

SPECIES OF MANAGEMENT CONCERN FOCUS LIST - BRITISH COLUMBIA TIMBER SALES PEACE-LIARD BUSINESS AREA

Group	Category	Common Name	Scientific Name	Reason for Inclusion as Focus Species
Plant	Lichen	Bottlebrush Frost	<i>Physconia detersa</i>	High Risk Rank
Plant	Lichen	Cryptic Paw	<i>Nephroma occultum</i>	High Risk Rank
Plant	Lichen	Electrified Millepede	<i>Anaptychia crinalis</i>	High Risk Rank
Plant	Lichen	Greater Green Moon	<i>Dendrocosticta wrightii</i>	High Risk Rank
Plant	Vascular Plant	Canada Ricegrass	<i>Piptatheropsis canadensis</i>	High Risk Rank
Animal	Amphibians	Western Toad	<i>Anaxyrus boreas</i>	Actively managed by BCTS
Animal	Birds	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Species Identified in Wildlife Act
Animal	Birds	Barn Swallow	<i>Hirundo rustica</i>	Actively managed by BCTS
Animal	Birds	Bay-breasted Warbler	<i>Setophaga castanea</i>	High Risk Rank
Animal	Birds	Canada Warbler	<i>Cardellina canadensis</i>	High Risk Rank
Animal	Birds	Common Nighthawk	<i>Chordeiles minor</i>	Actively managed by BCTS
Animal	Birds	Connecticut Warbler	<i>Oporornis agilis</i>	Identified Wildlife Species
Animal	Birds	Gyrfalcon	<i>Falco rusticolus</i>	Species Identified in Wildlife Act
Animal	Birds	Lewis's Woodpecker	<i>Melanerpes lewis</i>	High Risk Rank
Animal	Birds	Northern Goshawk, atricapillus subspecies	<i>Accipiter gentilis atricapillus</i>	Actively managed by BCTS
Animal	Birds	Olive-sided Flycatcher	<i>Contopus cooperi</i>	High Risk Rank
Animal	Birds	Osprey	<i>Pandion haliaetus</i>	Species Identified in Wildlife Act
Animal	Mammals	Bighorn Sheep	<i>Ovis canadensis</i>	Identified Wildlife Species
Animal	Mammals	Black Bear	<i>Ursus americanus</i>	Actively managed by BCTS
Animal	Mammals	Caribou (Boreal Population)	<i>Rangifer tarandus pop. 14</i>	High Risk Rank
Animal	Mammals	Caribou (Central Mountain Population)	<i>Rangifer tarandus pop. 18</i>	High Risk Rank
Animal	Mammals	Caribou (Northern Mountain Population)	<i>Rangifer tarandus pop. 15</i>	High Risk Rank
Animal	Mammals	Fisher - Boreal Population	<i>Pekania pennanti pop. 4</i>	Identified Wildlife Species

Animal	Mammals	Grizzly Bear	<i>Ursus arctos</i>	Identified Wildlife Species
Animal	Mammals	Little Brown Myotis	<i>Myotis lucifugus</i>	Actively managed by BCTS
Animal	Mammals	Moose	<i>Alces alces</i>	Identified Wildlife Species
Animal	Mammals	Mountain Goat	<i>Oreamnos americanus</i>	Identified Wildlife Species
Animal	Mammals	Northern Myotis	<i>Myotis septentrionalis</i>	Actively managed by BCTS
Animal	Mammals	Stone's Sheep	<i>Ovis dalli stonei</i>	Identified Wildlife Species
Animal	Mammals	Wolverine, luscus subspecies	<i>Gulo gulo luscus</i>	Actively managed by BCTS
Animal	Ray-finned Fishes	Bull Trout	<i>Salvelinus confluentus</i>	Actively managed by BCTS

2022-07-27

Bald Eagle (*Haliaeetus leucocephalus*)

Description:

- Large powerful raptor.
- Characterized by the white head and tail at maturity.
- Adults have black body that contrasts with the white head and tail.
- Can reach one meter tall at maturity.
- Wingspan of two meters.
- Large yellow bill.
- Female is larger than male.
- Immature eagles are mostly dark for one to two years before white begins to appear.
- Time to maturity approximately four years, can vary.



Photo Credit: Miep Burgerjon.

Biology:

- Food consists of small birds, mammals and fish as well as scavenging carrion.
- Eagles mate for life, but will mate again if one mate dies.
- Nests are large stick structures, usually constructed on the top of large trees.
- There may be one or two alternate nests in the breeding territory.
- Nests can be constructed on cliffs if no suitable trees exist.
- One to three dull coloured eggs are laid.
- Incubation is approximately 35 days.
- Young fledge in 11 to 13 weeks.
- Susceptible to human disturbance.
- They will nest in urban areas where suitable habitat exists.

Habitat:

- Forested, riparian, marine and grassland habitats throughout British Columbia.
- Nesting and foraging activities are common near water.
- Higher populations occur near the Pacific Region near fjords, and estuaries.
- Some inland populations migrate to the Pacific Regions after freeze up.
- Prefer forested shorelines and waterways, lakes.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Phenology:

			Breeding			Parental Care					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Bald Eagle (*Haliaeetus leucocephalus*)



Business Area Specific Management Actions:

- Establish a minimum 100-meter buffer (WTRA) on bald eagle stick nest. If possible, exclude the feature outside the block shape.

Status:

- SARA Schedule: Not Listed.
- Provincial List: Yellow.
- Identified Wildlife: Yes.

BEC Zones:

- BAFA, BG, IDF, PP, CMA, CWH, ESSF, ICH, MH, BWBS, IMA, SBPS, SWB, CDF, MS.

Natural Resource District:

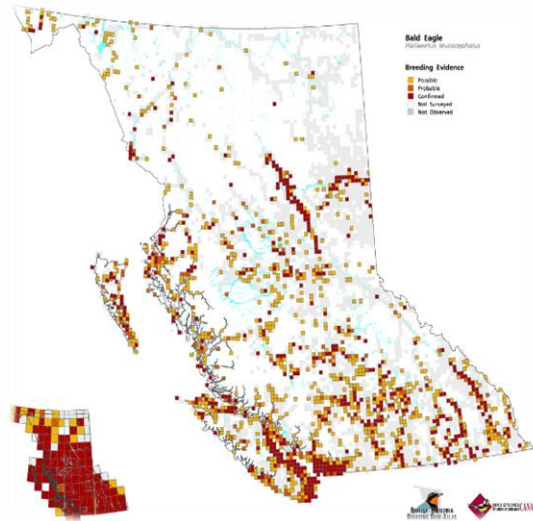
- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Haida Gwaii, Thompson Rivers, Rocky Mountains, Selkirk, One Hundred Mile House, Cascades, Sunshine Coast, Okanagan Shuswap, Ft. Nelson, Peace, Mackenzie, Prince George, North Island-Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Range:

- Bald Eagle is found throughout British Columbia, from valley bottoms to high elevations.
- Majority of birds are concentrated along the coast and inland stream habitats.
- Small numbers winter throughout coastal British Columbia.



Photo Credit: [inaturalist. Immature Bald Eagle.](#)



Map Credit: [birdatlas](#)

Barn Swallow (*Hirundo rustica*)

Description:

- Medium sized songbird, about the size of a sparrow, 15-18cm length, 29-32cm wingspan.
- Back and tail distinctive iridescent blue, light brown or rust stomach, chestnut coloured throat and forehead.
- Distinctive long forked tail and pointed wings.
- Streamlined bodies, for acrobatic flight.
- Male and female similar size.
- Female not as brightly coloured and shorter tails.
- When perched they look conical due to flat short head, short neck, long body.

Biology:

- Aerial insectivore.
- Diet consists of feeding on beetles, bees, wasps, ants, butterflies, moths, and other flying insects.
- Usually take relatively large, single insects rather than feeding on swarms of smaller prey.
- Nests in barns or other buildings, under bridges, in caves or cliff crevices.
- Clutch size 3-7. Often 2 broods, except in far north.
- Incubation lasts 13-17 days, mainly or totally by female.
- Fledge at 18-23 days, stay together and are fed by parents for about a week.
- Females first breed at 1 year, males may remain unpaired until 2 years old.
- Adults often have same mate in successive years. Eggs are creamy or pinkish white, spotted with brown, lavender and gray.

