how they impact Olive Clubtail
 |
| **Oregon Branded Skipper** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Increase public awareness of the importance, threats, and habitats of the species and other species in sparsely vegetated and Garry Oak ecosystems
 |
| Conservation planning | * Determine which additional species also occur in the same habitat as the Skipper and identify recovery actions that will support all species (see page 37)
 |
| Threat mitigation | * Work with private landowners to conduct stewardship activities to reduce threats to the species
* Work with forestry companies that own property where the species has been recorded (Population E: Port Renfrew) to develop and implement best management practices to reduce threats
* Conduct outreach with forestry companies to reduce threats to the species
 |
| Research and monitoring | * Confirm distribution and address knowledge gaps (e.g., habitat requirements for each life stage)
* Develop and implement a standardized inventory plan to document habitat attributes, plant community information, life stage surveys, immediate threats, and other natural history information at known sites, historical sites, and additional sites with potential habitat
* Assess threats and monitor habitats (e.g., with photography)
 |
| **Oregon Forestsnail** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Continue to update and develop best management practices guidelines for landowners based on land use (e.g., land managers, housing developers, small property owners, and residents; local governments; and consultants who work with landowners) which also include options for managing habitat for forest-floor invertebrates (insects, snails, slugs, etc.) under different land use practices
* Work with parks and protected areas to ensure the species is included in park management planning – actions can include installing informational signage, vegetation management/restoration around occupied habitats, identification training for parks staff
* Raise awareness within the broader community of the importance of the species to the agricultural, public, and gardening community, the difference between native and non-native species, and associated threats
* Work with the Invasive Species Council to encourage people to prevent the accidental introduction of invasive species and control invasive species through environmentally friendly means
* Conduct inventories and during inventories, list, quantify, and rate threats to habitat at each known site to better understand why the snails may or may not be present within certain habitats and use this information into best management practices guidelines and advice during environmental assessments
* To better understand threats, overlay spatial information that shows flood and forest fire information with critical habitat to reveal habitats that may be more vulnerable
* In parks and recreational areas, identify site-specific threats to reduce habitat damage caused by erosion and destruction of vegetation (e.g., fire management, restrict intensive recreational activities in known habitats, remove and manage invasive species)
 |
| Research and monitoring | * Develop monitoring plans and monitor (through capture-mark-recapture studies) populations at known sites and gather information on movement, life history, threats (e.g., invasive species), daily/seasonal activity patterns, long-term population dynamics, habitat requirements, and other factors
 |
| **Roell’s Brotherella Moss** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Develop best management practices including mapping locations in parks and training (e.g., habitat identification and which activities may threaten the species)
* Advise landowners on best management practices to reduce threats
* Assess impacts of threats at all locations
* Monitor locations to assess the effects of any management activities taken to mitigate threats
 |
| Research and monitoring | * Identify and map the species’ current and suitable habitat
* Prioritize areas for inventories and conduct inventories
* Develop and implement monitoring protocols for distribution, abundance, and condition of habitat at each location
* Monitor populations to determine size and trends
* Identify habitat requirements (e.g., sunlight, humidity, soil moisture, temperature, wind speed, etc.) and state of decay, size, and diameter of host tree or wood debris
 |
| **Spotted Owl** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Promote owl population stewardship with other stakeholder groups
* Raise awareness of the importance of owls and recovery actions
* Promote habitat stewardship with forestry companies
 |
| Conservation planning | * Develop forestry guidelines to create, enhance, and maintain habitat
 |
| Research and monitoring | * Monitor population status
 |
| **Tiny Tassel** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Develop best management practices for mitigating threats
* Assess and monitor threats to determine their impact
 |
| Research and monitoring | * Survey known and potential locations
* Develop and implement a monitoring protocol to estimate population size
* Identify specific habitat requirements for the species (e.g., exposure, humidity, light intensity, soil chemistry and moisture, temperature)
 |
| **Vivid Dancer** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Restore vegetation
 |
| Threat mitigation | * Confirm land ownership of aquatic spring habitat and land habitats near known subpopulations
* Work with private landowners to determine appropriate stewardship actions, and develop best management practices to reduce threats
* Raise awareness of the importance of the species and how to reduce threats to the species and habitats
 |
| Research and monitoring | * Confirm distribution and address knowledge gaps, such as habitat requirements for each life stage
* Develop a standard technique for recording baseline subpopulation abundance information
* Develop an inventory protocol and survey known sites including habitat characteristics, plant community information, life stage surveys (e.g., survey across all life stages), water quality (e.g., temperature), threats, etc. and inventory sites where the species has not been recorded
* Assess the impact of all threats to each subpopulation and develop protocols to measure and compare habitat-specific threats at each subpopulation
* Monitor water quality to assess if actions to prevent pollutants are effective
* Document the introduction and/or presence of invasive species at known habitats and assess how invasive species impact young Vivid Dancers (e.g., fairy shrimp, aquatic invasive plants)
 |
| **Wandering Salamander** |
| **Broad strategy** | **Recommended actions** |
| Threat mitigation | * Raise awareness about the importance of not removing large fallen wood
* Before planned construction or habitat conversion activities, recommend moving large downed wood and tree stumps to a more protected area
 |
| Research and monitoring | * Revisit historical sites and their surroundings to determine persistence (how long the species stays in an area) and overall trends in distribution
* Monitor persistence, relative abundance, and age structure at selected locations across the species’ range through standardized surveys
* Clarify distribution on the Sunshine Coast and elsewhere throughout its range through surveys
* Develop a habitat suitability model to guide search efforts
