

An aerial photograph of a mountain valley. The left side is dominated by a dense, dark green coniferous forest. The center and right side feature a lighter green meadow with scattered trees and a prominent white snow patch. The background shows steep, rocky mountain slopes.

Conservation and Management of Species at Risk

Robyn Reudink

Ministry of Forests, Lands, and Natural Resource Operations

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Outline

- Federal Species at Risk Act (SARA)
- Provincial Strategy
- Recovery of Species at Risk (SAR)
- Biogeoclimatic Ecosystem Classification
- SAR Examples in Lillooet Area



Species at Risk Act

- Passed by the House of Commons in June 2002
- Purpose of the Act is to:
 - To prevent wildlife from becoming extinct or extirpated in Canada
 - To help the recovery of Extirpated, Endangered or Threatened species
 - To manage Special Concern species to prevent them from becoming further at risk
- Independent science based assessment process
- Prohibitions against killing or harming species, residences, and critical habitat
- Recovery and Management Planning
- Stewardship

Species at Risk Act

- SARA contains prohibitions for endangered, threatened, and extirpated species that make it an offence to:
 - kill, harm, harass, capture, or take an individual of a species
 - possess, collect, buy, sell or trade an individual of a species
 - damage or destroy the residence (e.g. nest or den) of an individual
- Automatic prohibitions apply to:
 - All SARA listed species on federal lands.
 - On all lands, including crown and private: Aquatic species listed under SARA and migratory birds listed in the Migratory Birds Convention Act and under SARA

Species at Risk Act

- Critical habitat is the habitat necessary for the survival or recovery of a listed endangered, threatened or extirpated species
 - Critical habitat is identified in the recovery strategy or action plan for each listed species
 - All SARA listed species receive critical habitat protection on federal lands.
 - On all lands, SARA requires the protection of critical habitat for aquatic species
- There is currently draft/proposed critical habitat for many species that occur in the area

Species at Risk Act

- A federal “Safety-net” could be invoked if existing provincial legislation or voluntary measures are deemed to not effectively protect individual listed species, their residences and/or identified critical habitat, when found on provincial crown or private lands
- More info on SARA: <https://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1>

Provincial Approach

- Compile species information, assess status, map locations, make data available (Conservation Data Center):
<http://a100.gov.bc.ca/pub/eswp/>
- Provincial recovery strategies (including information on habitat needed for survival and recovery) = advice to decision-makers
- Implement habitat protection through existing provincial tools and regulatory processes (often includes evaluation of socioeconomic implications)
- Support stewardship efforts on private lands
- See the Five Year Plan for Species at Risk in BC:
<http://www2.gov.bc.ca/gov/content/environment/plants-animals-ecosystems/species-ecosystems-at-risk/5-year-plan>

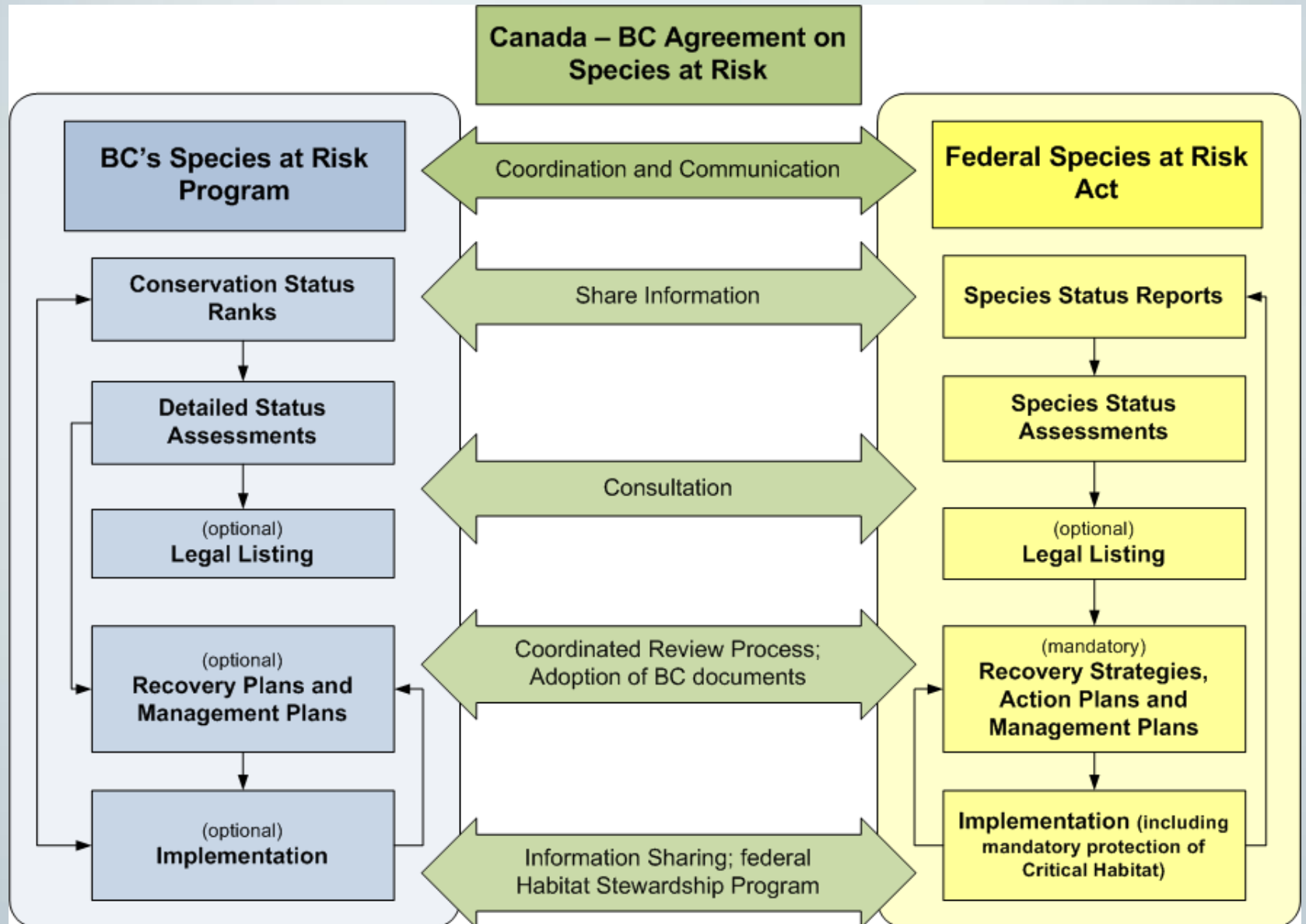
Provincial Tools

- Provincial Legislation:
 - *Wildlife Act*
 - *Forest and Range Practices Act*
 - *Private Managed Forest Land Act*
 - *Parks and Protected Areas Act*
 - *Environmental Assessment Act*
 - *Land Act*
 - *Water Sustainability Act*
 - *Community Charter and Local Government Act*
- Land Use Planning
- Recovery Planning
- Stewardship
- Provincial Guidelines and Best Management Practices