Phenology:

		Breeding, Fledging, Parental Care									
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec



Photo Credit: Miep Burgerjon

Habitat:

- Open grasslands, fields, over water, and open forest cutblocks where nesting habitat exists.
- Often found near water, can be small ponds.
- During breeding season these birds can be found at mud puddles sourcing mud for nest building.
- This is a long-distance migrating bird.
- Spending their summers in North America and their winters in Central or South America.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Buffer active migratory bird nests by minimum >30m on all sides until after nesting season or after the nest is confirmed inactive

Barn Swallow (*Hirundo rustica*)

Photos Credit: [inaturalist](#)

Status:

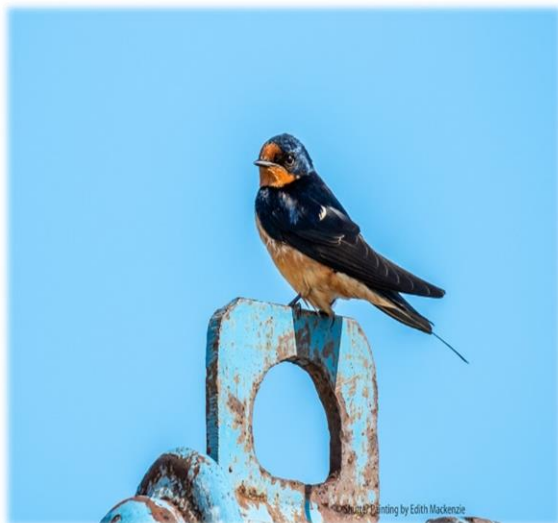
- SARA Schedule: 1-Threatened.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

- BAFA, BG, IDF, PP, CDF, CWH, ESSF, ICH, MH, BWBS, IMA, SBPS, SBS, SWB, MS.

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Haida Gwaii, Thompson Rivers, Rocky Mountains, Selkirk, One Hundred Mile House, Cascades, Sunshine Coast, Okanagan Shuswap, Ft. Nelson, Peace, Mackenzie, Prince George, North Island-Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

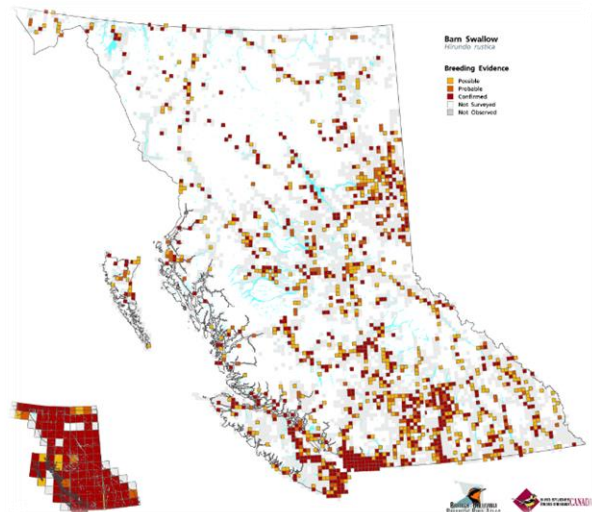


Vocalization:

- https://www.allaboutbirds.org/guide/Barn_Swallow/sounds

Range:

- Barn Swallows are found throughout British Columbia.
- One of the most common widespread birds in British Columbia and the World, but is threatened by habitat loss, climate change/earlier Springs, and declining insect populations.
- Can be found from low elevations in open habitat to alpine meadows.



Bay-breasted Warbler (*Setophaga castanea*)

Description:

- Small songbird, 14 cm in length.
- Breeding plumage males have black face; chestnut crown, throat and sides.
- Cream coloured patch on sides of neck, and on belly.
- Two white wing stripes contrasts with the dark olive-streaked upperparts.
- Female similar in colour but duller.
- Fall colours have olive green upperparts with two white wing bars, dull yellow underparts.
- Male and female similar size.
- Bay-breasted Warblers are rare and difficult to identify because of their low numbers.



Photo Credit: [Borealbirds](#)

Biology:

- Diet consists of a variety of insects, spiders and larvae.
- Specialized feeder by feeding in the medium to low medium heights in deciduous forests, and middle and upper canopy of conifer forests.
- Populations tend to increase with outbreaks of spruce budworm and tent caterpillar.
- Builds a cup style, hair lined nest of twigs, grass and needles in midlevel canopy of conifer trees.
- Clutch size 3-7, usually one brood.
- Eggs are white with brown markings.
- Incubation by female lasts 12-13 days.
- Young fledge in 10-12 days.
- Adults continue to feed for several days post fledging.
- Adults are annually monogamous.
- Residency is short in BC, arriving in late May and leaving in early July.

Habitat:

- Coniferous (spruce) and mixed conifer deciduous forests of mature and old age classes.
- Also uses conifer and mixedwood riparian corridors where multi-layered canopies and frequent openings exist.
- This is a long-distance migrating bird.
- Spending their summers in North America and their winters in Central or South America.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Phenology:

												Nest/Fledge	
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec		

Bay-breasted Warbler (*Setophaga castanea*)



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Business Area Specific Management Actions:

- Minimize timber harvesting between May and August in areas with potential concentration of species.
- Buffer active migratory bird nests by minimum >30m on all sides until after nesting season or after the nest is confirmed inactive

Status:

- SARA Schedule: Not Listed.
- Provincial List: Red.
- Identified Wildlife: Yes.

BEC Zones:

- BWBS, MS.

Natural Resource District:

- Ft. Nelson, Peace.

Vocalization:

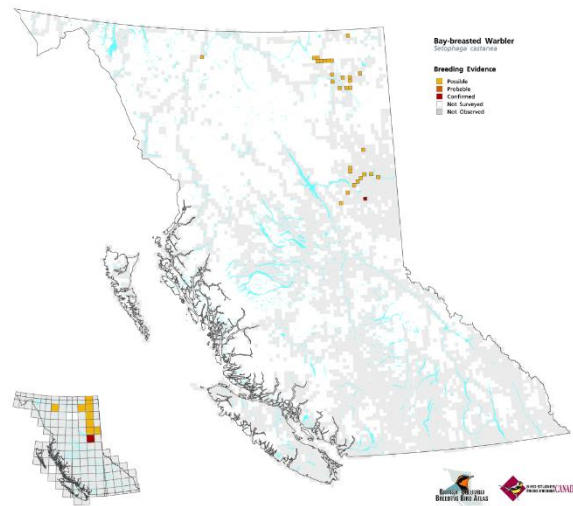
- https://www.allaboutbirds.org/guide/Bay-breasted_Warbler/sounds

Range:

- Bay-breasted Warbler is only found in Northeast British Columbia.
- Home range size is not well understood, but likely increases with decreasing food availability.
- Migrants enter British Columbia from Alberta.



Photos Credit: [inaturalist](#)



Map Credit: [birdatlas](#)

Canada Warbler (*Cardellina canadensis*)



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BC Timber Sales

Description:

- Small songbird, 13 cm in length.
- Colouration, dark greyish black above, bright yellow underbelly with short black neck stripes.
- Female and immatures similar in colour but fainter neck stripes.
- Yellow around eyes, throat and back of upper bill.
- No white in wings or tail.
- Relatively long tail for its size.
- Male and female similar size.
- The Canada Warbler bright yellow colour are distinctive and can help to identify this bird.

Biology:

- Diet consists almost exclusively of insects, and spiders.
- Feeds on the ground or off the underside of vegetation in the understory vegetation of mixed and deciduous forests.
- Female selects nests on or near the ground.
- Cup style nest is built in areas of dense shrubs and woody vegetation.
- Clutch size 2-6, one brood.
- Eggs are creamy with specks of small brown spots and blotches.
- Incubation by female lasts 11-12 days.
- Adults continue to feed young.
- Usually only one brood.
- Adults are annually monogamous.

Phenology:

				Breeding		P. Care/Migration					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

P. Care: Parental Care.



Photo Credit: [inaturalist](#)

Habitat:

- Coniferous (spruce) and mixed conifer deciduous forests of mature and old age classes.
- Requires a well-developed shrub layer.
- Close to or within riparian areas.
- Can be found in disturbed areas as long as there is a well-developed shrub layer.
- Spending their summers in North America (mostly Canada) and their winters in South America.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Canada Warbler (*Cardellina canadensis*)



Business Area Specific Management Actions:

- Minimize timber harvesting between May and August in areas with potential concentration of species.
- Buffer active migratory bird nests by minimum >30m on all sides until after nesting season or after the nest is confirmed inactive

Status:

- SARA Schedule: 1-Threatened.
- Provincial List: Blue.
- Identified Wildlife: No.

BEC Zones:

- BWBS, CDF, CWH.