* Survey the tops of large trees, especially in very moist forests, such as on the west coast of Vancouver Island, for the species
 |
| **Western Grebe** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Assess the impact of aquatic-invasive species on lakes that have breeding colonies and control and/or remove the invasive species
 |
| Threat mitigation | * Develop and distribute educational material to reduce disturbance on lakes that have breeding colonies (in BC: Shuswap Lake (Salmon Arm Bay), Duck/Leach’s Lakes complex (within the Creston Valley Wildlife Management Area) and Okanagan Lake)
* Establish no-disturbance zones around colonies, such as by putting up signage at boat launch areas and near the colonies to limit speed and disturbance by boat traffic
* Create, implement, and enforce best practice and regulations to reduce the chance of fisheries bycatch
* Establish a reporting program to compile incidents, species types, and number of individual birds affected by fisheries bycatch
 |
| Research and monitoring | * Implement a coordinated monitoring program of inland waterbirds including Western Grebe using a standardized methodology
* Implement an offshore monitoring program of distribution and abundance across the winter range
* Monitor winter population trends and potential changes in distribution using available data (e.g., data from the Christmas Bird Count, BC Coastal Waterbird Survey)
* Continue to gather information from available sources on past occupancy, current habitat suitability and threats on lakes that are used during the breeding season
 |
| **Western Screech-owl *kennicottii* subspecies** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Restore or improve habitat (e.g., nest tree creation, nest box installation) on private land, in parks, and in urban settings to improve habitat connectivity in the Lower Mainland and southern Vancouver Island
 |
| Threat mitigation | * Identify nest trees on private land, recreational parks, and urban settings and encourage their protection
* Identify and protect nest trees throughout the subspecies range
 |
| Outreach and education | * Raise awareness of the importance of trees for wildlife and species that nest in holes in trees among private land-owners, parks staff, regional and municipal districts, range tenure holders, and forest workers
 |
| Research and monitoring | * Assess the impact of Barred-owl predation on Western Screech-owl using multi-species radio-telemetry surveys
* Assess habitat requirements at different sites
 |
| **Western Screech-owl, macfarlanei subspecies** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Develop and implement a communication plan including identifying target audiences and key messages to improve community-based conservation
 |
| Habitat improvement | * Identify priority sites for restoration and restore and enhance habitats
 |
| Research and monitoring | * Identify potential habitat and inventory suitable sites where the Screech-owl had not been previously identified
* Implement a research program at occupied sites to clarify breeding and foraging habitat requirements and reproductive success using radio-telemetry
* Assess the impact of Barred-owl predation on Western Screech-owl (e.g., using multi-species radio-telemetry surveys)
* Review and update best management practices for Screech-owls and encourage their use with land managers
* Design and implement a plan for monitoring habitat and population trends
 |
| **Western Waterfan** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Develop and provide best management practices or site-specific management plans to applicable industries and land managers
* Contact land managers within the species’ potential range and provide them educational and outreach material on the location of Western Waterfan
 |
| Research and monitoring | * Identify and map suitable habitat locations to inform future inventories
* Prioritize areas for inventories and conduct inventories to find new populations and to confirm distribution at known locations
* Develop and implement standardized habitat survey and monitoring protocols to assess threats at each known sites
* Monitor populations and threats at known locations every 5 years or when land management activities change
 |
| **Western Yellow-bellied Racer** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Identify priority sites and encourage voluntary stewardship actions, implementation of best management practices
 |
| Threat mitigation | * Identify areas with high road deaths and apply appropriate threat mitigation actions (e.g., fencing, culverts, “slow” signage)
 |
| Research and monitoring | * Develop and implement an inventory and population monitoring strategy: Use habitat suitability modeling to develop an inventory strategy to clarify distribution and abundance within population areas; inventory population areas determine priority areas based on inventory information
* Develop monitoring programs in each of the five population areas to detect changes in population and distribution through time
* Clarify seasonal movement patterns, identify home range size, and characteristics of hibernation and nesting sites
 |
| **Woodland Caribou, Southern Mountain population** |
| **Broad strategy** | **Recommended actions** |
| Habitat improvement | * Restore habitat in seasonal range such as industrial landscape features like roads, old seismic lines, pipelines, cut-lines, temporary roads, cleared areas; reconnect fragmented areas; reduce predator access and movements; make habitat less suitable for primary prey species (e.g. moose, deer, elk)
 |
| Threat mitigation | * Assess impact of natural disturbances (e.g., forest fire, mountain pine beetle, spruce beetle, pine rusts) on long-term habitat management and incorporate habitat considerations into fire management, landscape-level planning, and management of industrial activities
* Manage access and timing of recreational activities and traditional activities such as hunting and trapping in caribou habitats to reduce disturbance and predator access.
* Where necessary, apply predator management as a management tool coordinated with other management approaches.
 |
| Research and monitoring | * Measure and monitor habitat changes
 |
| **Yellow-banded Bumble Bee** |
| **Broad strategy** | **Recommended actions** |
| Outreach and education | * Raise awareness of the Bee and its needs, where it can be found, and direct threats with land owners and managers, farmers, beekeepers, and the broader public through the news, social media, advertisements and marketing, displays, person-to-person engagement, workshops and experiential learning, etc.
 |
| Habitat improvement | * Promote conservation, maintenance, restoration, and creation of foraging habitat (e.g., flowers with short and/or open petals which bloom through the active season), nesting habitat (underground burrows), and overwintering habitat (rotting logs, loose soil, mulch)
* Promote voluntary stewardship by landowners and the broader community
 |
| Threat mitigation | * Promote and follow best management practices when using pesticides and encourage people to reduce their use
* Develop integrated pest management approaches as an alternative to pesticides
 |
| Research and monitoring | * Conduct inventories throughout the species’ historical range to understand current range
* Develop materials for capacity building (e.g., bee identification, monitoring protocols)
 |