Provincial Tools - FRPA

- Forest and Range Practices Act (FRPA) + associated regulations.
 - Governs activities of forest and range licensees in B.C.
 - Fish and Wildlife are two of the 'subjects' that government can make regulations for
 - Specifically can make regulations to establish wildlife habitat areas, other designations, and general wildlife measures
- Government Actions Regulation – GAR
 - Provides direction for establishment of localized land designations that require special management for certain values (fish, wildlife, but also visual quality, recreation)
 - GAR is main tool to designate habitat for Species at Risk

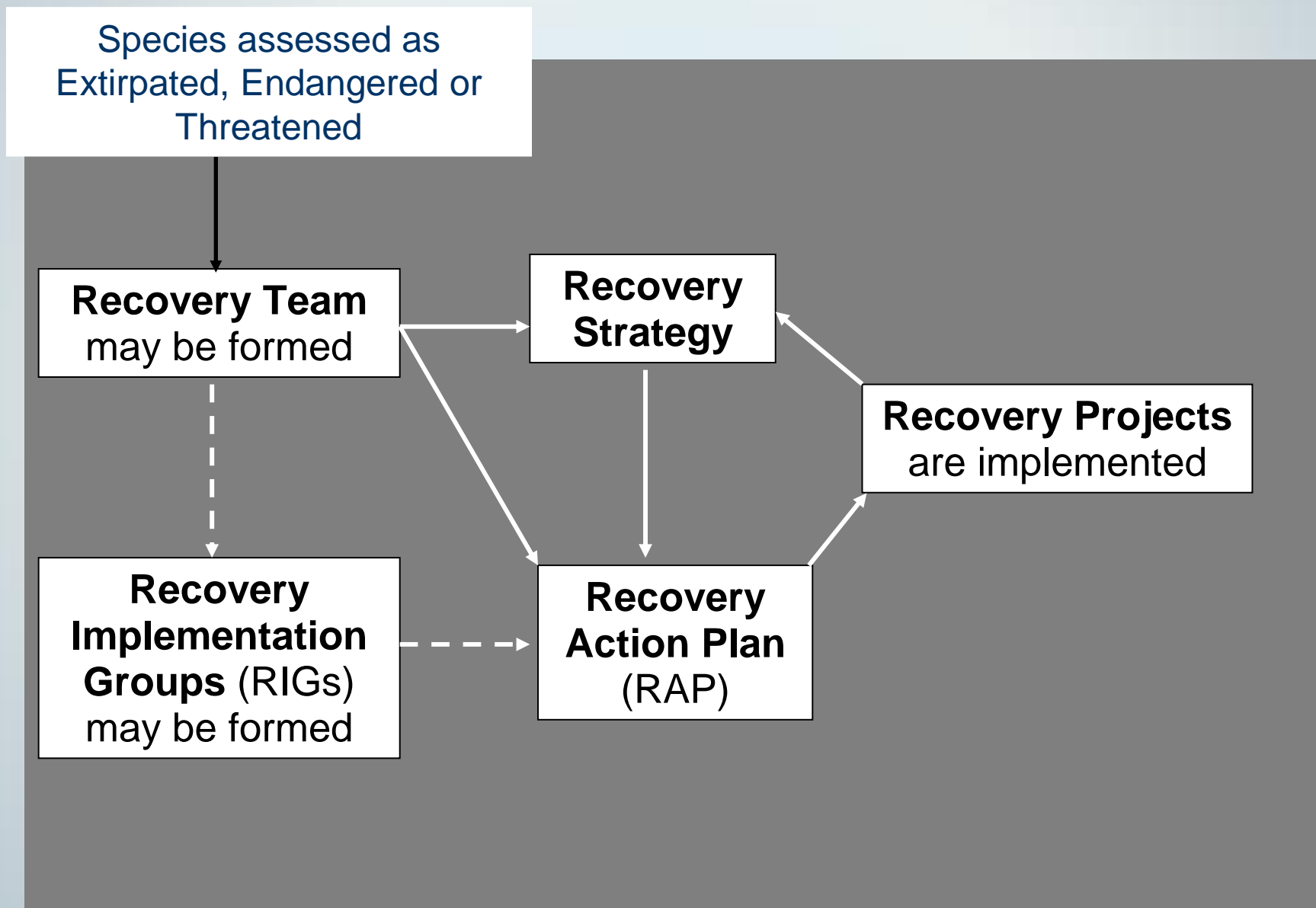
Provincial – Federal Comparison



Recovery Planning

- Recovery strategies and management plans must be prepared within certain timelines under SARA
- Recovery strategies and action plans must address threats and must identify critical habitat
- BC leads or co-leads recovery planning for ~75% of SAR in BC
- Federal agencies will adopt provincial recovery strategies