Photos Credit: [inaturalist](#)

Natural Resource District:

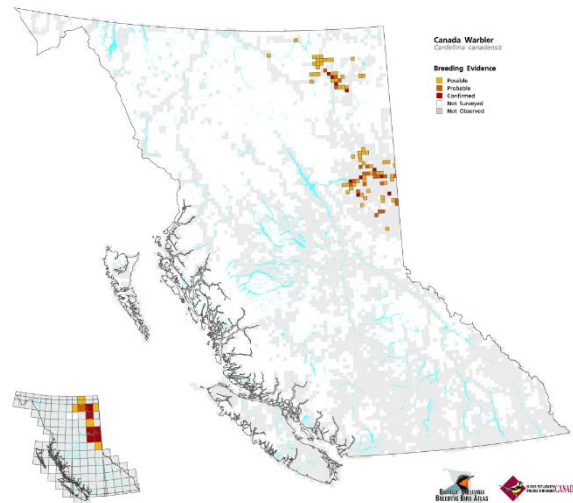
- Ft. Nelson, Peace.

Vocalization:

- https://www.allaboutbirds.org/guide/Canada_Warbler/sounds

Range:

- Canada Warbler is only found in Northeast British Columbia.
- Home range is actively defended.
- Home range varies from 1-3.3 hectares depending on quality of habitat.
- Migrants enter British Columbia from Alberta.



Map Credit: [birdatlas](#)

Common Nighthawk (*Chordeiles minor*)

Description:

- Medium sized bird of the nightjar family.
- Brownish body with yellowing on side of face and back of neck.
- Body with white spots on upperside, belly with narrow white horizontal bars.
- Dull yellow eye ring.
- Breeding males, white throat, large white wing patch, white terminal tail band.
- Breeding female, cream buff throat, mottled wing patch, no white wing patch, belly wide white horizontal barring.
- In flight notice the wide wing bars past the elbow of wing. Tail is slightly notched at the terminus.
- Distinctive by its long narrow pointed wings and wing bars.
- Length 22-24cm, wingspan 50-57cm.
- Difficult to locate on nests due to well camouflaged plumage.

Biology:

- Diet consists exclusively of flying insects, and flies.
- A crepuscular bird feeding while in flight, usually at dawn and dusk.
- Nests are located on open ground, gravel beaches, rocky outcrops, and open forest floors that match their plumage colouration.
- Have also been found in urban areas on gravel roofs and golf courses.
- Female selects nest site.
- Nests are not constructed but rather a location is selected.
- Clutch size 2, one to two broods.
- Eggs are creamy white to pale grey, speckled with grey, brown and black.
- Incubation by female lasts 16-20 days.
- Nestlings stay in nest 17-18 days.
- Mostly solitary except during migration when they flock together.

Phenology:

				Breeding		Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec



Photo Credit: [Parks Canada](#)

Habitat:

- Semi open areas where flying insects are common.
- Cultivated fields, rangelands, farmlands, marshes, sloughs, large ponds, beaches, lakes, slow moving rivers, mixed open forests, estuaries, sand and gravel bars, rock outcrops, urban fields, golf courses, gravel and dirt roads, reclaimed sites, and early regenerating clearcuts, transmission lines and subalpine.
- Nests are usually close to the feeding habitat.
- Spend their summers in North America (mostly Canada) and their winters in South America.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Common Nighthawk (*Chordeiles minor*)



Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Prescribe CWD levels consistent with the Results and Strategies.
- Prescribe CWD piles on the harvest area.

Status:

- SARA Schedule: 1-Threatened.
- Provincial List: Yellow.
- Identified Wildlife: No.

BEC Zones:

- BG, BWBS, CDF, CWH, ESSF, ICH, IDF, MH, MS, PP, SBPS, SBS, SWB.

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Haida Gwaii, Thompson Rivers, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, North Island-Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Vocalization:

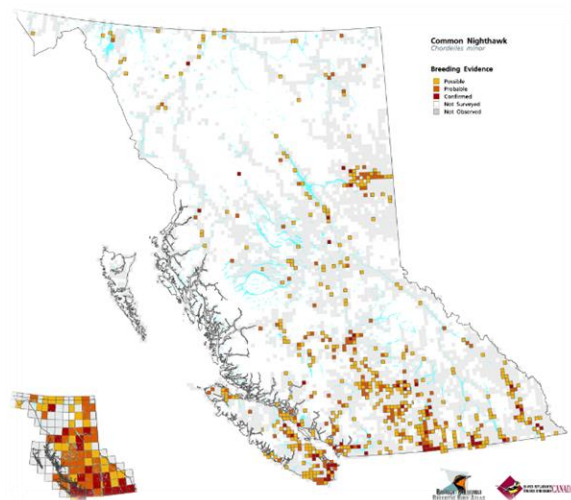
- https://www.allaboutbirds.org/guide/Common_Nighthawk/sounds

Range:

- Common Nighthawk is found throughout British Columbia.
- Less common in the northern latitudes and higher elevations.
- Considered a long distance migrate as some travels up to 11,000 km from Argentina.



Photos Credit: [Parks Canada](https://www.parks.ca.gov/)



Map Credit: [birdatlas](https://www.birdatlas.org/)

Connecticut Warbler (*Oporornis agilis*)

Description:

- Small songbird, 13-15 cm in length.
- Breeding males have grey hood extending to the lower throat, a whitish eye ring.
- Olive to olive brown upper side.
- Yellowish under side.
- Head is grey.
- Females slightly duller than males, immatures have brownish head.
- Male and female similar size.

Biology:

- Diet consists of insects, spiders, snails, eggs of insects and spiders, small berries and seeds.
- Feeds by gleaning prey from the ground, fallen logs, and low shrubs and herbs.
- Males select the territory for nesting.
- Cup style nest is built on the ground in areas of dense shrubs and woody vegetation.
- Clutch size 3-5, usually only one brood.
- Eggs are creamy white with dark speckles.
- Incubation by female lasts 12-13 days.
- Adults continue to feed young.
- Adults are annually monogamous.

Phenology:

				Breeding		Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec



Photo Credit: [friresearch](https://www.friresearch.com)

Habitat:

- Deciduous forests of immature, mature and old age classes.
- Generally, prefer aspen forests, but use cottonwood and spruce forests as well.
- Requires a well-developed shrub layer.
- They may require mid canopy level space with noticeable gaps in cover between the dense, shrubby understory.
- Nests are usually well concealed with overstory vegetation or coarse woody debris.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Connecticut Warbler (*Oporornis agilis*)



Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimize timber harvesting between May and August in areas with potential concentration of species.
- Buffer active migratory bird nests by minimum >30m on all sides until after nesting season or after the nest is confirmed inactive

Status:

- SARA Schedule: Not Listed.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

- BWBS, CWH.



Photos Credit: [inaturalist](#)

Natural Resource District:

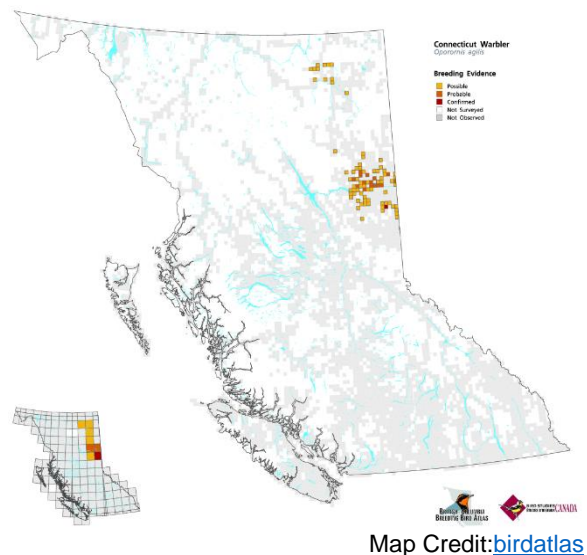
- Mackenzie, Prince George, Fort Nelson, Peace.

Vocalization:

- https://www.allaboutbirds.org/guide/Connecticut_Warbler/sounds

Range:

- Connecticut Warbler is only found in Northeast British Columbia.
- Home range is actively defended.
- Home range varies from 0.25-0.5 hectares.
- Long distance migrants spending winters in South America.



Gyr Falcon (*Falco rusticolus*)

Description:

- The largest of the falcon's, adults 51-64cm.
- White eyebrow stripe and narrow mustache.
- Varies in colour from brown, to grey and white.
- In flight, armpits of wings show blackish patches.

Biology:

- Nests are widely scattered on isolated upland cliffs, buttes, rock outcrops, river bluffs or cliffs surrounded by tundra.
- Gyrfalcons will use the unused nest of eagles or ravens.
- Nests range from no construction, to on the ground with little construction to sticks nest built by other birds.
- Nests are often protected by overhangs and away from the prevailing winds.
- Clutch size 3-5, only one brood.
- Eggs white to reddish brown, with variable cinnamon spots.
- Incubation by both parents lasts about 34-36 days.
- Young remain in nest for up to 49-56 days.
- Annually monogamous.
- Diet consists of Willow Ptarmigan and Rock Ptarmigan but also hunt other birds, including seabirds, waterfowl, shorebirds and songbirds.
- Also hunt mammals such as hares, ground squirrels, lemmings, and young arctic fox.
- Gyrfalcon take prey in flight, it makes most of its captures by striking prey and driving it to the ground rather than grasping it in the air.