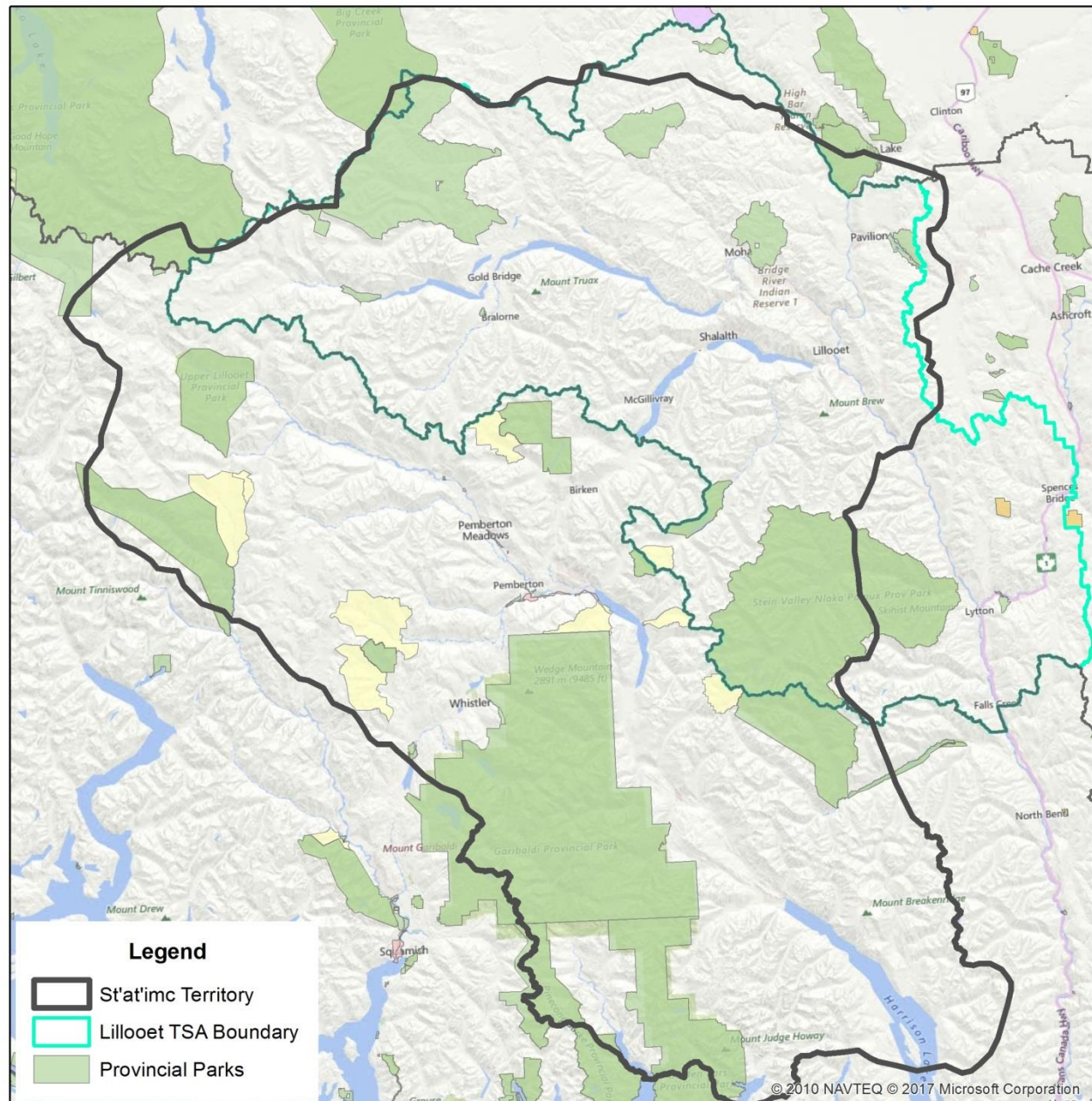
Recovery Planning



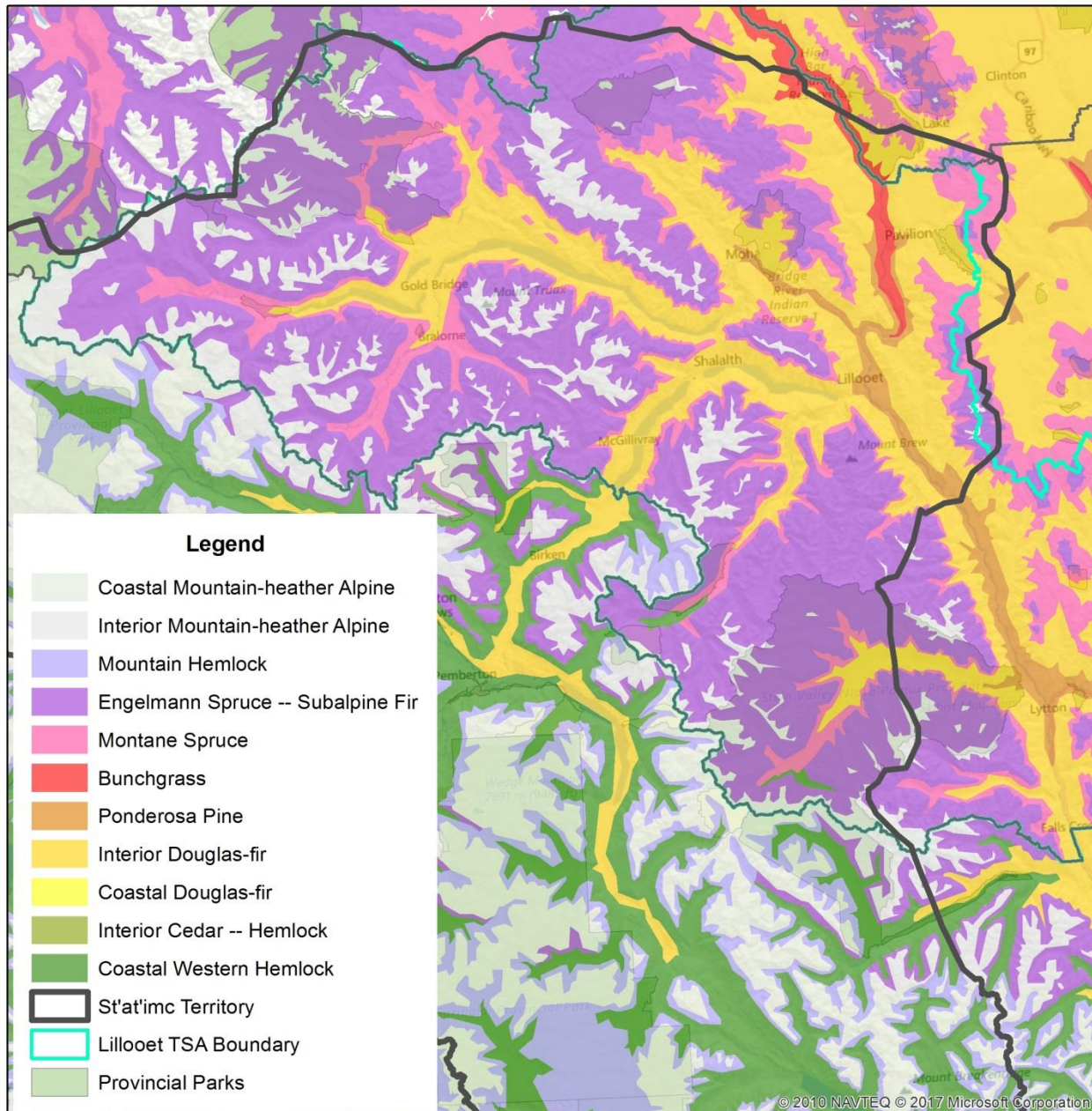
Recovery Teams

- Representatives from all jurisdictions with responsibility for the species
- Species or issue experts, representatives from first nations, conservation and stakeholder groups
- Members must have expertise in relevant areas (e.g. the species, threats, recovery plan design or implementation) and/or represent agencies with legal control over the species' habitat
- Members must be committed to recovery of the species in a timely fashion