Phenology:

			Nesting			Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec



Photo Credit: allaboutbirds

Habitat:

- Open arctic country, from alpine tundra to grasslands and marshes.
- Can be found on offshore islands, barren lands with rocky outcrops, river bluffs, lake bluffs, and mountainous terrain up to more than 5,000 feet in elevation.
- Breeds in the far north, year-round in subarctic and arctic.
- During non-breeding birds may venture further south to the northern United States.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Gyr Falcon (*Falco rusticolus*)



Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 100-meter buffer (WTRA) on stick nest.

Status:

- SARA Schedule: Not Listed.
- Provincial List: Blue.
- Identified Wildlife: No.

BEC Zones:

- BAFA, BG, BWBS, ICH, IDF, ESSF, SBPS, SBS, CDF, CWH, SWB, IMA, MS, MH, CMA.

Natural Resource District:

- Chilliwack, Sea to Sky, Sunshine Coast, Nadina, Skeena Stikine, Coast Mountains, Quesnel, Cariboo – Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, Prince George, Mackenzie, Stuart Nechako, North Island – Central Coast, Campbell River, South Island.

Vocalization:

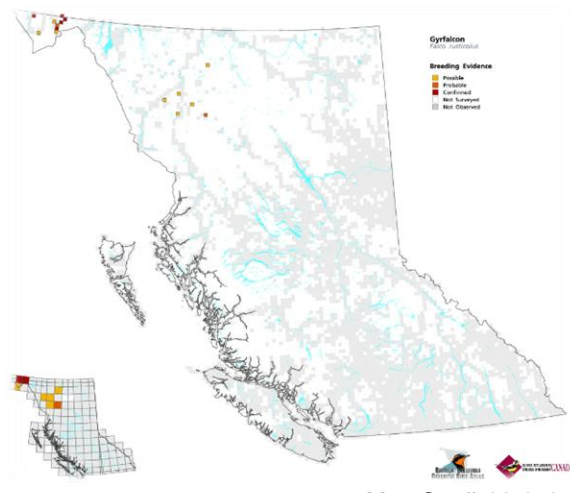
- <https://www.allaboutbirds.org/guide/Gyrfa/icon/sounds>

Range:

- In British Columbia the Gyr Falcon is mostly in the northwest.
- Non-breeding birds may migrate along the west coast to the northern United States for wintering.



Photo Credit: allaboutbirds



Map Credit: birdatlas

Lewis's Woodpecker (*Melanerpes lewis*)



BCTS
BC Timber Sales

Description:

- Medium sized (26-28 cm) woodpecker.
- Dark green upperparts (back of head, back, wings and tail), a silvery grey collar, maroon face and reddish pink breast and belly.
- Sexes are similar in appearance, with the male being slightly brighter than the female.
- Juveniles are darker than adults and either lack or have subdued grey, maroon and pink in their plumage.
- In flight, it resembles the American Crow or Clark's Nutcracker more than other woodpeckers.
- Flight is direct and even with deep wing beats, other woodpeckers flight is undulating.



Photo Credit: [inaturalist](https://www.inaturalist.org)

Biology:

- Diet varies depending on time of year from insects in spring and early summer, to fruit and berries late summer.
- Insects are foraged for from air, bark and foliage of trees and shrubs and off the ground.
- Lewis's Woodpecker is not a wood boring forager like other woodpeckers.
- In winter they forage exclusively on fruit and berries.
- Nests are excavated in large diameter trees with intermediate decay conditions.
- Nest cavities can be re-used.
- Clutch size of 2-8, one brood annually.
- Eggs are opaque white.
- Incubation by both parents 13-16 days.
- Nestlings stay in nest 28-34 days.

Habitat:

- Occurs in valley bottoms, open woodlands, riparian areas, and grass lands with scattered trees.
- Large diameter trees with partial decay, or dead trees with advanced decay are valuable for nesting.
- Often nest trees are Ponderosa Pine and or Black Cottonwood.
- Burned-over stands of Douglas-fir, mixed conifer, deciduous woodlands, grassland with scattered decaying trees, and suburban areas with large trees are also used.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Phenology:

				Breeding		Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Lewis's Woodpecker (*Melanerpes lewis*)



Photos Credit: [inaturalist](#)

Business Area Specific Management

Actions:

- Establish a windfirm, forested retention area centered around the nest tree; avoid constructing roads or trails within patch
- Retain large-diameter, decayed nest tree species; a single nest tree may be reused over many years
- Safety concern: dead and defective trees considered for retention should be located within a suitably-sized retention area or have a danger tree assessment conducted

Status:

- SARA Schedule: 1-Threatened.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

- BG, CDF, CWH, ICH, IDF, PP, SBS.

Natural Resource District:

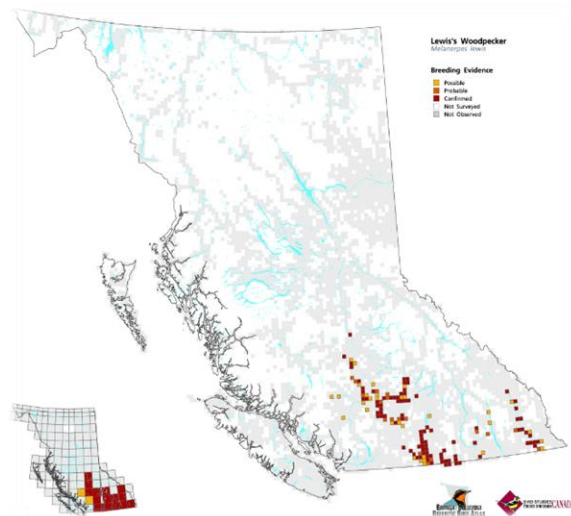
- Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Fort Nelson, Peace.

Vocalization:

- https://www.allaboutbirds.org/guide/Lewis_Woodpecker/sounds

Range:

- Lewis's Woodpecker is found only in southern British Columbia.
- Distribution is patchy with birds concentrated in areas of suitable habitat.



Map Credit: [birdatlas](#)

Northern Goshawk *atricapillus* (*Accipiter gentilis atricapillus*)



Description:

- There are two subspecies of the Northern Goshawk in British Columbia, *Atricapillus* subspecies breeds throughout the interior while *Laingi* subspecies breeds in the coastal rainforests west of the Coast Mountains.
- A large (60cm long) sturdy hawk.
- Long tail rounded at the tip with a thin white band.
- Broad round tipped wings.
- Wing span of around one meter.
- The bill and claws are bluish gray to black.
- Noticeable feature is the white eye stripe over blood red eyes.
- In adults the back is blue gray.
- The head has a distinctive white superciliary line separating a black cap from the whitish sides of the crown.
- Underparts are whitish to pale gray with fine horizontal wavy lines.
- Darker gray streaks on the lower breast, abdomen, and tibiae.
- Adult females may be more brownish above.
- Females are larger than males.
- Juveniles are browner with heavy streaking below, and yellow eyes.

Biology:

- The Northern Goshawk diet varies from birds, small mammals, amphibians and reptiles and insects.
- They hunt below the canopy in open forests.
- Stick nests are built under the canopy in large trees.
- The same nest is used year after year, but can have alternate nests.
- Clutch size of 2-4, one brood annually.
- Eggs are bluish white.
- Incubation by female takes 28-32 days.
- Nestlings stay in nest 34-35 days.

Phenology:

			Breeding			Nestling/Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec



Photo Credit: [inaturalist](#)

Habitat:

- Mature and old growth forests for nesting.
- Open and dense forests of all types for foraging.
- Tree snags, coarse woody debris and open forests are all important habitat attributes.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Northern Goshawk *atricapillus* (*Accipiter gentilis atricapillus*)



Photos Credit: [inaturalist](#)

Business Area Specific Management Actions:

- Buffer stick nests by >200m with a hard boundary, where practicable; include as many known nests within the reserve as possible; connect the reserve to adjacent forest to create a habitat area >25 ha
- Restrict harvesting and roadbuilding activities within 500m of active nests between Feb 15 – Aug 15

Status:

- SARA Schedule: Not Listed.
- Provincial List: Blue.
- Identified Wildlife: No.

BEC Zones:

- PP, ESSF, ICH, IDF, PP, MS, SBS, SWB, BWBS.

Natural Resource District:

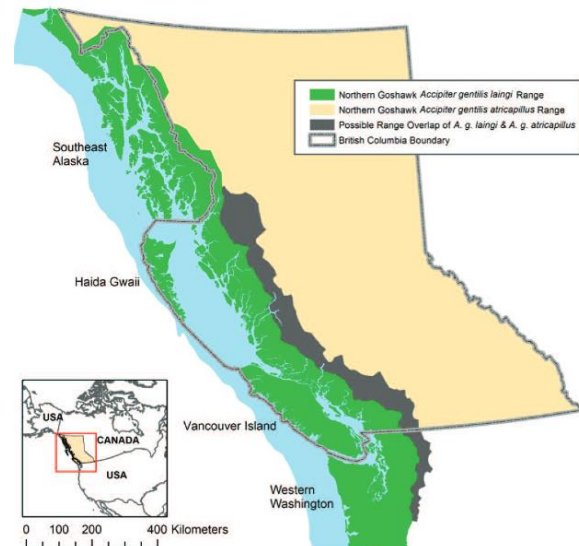
- Nadina, Skeena Stikine, Quesnel, Cariboo Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Mackenzie, Prince George, Coast Mountains, Stuart Nechako, Fort Nelson, Peace.

Vocalization:

- https://www.allaboutbirds.org/guide/Northern_Goshawk/sounds

Range:

- Interior of British Columbia. Essentially a non-migratory bird, but will occasionally move south in response to prey availability.
- Residents use up to 2400 hectares for foraging.



Olive-sided Flycatcher (*Contopus cooperi*)



Description:

- Largest of the Pewee family.
- Medium sized (18-20cm) songbird.
- Dark brownish olive gray upperparts, with whitish throat and breast and olive gray sides.
- A short tail.
- Large beak.
- Erect crest on head.
- An aerial foraging specialist, foraging near or at the forest canopy level.



Photo Credit: [inaturalist](https://www.inaturalist.org)

Biology:

- Diet varies but most important are flying bees, wasps, and ants. Other prey species include flies, moths, beetles and dragonflies.
- Nests, cup style, are constructed mostly on conifer trees near the end of a branch.
- Nest site is often high on the tree and away from the trunk.
- Clutch size of 2-4, one brood annually.
- Eggs are creamy white or buff with ring of brownish spots on large end.
- Incubation by both parents 13-14 days.
- Nestlings stay in nest 21-23 days.
- Annually monogamous.

Habitat:

- Open conifer and mixedwood forests. Often near water or wetlands.
- Tall snags or residual trees are needed to defend territory and searching for prey.
- Highest densities are near mature trees surrounded by disturbed forests (burns or cutblocks).
- Open disturbed areas are important for foraging.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Phenology:

				Breeding		Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Olive-sided Flycatcher (*Contopus cooperi*)



Photos Credit: [inaturalist](https://www.inaturalist.org)

Business Area Specific Management

Actions:

- Retain natural openings such as wetlands and recently burned areas, when practical.
- Retain residual trees on the harvest area (live trees and snags) to act as perching for species.
- Buffer active migratory bird nests by minimum >30m on all sides until after nesting season or after the nest is confirmed inactive

Status:

- SARA Schedule: 1-Threatened.
- Provincial List: Blue.
- Identified Wildlife: No.

BEC Zones:

- BWBS, CDF, CWH, ESSF, ICH, IDF, PP, SBS, SBPS, MH, MS, SWB.

Natural Resource District:

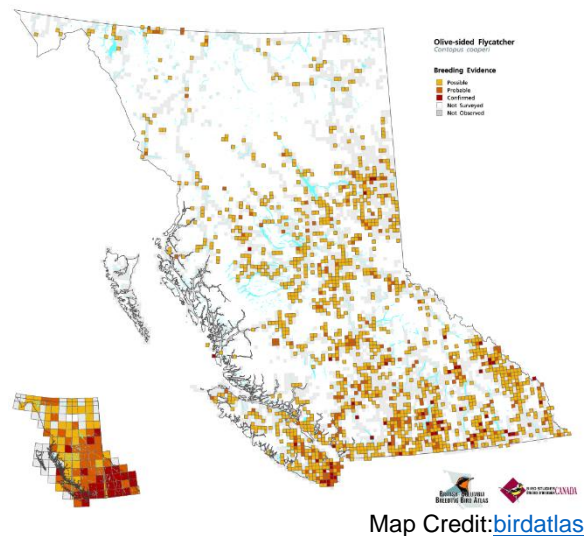
- Nadina, Skeena Stikine, Quesnel, Cariboo – Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Haida Gwaii, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Mackenzie, Prince George, Fort Nelson, Peace, North Island - Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Vocalization:

- https://www.allaboutbirds.org/guide/Olive-sided_Flycatcher/sounds

Range:

- Olive-sided Flycatchers are found throughout British Columbia.
- Territory is relatively large, from 10-20 hectares.



Map Credit: [birdatlas](https://www.birdatlas.org)

Osprey (*Pandion haliaetus*)

Description:

- Ospreys have long narrow wings, dark brown upperparts, and white underparts
- Head is white with a prominent dark eye streak, and dark wrist patches (visible in flight) on the underside of the wings.
- Immatures have pale buff edging on the dark feathers of the upper surface.
- Females are more likely than males to have a necklace of dark streaking.
- Average length 56-64 cm, wingspan 147-183 cm.



Photo Credit: [inaturalist](https://www.inaturalist.org)

Biology:

- The Osprey diet consists almost entirely of fish.
- In some locations small mammals, birds, reptiles and amphibians or crustaceans may be taken.
- Capture prey with a feet first plunge, usually into water.
- Build large stick nest on natural nest sites, usually in treetops of large trees, cliffs and on rocky ledges.
- The same nest is used year after year, but can have alternate nests.
- Nests are usually close to open, shallow water, usually within 4km, can be 20km.
- Clutch size of 1-4, one brood annually.
- Eggs are white pinkish, marked with brown olive spots.
- Incubation by female takes 35-42 days.
- Nestlings stay in nest 50-60 days and are dependent on parents for several weeks after fledging.

Habitat:

- Primarily along rivers, lakes, streams and marine environments.
- Open sites with suitable nesting sites close to water.

Field Action Required:

- If the species is observed take photos, document habitat and activity details, and GPS the location.
- If an active nest is observed, do not disturb the nest and limit activity in the immediate area. Take photos and locate with GPS waypoint if possible.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 100-meter buffer (WTRA) on stick nest.

Phenology:

				Breeding		Fledging					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Osprey (*Pandion haliaetus*)



Status:

- SARA Schedule: Not Ranked.
- Provincial List: Yellow
- Identified Wildlife: Yes.

BEC Zones:

- Not identified.



Photos Credit: [inaturalist](#)

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo - Chilcotin, Chilliwack, Sea to Sky, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Sunshine Coast, North Island - Central

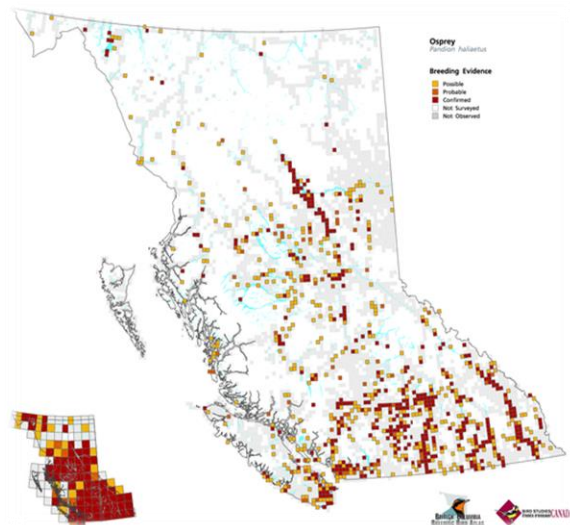
Coast, Coast Mountain, Okanagan Shuswap, Fort Nelson, Peace, Mackenzie, Prince George, North Island – Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Vocalization:

- <https://www.allaboutbirds.org/guide/Osprey/sounds>

Range:

- Throughout British Columbia during the breeding season except Haida Gwaii.



Map Credit: [birdatlas](#)

Western Toad (*Anaxyrus boreas*)

Description:

- Skin is dry granular with bumpy warts, colouration can be light to dark green to brown or even reddish.
- Distinguished by cream-coloured or white vertebral stripe running down the length of the back.
- Oval-shaped parotid glands, horizontal pupils.
- Underside is pale and coarsely mottled.
- Hind feet have two horny nodules for digging.
- Females, up to 125mm, are slightly larger than males, up to 110mm, total length.