Map and Ecosystem Classification



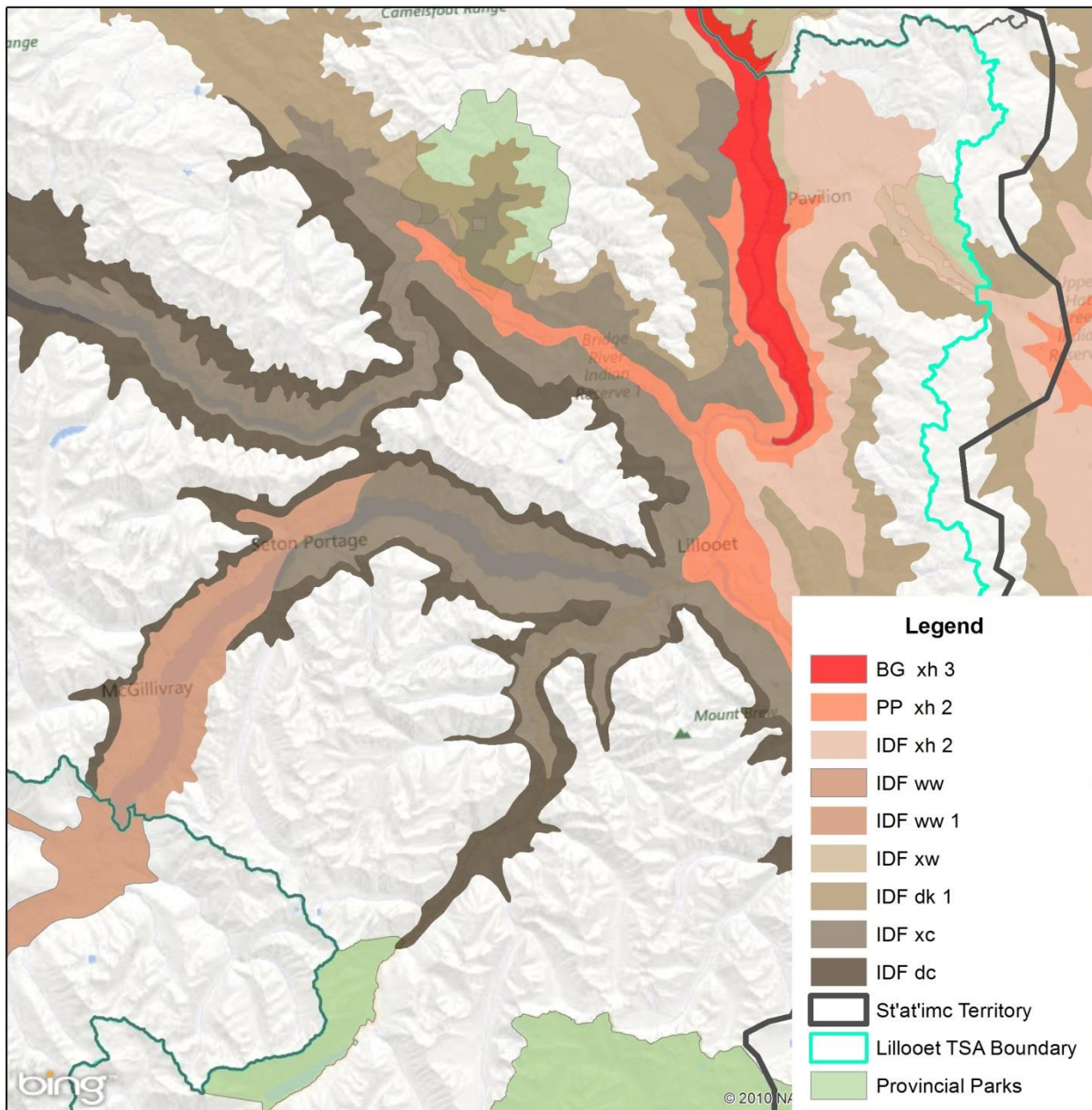
Map and Ecosystem Classification



BEC Zones in Lillooet Area

- BEC Zones are areas of relatively uniform climate
- BEC is hierarchical
- BEC used often in wildlife habitat mapping and management – use subzone and site series levels