Photo Credit: Glynnis Maundrell

Biology:

- Diet consists of worms, slugs and small insects.
- Hibernate during winter, the length of hibernation depending on the climatic and seasonal conditions. Typically, between late September and March or April.
- Hibernation is below the frost line in small mammal burrows, crevices, and can be in easily excavated substrate, such as mud and sand.
- Breeding takes place in shallow water of ponds and lakes.
- The female lays between 3000 to 12000 eggs in two long strings. Eggs are black, surrounded by a clear jelly sac. Eggs hatch in 4-12 days, and the tadpoles develop into juvenile toads within 12 weeks.
- Can travel several kilometers between breeding and summer and hibernation sites.
- Toads are often on roads in the spring and fall hunting or migrating to and from breeding and hibernation grounds.

Habitat:

- Western Toads are found in forest, wetlands, grassland, meadows, shrub lands, or subalpine or alpine meadows and dry habitats.
- Usually not far from water.
- Can be found thermoregulating in open areas, but also under structures for protection.

Field Action Required:

- If a Western Toad migration route or breeding area is observed stop work in the immediate area until biologist experienced in Western Toad can survey the area. Work in an adjacent area.
- If field crews believe a Western Toad breeding area exists take photos and locate with GPS waypoint if possible. Report to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Prescribe CWD piles on the harvest area.
- Avoid impacting shallow wetland microsites during road building.

Phenology:

Hibernation			Breeding						Hibernation		
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Western Toad (*Anaxyrus boreas*)

Status:

- SARA Schedule: 1-Special Concern.
- Provincial List: Yellow.
- Identified Wildlife: Yes.

BEC Zones:

- BG, BWBS, CDF, CWH, ESSF, ICH, IDF, PP, SBS, SWB.

Natural Resource District:

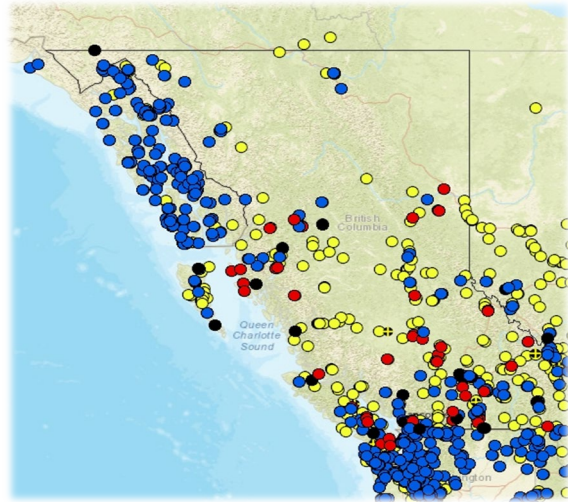
- Mackenzie, Prince George, Nadina, Skeena, Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Haida Gwaii, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, North Island – Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Vocalization:

- [Breeding call](#). Not all populations call.



Photo Credit: [Whatfrogs](#)



Map Credit: Efauna.



Photo Credit: C. Maundrell

Range:

- Western Toads are found throughout British Columbia.
- Found from low to high elevations.
- Current inventory data is lacking for the far Northeast corner of British Columbia.

Bull Trout (*Salvelinus confluentus*)

Description:

- Long slender fish with a comparatively large head and jaws.
- Two distinct forms throughout range (resident, migratory).
- Migratory - migrates upstream to spawning areas in spring.
- Migratory - live in stream for several years before migrating downstream to larger river or lake. Spend several years there before returning to stream to spawn.
- Resident - occur in small headwater streams where their entire life is spent.
- Color, olive-green to blue-grey, with anadromous fish having silvery sides.
- Pale round pink, lilac, yellow-orange or red spots along flanks and backs distinguishing them from other species.
- Tail fin is slightly forked, and pelvic or anal fins may have a leading white edge.
- Body size at maturity depends on life history strategy, resident 15-30 cm and migratory 24-73 cm long.



Photo Credit: [Fisheries & Oceans Canada](http://fisheriesandoceans.gc.ca)

Biology:

- Spawn mid Aug-late Oct with falling temperatures (5-9 °C). Southern populations, later spawning window.
- Eggs hatch late winter (Mar) onwards.
- Optimum incubation temperature 2-4 °C.
- Fry emerge from gravel Apr-May.
- Most juveniles move to larger rivers or lake by mid-summer. Others stay in spawning areas for 2-4 years.
- Voracious predators, eat other fish when available.
- Diet - terrestrial and aquatic insects, macro zooplankton, mysids, and fishes. Young diet - aquatic insects.
- Adults eat mainly fish, also small vertebrates (frogs, snakes, mice, ducklings).

Habitat:

- Sensitive to disturbance, require relatively pristine habitat.
- Habitat that is cold, clean, complex, and connected.
- Bottom of deep pools in cold rivers and large tributary streams.
- Often in moderate to fast currents with temperatures of 7-10 °C. Also, cold lakes and reservoirs.
- Stable channel and stream flow, low levels of fine substrate sediments, high stream channel complexity with various cover types, temperature ≤ 15 °C and corridors for migration favor population persistence.
- Spawning - gravel riffles of small tributary streams, including lake inlet streams.
- CWD and rubble substrate important juvenile rearing habitat.
- Home range, highly variable depending on life history strategy.
- Resident - migrate short distances to spawning grounds, while migratory fish may travel up to or over 250 km.

Phenology:

											Incubate
Hatch			Emergence				Spawning				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Photo Credit: [US Fish & Wildlife Service](http://www.fishbase.org)

Bull Trout (*Salvelinus confluentus*)



BCTS
BC Timber Sales

Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience in fish ecology surveys the area.
- Take photos and record sighting's coordinates.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimize stream crossings where practical.
- If culverts are prescribed, ensure culverts are adequately sized and properly installed.
- Prescribe retention of natural tree and shrub composition in RMZ.

Status:

- SARA Schedule: 1-Special Concern
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

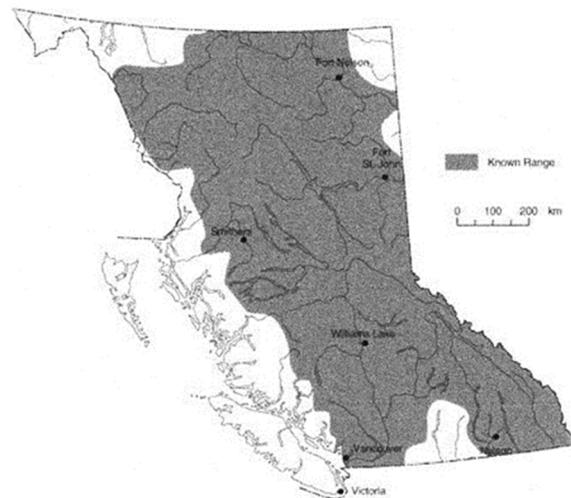
- BG, BWBS, CWH, ESSF, ICH, IDF, MS, PP, SBPS, SBS, SWB.

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, Coast Mountains, Skeena Stikine, Stuart Nechako, Mackenzie, Prince George.

Range:

- Coastal and montane areas 49 to 60 degrees latitude.
- Every major mainland drainage on both sides of Continental Divide including coastal drainages penetrating Coast Mountains.
- Not on Vancouver Island, Haida Gwaii, other coastal areas, and western tributaries of Columbia River.



Map Credit: [BC Ministry of Environment](#)

Bighorn Sheep (*Ovis canadensis*)

Description:

- California and Rocky Mountain subspecies look similar. California is slightly darker in colour, and rams' horns flare more outward.
- Upper pelage varies, dark brown to pale tan, with a whitish underside. Tail is short, tan or reddish brown in summer, grayish brown in winter.
- Late summer-fall, rams have brown coat with contrasting ivory-white rump patch, white muzzle, white trim on the back of legs. Coat fades to drab grey-brown by late winter.
- Mature male has massive horns forming C-shaped curl. Female horns are shorter and slenderer, forming a half curl. Juveniles lack horns.
- Adult rams stand 100 cm at the shoulder and weigh 90 to 135 kg while ewes are two-thirds this size.



Photo Credit: [BC Conservation Data Centre](#)

Biology:

- Winter diet mainly of graminoids with lesser consumption of forbs, shrubs, and some conifers.
- Summer diet of alpine grasses, sedges, and a diversity of forbs for forage.
- Grasslands and seral shrublands forage of bunchgrasses, fescues, bluegrass, needle grasses, forbs, and shrubs.
- Breeding early Nov – mid-Dec optimizes availability of abundant nutritious forage at parturition (late Apr–early Jun). Lambs, 3-5 kg at birth, weigh 30 kg in fall when weaned.
- Gregarious but live in sexually segregated groups. Travel in groups of 5 to 20, and up to 100.
- Young rams leave ewes when 2-3 years old and join bachelor groups.
- Ram groups, well-developed social rules and a dominance hierarchy.

Phenology:

				Yearlings Leave							
				Birth	Nursing			Wean	Breeding		
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Habitat:

- Males use 2 – 6 home ranges during a year while ewes use 2-3 seasonal ranges.
- Home ranges are part of a mountain, or a whole mountain and can be as small as 0.8 km² in mid-winter or as large as 5.9 km² in spring and fall.
- Habitats include open grasslands, alpine, subalpine, shrub-steppe, rock outcrops, cliffs, meadows, moist draws, stream sides, talus slopes, plateaus, deciduous forest, clearcut or burned forest, and conifer forest. All on moderately steep to steep slopes.
- Forests (pole/sapling to old forest) are used for security and thermal cover.



Photo Credit: [Environment & Climate Change Canada](#)

Bighorn Sheep (*Ovis canadensis*)



Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience with Bighorn Sheep surveys the area.
- Take photo and record sighting coordinates.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.

Status:

- SARA Schedule: Not Listed.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

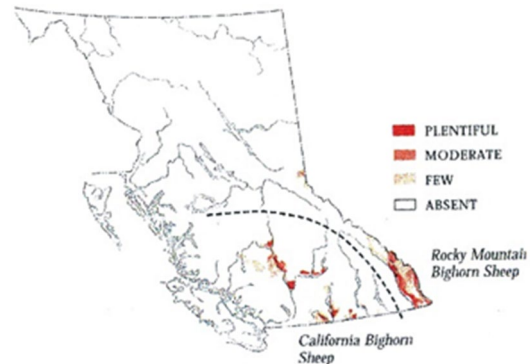
- BAFA, BWBS, ESSF; SWB.

Natural Resource District:

- Rocky Mountain, Selkirk, Okanagan Shuswap, Prince George, Stuart Nechako.

Range:

- Both sexes have a strong home range fidelity.
- California Species occupy dry valleys and mountains, Okanagan, South Cariboo, South Chilcotin regions and separated by Selkirk and Purcell from Rocky Mountain.
- Rocky Mountain found east side of the Rocky Mountain Trench (Radium to Bull River), Galton Range (Elko to US border), Front ranges west side Elk River, west slope of Rockies (Crownsnest Pass to Fording River) and Kootenay River headwaters.
- Isolated herds found near Golden and the Narroway and Belcourt drainages.
- Herds established near Chase, Castlegar, Spences Bridge, and Salmo.



Map Credit: [BC Ministry Environment, Lands & Parks](#)

Black Bear (*Ursus americanus*)



Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience with Black Bear surveys the area.
- If a potential den is observed, stop work. If safe to do so document the location of the den, take photos, and flag the den.
- Never approach a bear. If occupation status of den is unknown, stay away.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on black bear dens (WTRA). If possible, exclude feature outside of block shape.

Status:

- SARA Schedule: Not Listed
- Provincial List: Yellow.
- Identified Wildlife: No.

BEC Zones:

- BAFA, BWBS, CDF, CMA, CWH, ESSF, ICH, IDF, IMA, MH, MS, SBPS, SBS, SWB.

Natural Resource District:

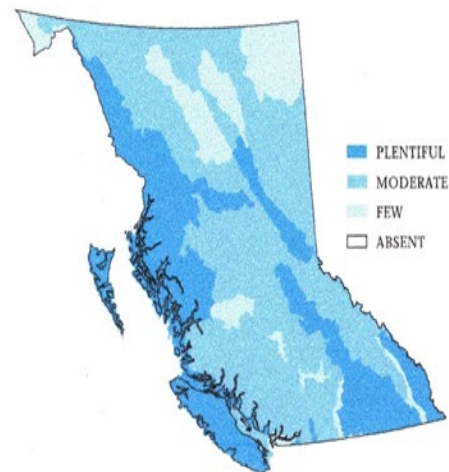
- Mackenzie, Prince George, Nadina, Skeena, Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, North Island – Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Range:

- Occupies most of BC.



Photo Credit: Brian Gustafson



Map Credit: [BC Ministry of Environment](#)

Boreal Caribou (*Rangifer tarandus*) pop. 14



BCTS
BC Timber Sales

Description:

- Boreal Caribou are non-migratory.
- Dark brown coat with creamy white neck, mane, shoulder stripe, underbelly, underside of tail, patch above each hoof.
- Large crescent-shaped hooves to provide flotation in snow and soft ground.
- Antlers of flattened, compact, and relatively dense.
- Both sexes have antlers for part of year.
- 100-120 cm at shoulder. Males weigh 160-210 kg and females 110-150 kg.

Biology:

- Adult survival is high but calf survival and recruitment to breed is very low.
- In decline from early 2000s due to habitat loss, fragmentation and alteration, and increased predation resulting from resource extraction.
- Winter diet terrestrial lichens and some arboreal lichens.
- Polygynous breeding late Sept-mid Oct.
- Small rut size (<5) compared to ecotypes.
- Calves are born late May – early Jun.
- Consistent use of mineral licks.
- Home ranges ≥ 700 km².
- Live in small, dispersed, bands throughout year, not in discrete herds.



Photo Credit: [cpawsbcc](#)

Phenology:

				Birth	Care		Breeding				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Photo Credit: [GNWT Species at Risk Committee](#)

Habitat:

- Peatland, fens, and black spruce bogs. Avoid upland areas, which support higher densities of predators (wolves, black bears) and moose.
- No access to mountainous terrain.
- Use upland, pine-dominated stands are unfavorable (deep or crusted snow) or mature black spruce (deep snow).
- Connectivity within and between range habitat is essential for survival.
- Provides forage and spatial distance needed to survive and avoid predation.
- Winter and summer ranges overlap, and habitat use does not differ by season.
- Fragmentation concentrates caribou in smaller patches, increases density, which can lead to increased predation pressure.
- Calving cows spatially segregate and utilize habitats that are inaccessible or less desirable to predators.
- Little or no evidence numbers can be maintained in areas with high levels of forestry, predation, and recreation.

Boreal Caribou (*Rangifer tarandus*) pop. 14



BCTS
BC Timber Sales

Photo Credit: [inaturalist](https://www.inaturalist.org/)

Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience in Caribou surveys the area.
- Take photos and record sighting's coordinates.
- Report the observation to supervisor and contact BCTS.



Photo Credit: [Environment Yukon](https://www.environment.yukon.ca/)

Natural Resource District:

- Fort Nelson, Peace, Mackenzie.

Range:

- Boreal forest in Northeast British Columbia.

Status:

- SARA Schedule: 1-Threatened.
- Provincial List: Red.
- Identified Wildlife: Yes.

BEC Zones:

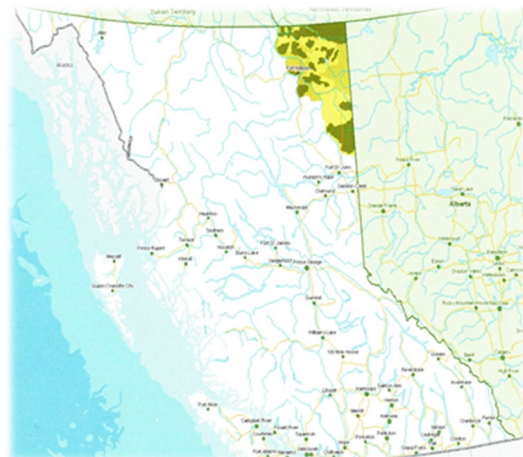
- BWBS, SBS, MS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.



Map Credit: [BC Ministry Environment](https://www2.gov.bc.ca/gov2/ministry_environment/)

Fisher - Boreal Population (*Pekania pennanti*) pop. 4

Description:

- Medium-sized carnivore.
- Long thin body characteristic of the weasel family and pointed faces, rounded ears, and short legs.
- Fur deep brown to black with lighter hairs around the face, neck, and considerable grizzling patterns around the shoulders and back.
- Females weigh 2-3 kg and measure 75-95 cm in length with the tail being about one-third of the length in both sexes.
- Males weigh 4-6 kg and 90-120 cm long.
- Tracks like mink and marten but larger.
- Subspecies recent addition to conservation list (2020).