Map and Ecosystem Classification



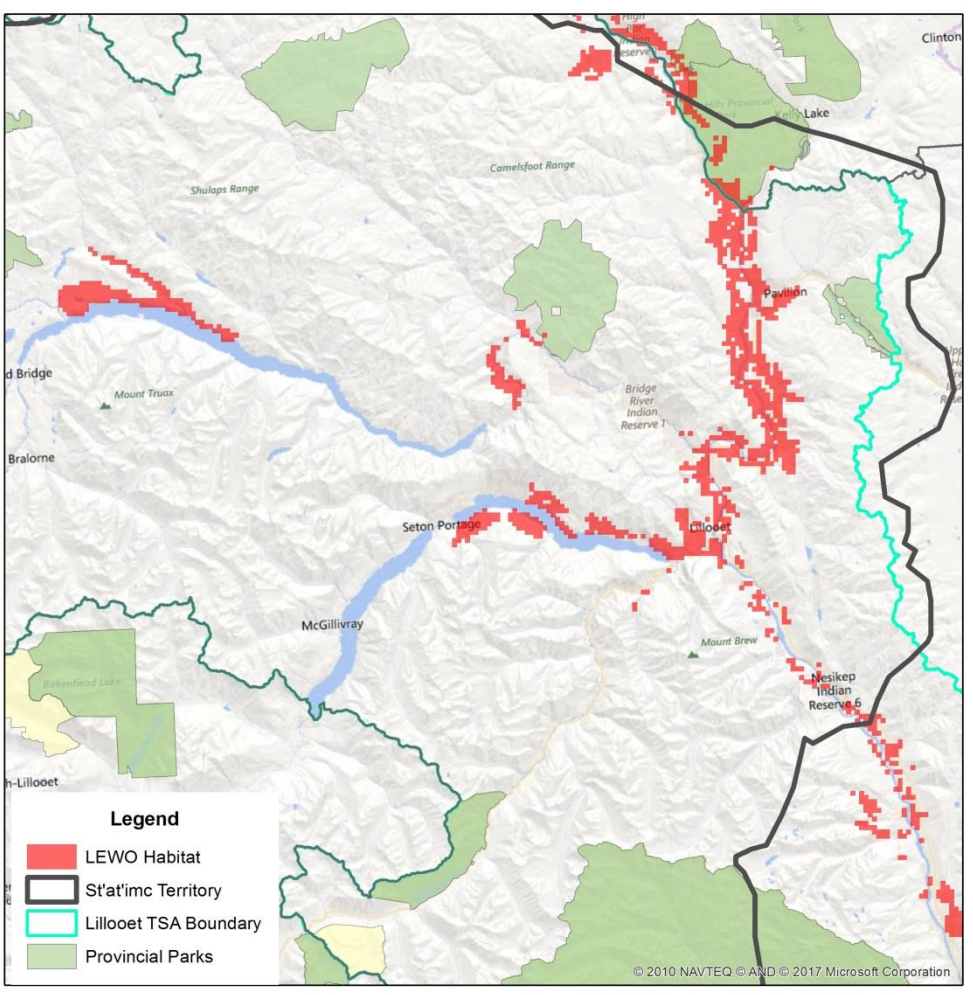
BEC Subzone Example

- 1st letter is moisture, 2nd is temperature, number is for geographic location
- Only one subzone for Bunchgrass and Ponderosa Pine
- Douglas Fir Subzones in this area range from 'very dry hot' to 'dry cold'

Sample of Species at Risk - Lillooet Area

English Name	BC List	SARA
Coastal Tailed Frog	Blue	Special Concern
Great Basin Spadefoot	Blue	Threatened
Western Toad	Blue	Special Concern
North American Racer	Blue	Special Concern
Gopher Snake	Blue	Threatened
Long-billed Curlew	Blue	Special Concern
Short-eared Owl	Blue	Special Concern
Western Screech-Owl	Red	Endangered
Flammulated Owl	Blue	Special Concern
Spotted Owl	Red	Endangered
Lewis's Woodpecker	Blue	Threatened
Peregrine Falcon	Red	Special Concern
American Badger	Red	Endangered
Grizzly Bear	Blue	Special Concern
Spotted Bat	Blue	Special concern
Big Horn Sheep	Blue	N/A
Mountain Goat	Blue	N/A

Lewis's Woodpecker



Lewis's Woodpecker



- Habitat Needs:
 - Dry open Ponderosa Pine or Douglas Fir Forests and Open Grasslands – low stem densities, wildlife trees, herb/shrub layers
 - Mature to Old Cottonwood Riparian, typically adjacent to grasslands
 - Recently burned Ponderosa Pine and Douglas Fir forests, with standing snags
- Threats:
 - Urban and Agricultural Development
 - Firewood Cutting and Removal of Snags – for safety or aesthetics
 - Mountain and Western Pine Beetle Outbreaks
- Recovery Actions:
 - Habitat protection in WHAs
 - Pilot nest box programs
 - Research to address gaps
 - Outreach

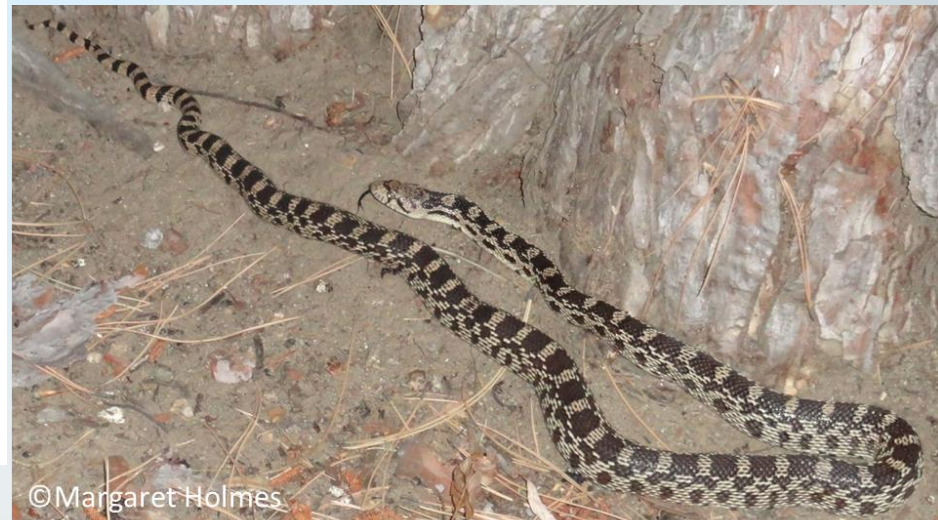
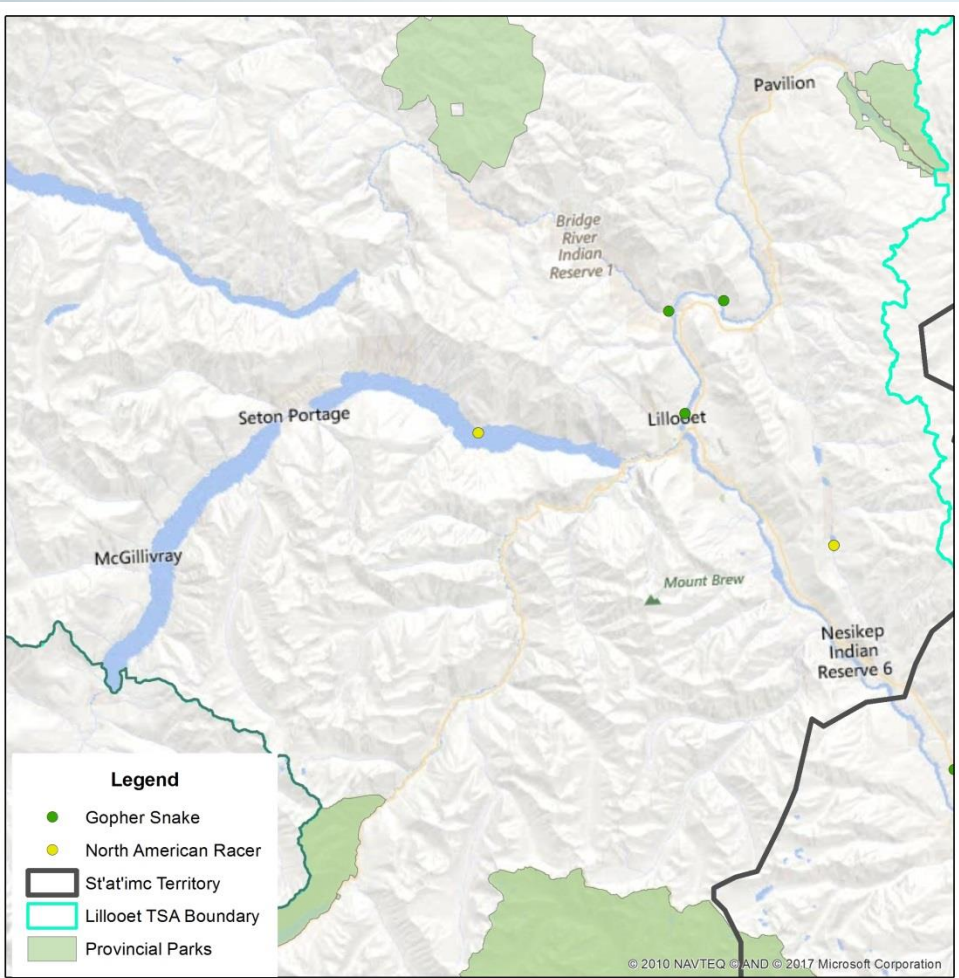
Lewis's Woodpecker



Timing:

- Return from Winter: May
- Nesting: May - July
- Fall Migration: August - September

Gopher Snake and Racers



©Margaret Holmes

Gopher Snake and Racers



- Gopher Snake and Racer Habitat Needs:
 - Hibernation: Rock outcrops and talus slopes, burrows in deep soils (GS, unknown if racers use burrows). Most known are below 900 m
 - Foraging, hibernation, and egg laying habitat
 - Foraging: Grasslands and shrub-steppe, open forest, wetlands, riparian with abundant rodent prey. Up to 1400 m, may occasionally be higher.
 - Egg Laying: Grassy or sparsely vegetated slopes with sandy soils and warm aspect. Talus slopes of fine material may be used. Racers, similar, but less is known.
- Threats:
 - **Transportation and Service Corridors!**

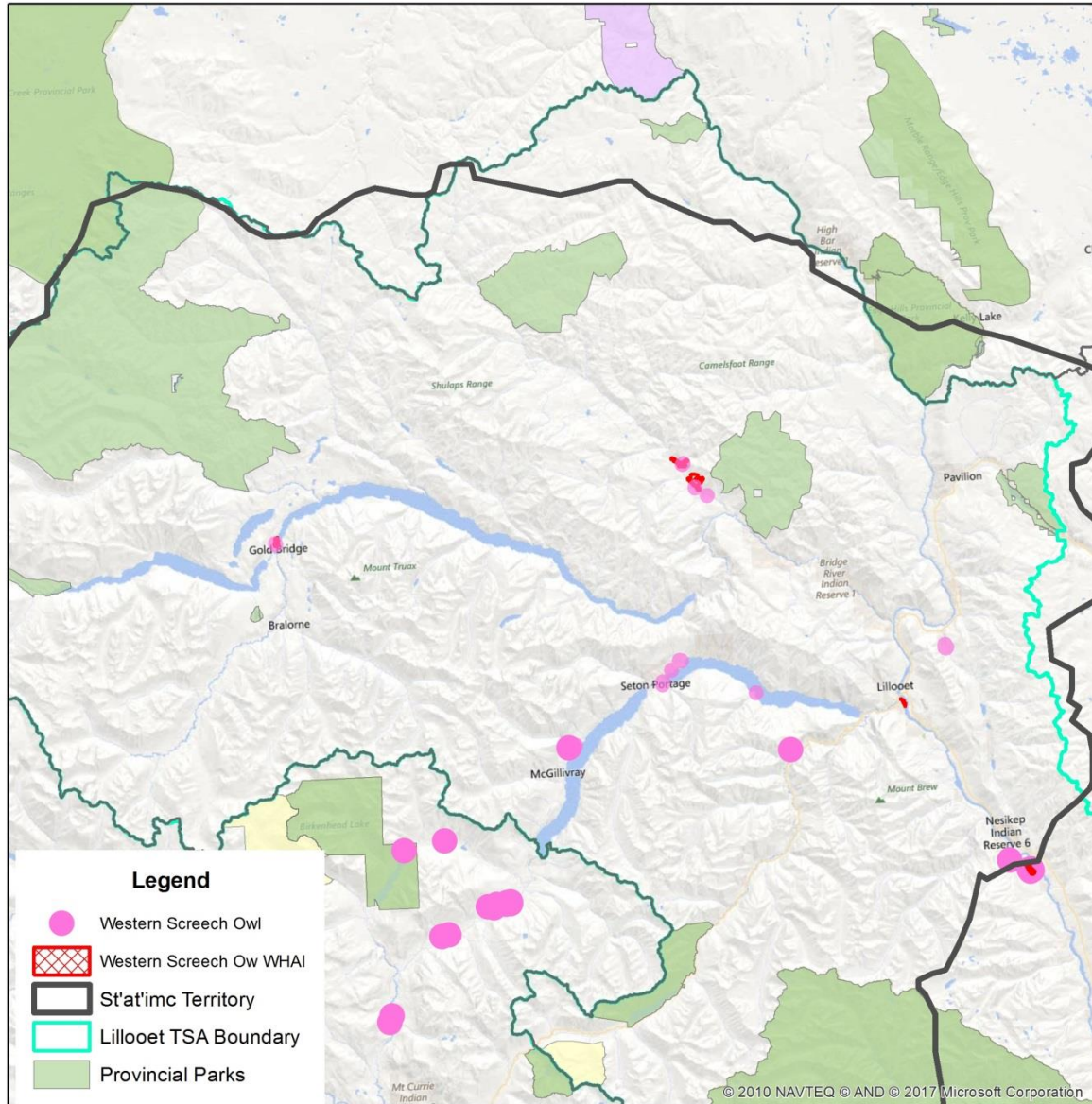
Gopher Snake and Racers



Timing:

- Hibernation: October – March
- Summer Foraging: April to September
- Egg Laying: June – July
- Eggs Hatch: August – September

Western Screech-Owl



Western Screech-Owl



○ Habitat Needs:

- Nesting: Deciduous valley bottoms and riparian areas. Black cottonwood favored for nesting. Also water birch, aspen. Wildlife trees are important along with shrub understory
- Foraging: Adjacent ponderosa pine and Douglas fir forests, riparian, and wetland with suitable perches. Home range size ~60-70 ha.

○ Threats:

- Habitat Loss – forestry, urban, agriculture, hydroelectric
- Changes in Predation – Barred Owls
- Road Kill

○ Recovery Actions:

- Habitat Protection – WHAs, NGO Conservation Lands, Parks
- Inventory, Research, and Mapping
- Stewardship and Outreach

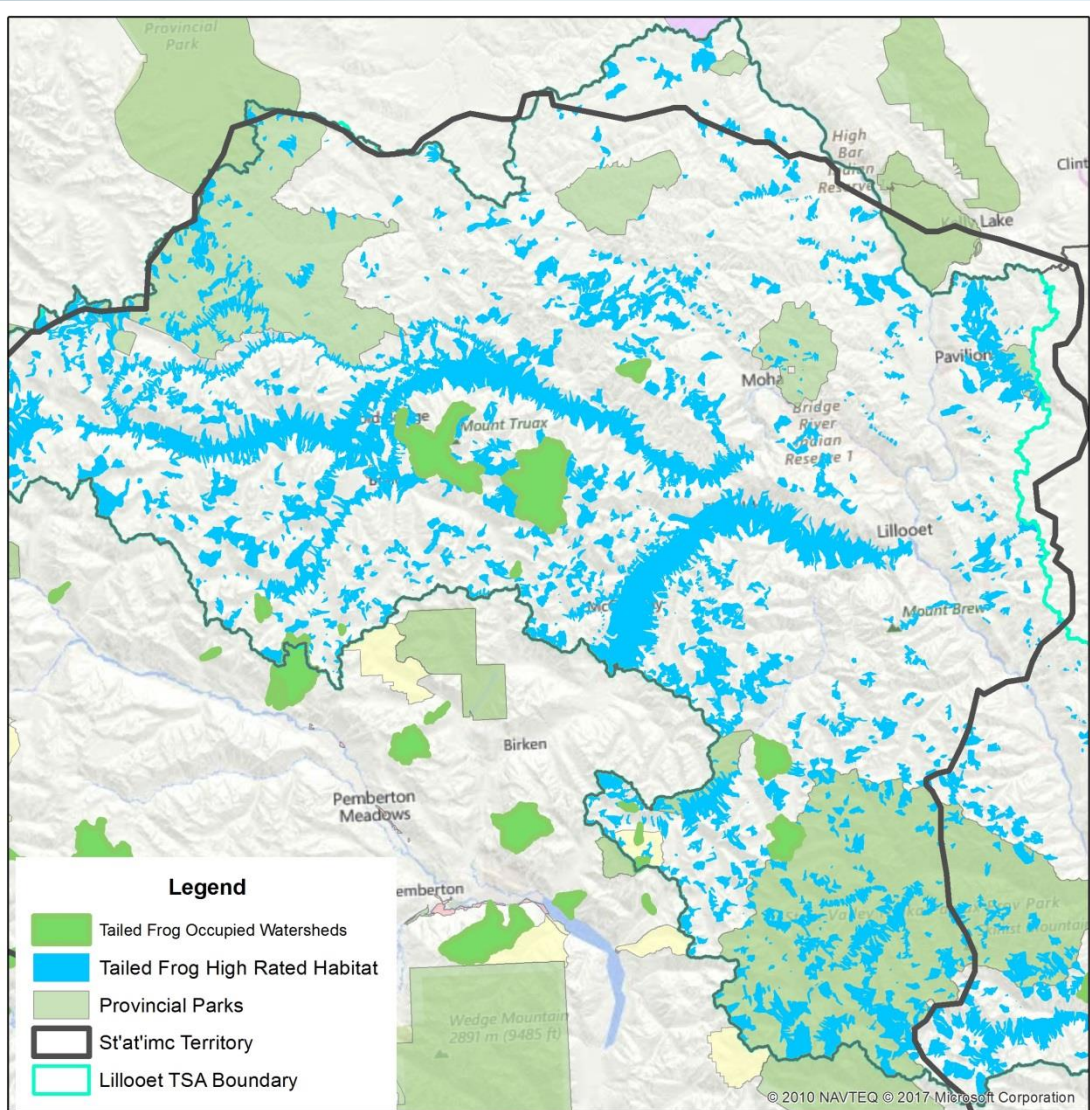
Western Screech-Owl



Timing:

- Winter in their territory
- Nesting: April – June
- Young Dispersal: July - August

Coastal Tailed Frog



Coastal Tailed Frog



○ Habitat Needs:

- Cool permanent mountain streams. Step-pool, gradients that are not too low or excessively steep. Streams must be cool throughout summer
- Stream temperature and food availability likely limiting factors
- Terrestrial Habitat - Foraging: Old or mature forested riparian zones, close to stream, but may wander 100 m or more if conditions are moist.

○ Threats:

- Stream Sedimentation
- Habitat Loss
- Changes in Hydrology
- Climate Change

○ Recovery Actions:

- Habitat Protection – WHAs, NGO Conservation Lands, Parks
- Inventory, Monitoring, and Research
- BMP Development and Outreach

Coastal Tailed Frog

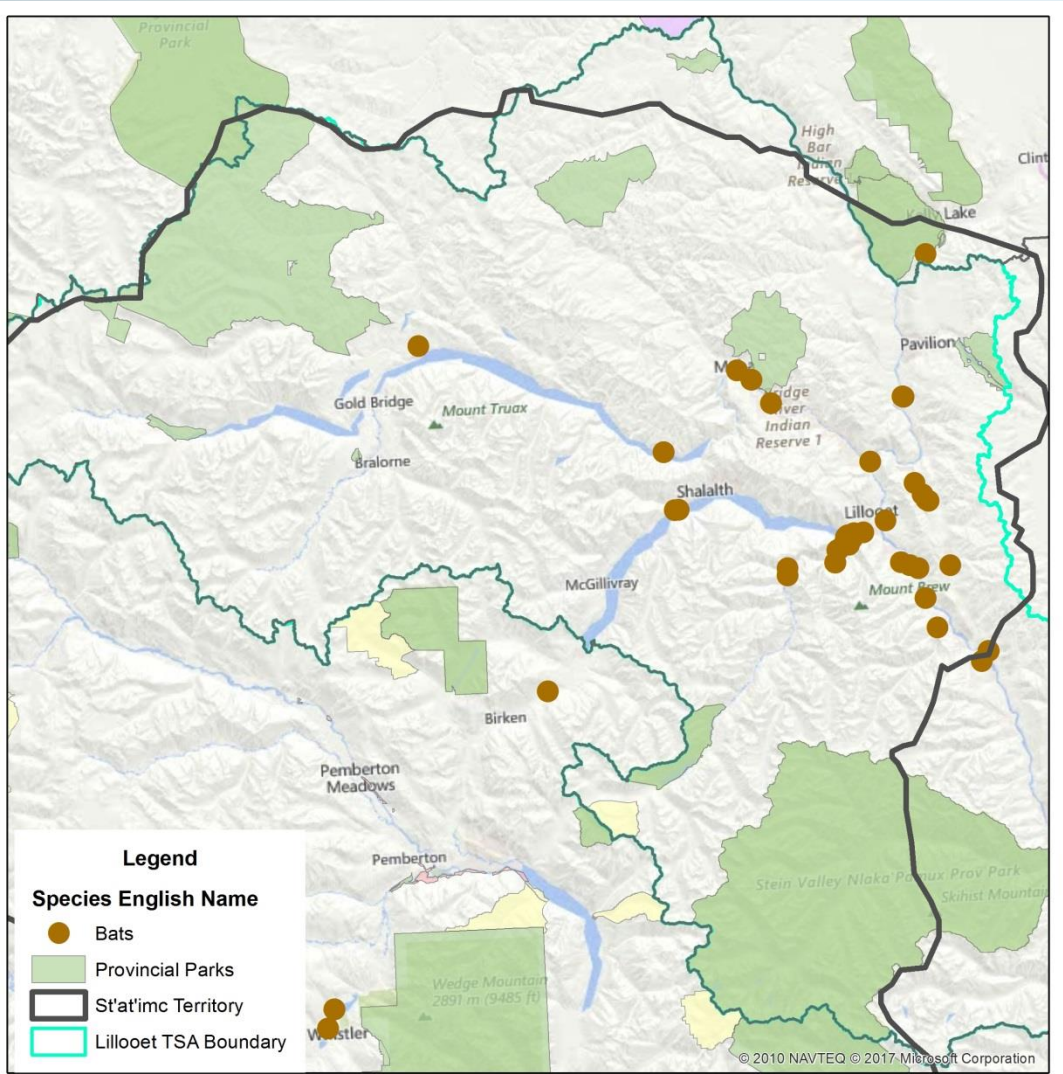


Timing:

- Mating: September – October
- Egg Laying: June – August (following year)
- Eggs Hatch: July – September
- Larval Period: 2-4 years (Adults live 10 to 20 years!)



Bats



Bats



Species	Habitat Association		Provincial Listing	Lillooet Status
	Roost	Forage		
Myotis with keel				
California Myotis	Trees, buildings	Forest edge	Yellow	Confirmed
Western Small-footed Myotis	Rock outcrops	Arid hillsides	Blue	Confirmed
Long-Legged Myotis	Trees, buildings		Yellow	Confirmed
Myotis without keel				
Little Brown Myotis	Trees, buildings	Wetlands, riparian	Yellow	Confirmed
Yuma Myotis	Trees, buildings		Yellow	Confirmed
Northern Long-Eared Myotis	Trees	Riparian corridors	Blue	Confirmed
Fringed Myotis	Rock talus, cliff, cave		Blue	Confirmed
Western Long Eared Myotis	Rock		Yellow	Confirmed
Keen's Long-Eared Myotis	Rock, trees		Red	Confirmed
Non-Myotis species				
Western Red Bat	Tree		Red	Unconfirmed
Hoary Bat	Tree	Above canopy	Yellow	Unconfirmed
Silver-Haired Bat	Tree		Yellow	Confirmed
Big Brown Bat	Trees, buildings		Yellow	Confirmed
Spotted Bat	Cliff	Open Forest, Riparian	Blue	Confirmed
Townsend's Big-Eared Bat	Caverns	Forest edge, openings	Blue	Confirmed
Pallid Bat	Caverns	Open grassland	Red	Unconfirmed

Bats



○ Habitat Needs:

- Summer and Maternity Roosts: Buildings, Cliffs, Rock Crevices, Snags, Stumps, Trees. Maternity Roosts are used repeatedly and are sensitive to disturbance.
- Winter Roosts: Mines or Caves
- Foraging: Riparian areas, rivers, creeks, small ponds, grasslands, forests

○ Threats:

- Habitat Loss –forestry, mining, urban development
- Direct Mortality – wind power, transmission lines
- White Nose Syndrome

○ Recovery Actions:

- Inventory and Research – confirm distribution, identify roosts
- Outreach
- Stewardship and Outreach

- You can submit data to Wildlife Species Inventory:
<http://www.env.gov.bc.ca/wildlife/wsi/index.htm>

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Ministry of Environment

Wildlife Species Inventory Home

Wildlife Species Inventory (WSI) is managed by the Knowledge Management Branch in the Ministry of Environment.

The Wildlife Inventory Team consists of regional Fish and Wildlife inventory biologists and Ecosystem Information Section staff. The purpose of the team is to obtain, store, and provide access to information about wildlife species inventory in British Columbia. Wildlife species inventories include all surveys undertaken to determine the presence or abundance of any wildlife species.

- [Search for Data](#)
- [About the Data](#)

Inventory Projects and Surveys

The following links describe the data format, data templates, and report structure required to complete a data submission:

- [Survey Method and Data Manuals](#)
- [Reports, Data, and Submission Overview](#)
- [Data Templates](#)
- [Project Design](#)
- [Frequently Asked Questions](#)
- Go to [Submit Inventory Data](#)

Incidental Observations

- Go to [Submit Incidental Observations](#)

[↑ TOP](#)

- At minimum, need UTM, Date, Species, Number

Thank You!



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- Racer – Karl Larsen
- Snake Habitat – Jessica Harvey
- Tailed Frog Habitat – Mark Phillpotts and Francis Iredale
- Little Brown Bats – Dave Riggs, Flickr
- Townsend's Big Eared Bat – U.S Fish and Wildlife Service, Flickr