Photo Credit: [inaturalist](https://www.inaturalist.org)

Biology:

- Single, undifferentiated species throughout their range with 2 BC populations.
- Solitary animals, interact with others during mating, territorial defense, or when raising young.
- Feeds on small to mid-sized prey, snowshoe hares, red squirrels, small rodents, grouse, birds, carrion, reptiles, amphibians, insects, and plants.
- Predators include cougar, lynx, bobcat, coyote, wolverine, other fisher, and golden eagle.
- High surface-to-volume ratio results in thermal constraints during winter.
- Mate in fall.
- 2-3 kits weigh 40-50 grams, born late Mar- early Apr, after delayed implanting.
- Natal dens always found in cavities of standing trees, generally broadleaves.
- Kits are blind, deaf, and have only a sparse covering of fine hair at birth and stay in the den for their first 8 weeks.

Habitat:

- Not numerous, vulnerable to habitat loss.
- Prefer old and mature forests, specifically riparian and dense wetland forests.
- Affinity for broadleaf stands, but conifer forests dominate most BC home ranges.
- Home range, little overlap with same sex, but male's range may overlap more than one female home range.
- Female home range - 30-50 km² while male home range - 100-200 km².
- Require movement habitat (tree and/or dense shrub cover) to safely travel between important habitats, and to access new areas when dispersing.
- Movement habitat is found in forested stands, total cover is greater than 50%.
- Cover does not need to be continuous, but openings more than 50 m wide create increased risk.

Phenology:

		Birth	Kit Care							Dispersal	
	Implant	Fert									
Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Fisher - Boreal Population (*Pekania pennanti*) pop. 4



Photo Credit: [iNaturalist](#)

Field Action Required:

- Maintain structural attributes of old forest, such as large diameter trees, complex forest structure, and elevated large woody debris to meet life requisites
- Appropriate habitat management at landscape and stand scales (BC Fisher Habitat Web Module 2020).
- Document (photo, GPS coordinates) sighting of Fisher or den. Report to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Where present, WTRAs should include some mature or old forest with >30% crown closure, CWD, and well-developed shrub layer.
- In mixed wood stands, establish WTRAs containing large diameter deciduous and coniferous species (i.e., cottonwood and spruce). Include large diameter trees with evidence of internal decay (i.e., fungal conks, broken tops, large stem scars, cavities from primary excavators).

Status:

- SARA Schedule: Not at Risk.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

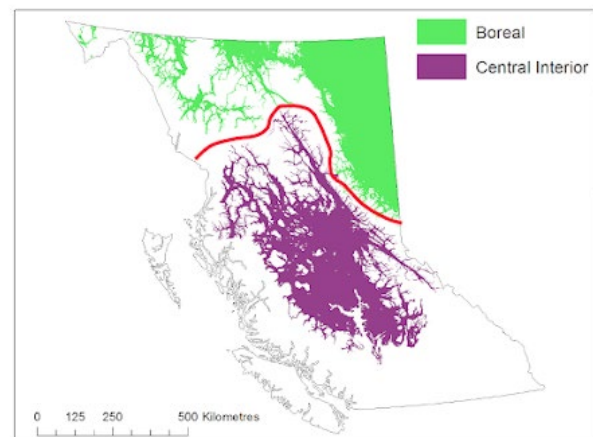
- BWBS, CWH, ESSF, ICH, MH, MS, SBPS, SBS, SWB, IDF.

Natural Resource District:

- Mackenzie, Prince George, Coast Mountains, Skeena, Stikine, Fort Nelson, Peace.

Range:

- Occur throughout northern BC, mainly east of Rocky Mountains.



Central Mountain Caribou (*Rangifer tarandus*) pop. 18



BCTS
BC Timber Sales

Description:

- Dark brown coat with creamy white neck, mane, shoulder stripe, underbelly, underside of tail, patch above each hoof.
- Large crescent-shaped hooves to provide flotation in snow and soft ground.
- Antlers of flattened, compact, and relatively dense.
- Both sexes have antlers for part of year.
- 100-120 cm at shoulder. Males weigh 160-210 kg and females 110-150 kg.



Photo Credit: [inaturalist](https://www.inaturalist.org/)

Biology:

- Adult mortality above threshold needed to maintain population numbers.
- Live in discrete herds.
- Calving cows spatially segregate and utilize habitats that are inaccessible or less desirable to predators.
- Winter diet terrestrial and arboreal lichens.
- Spring diet, use of forbs and graminoids increases and summer food is a wide variety of forbs, graminoids, lichens, fungi, and leaves.
- Forage quality and availability directly affects condition of females and calf survivorship.
- Polygynous breeding late Sept-mid Oct.
- Moderate size rut (≤ 12) compared to ecotypes.
- Calves are born late May – early Jun.
- Most calves stay with the heard they were born into.
- Calf recruitment rate in most herds below accepted number of calves required to ensure a stable or increasing population.
- Vulnerable ungulate species in a multiple predator-prey system.
- Consistent use of mineral licks.

Habitat:

- Distributed on West & East sides of Rocky Mountains.
- West side, migrate from mountains to low-elevation pine flats in early winter.
- Return to alpine and subalpine areas once snow conditions (settled) prohibit low elevation forage.
- East side, winter in mountains. Forage on windswept alpine ridges and old growth parkland and subalpine forest.
- Critical need, access to undisturbed high elevation calving range.
- Connectivity within and between range habitat is essential.
- Home range provides forage and spatial distance needed to survive and avoid predation.
- Fragmentation concentrates caribou in smaller patches, increases density, which can lead to increased predation pressure.
- Little or no evidence numbers can be maintained in areas with high levels of forestry, predation, and recreation.

Phenology:

				Birth	Care		Breeding				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Central Mountain Caribou (*Rangifer tarandus*) pop. 18



Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience in Caribou surveys the area.
- Take photos and record sighting's coordinates.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.

Status:

- SARA Schedule: 1-Threatened.
- Provincial List: Red.
- Identified Wildlife: Yes



Photo Credit: [inaturalist](#)

BEC Zones:

- BWBS, ESSF, ICH, IMA, MH, SBS.

Natural Resource District:

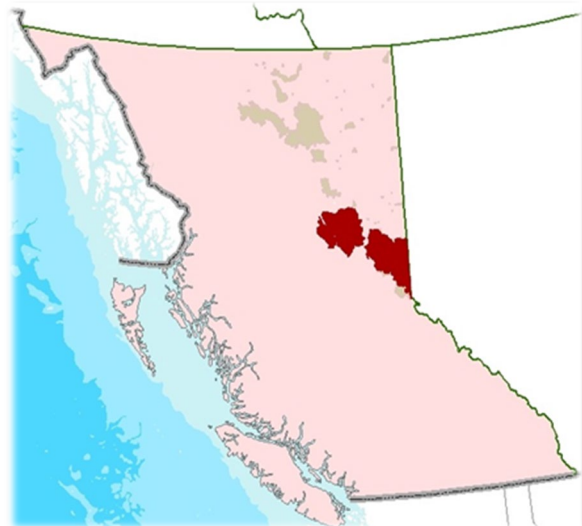
- Fort Nelson, Peace, Mackenzie. Prince George.

Range:

- East side of Rocky Mountains, south of the Peace River in British Columbia, extending South into Alberta near Banff National Park.
- Six recognized herds.



Photo Credit: [BC Ministry of Environment](#)



Map Credit: [BC Ministry of Environment](#)

Grizzly Bear (*Ursus arctos*)

Description:

- Mostly brownish to yellowish coat. Often white-tipped guard hairs giving the grizzly look. Variations occur, from almost entirely black to almost white.
- Face is concave, with small eyes (in relation to head) and rounded ears.
- Large hump on the front shoulders provides the power of the Grizzly Bear, which helps the bear dig for food and dens when denning underground.
- Large flat paws are equipped with long (5cm) claws.
- Grizzly Bears tend to be solitary animals. The exception can be during the fall salmon runs where they may congregate to feed.



Photo Credit: BC Ministry of Environment

Biology:

- Grizzly Bears are omnivorous, feeding opportunistically on large and small animals, plants, and fish.
- Salmon runs in the fall are an important food source to prepare for fall hibernation.
- Not unusual for a male to delay hibernation and be active well into the winter months.
- Dens can be excavated underground, in trees and rock caves.
- Summer is the mating months, with females displaying delayed implantation.
- Young are born in the den in January to March.

Habitat:

- Found in a wide variety of habitat from alpine to valley bottoms. Most common in higher elevation meadows and avalanche chutes.
- Avalanche tracks area a critical habitat component that provide spring foraging opportunities of emerging vegetation and roots.
- Dens are usually on steep north-facing slopes, with soils suitable for diffing and where vegetation will stabilize the roof of the den and snow will accumulate.

Phenology:

Young born											
Hibernate											
Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec

Black Bear



Grizzly Bear



Color and Size can be misleading.
Look for a combination of characteristics.

Photo

Credit: USDAFS

Grizzly Bear (*Ursus arctos*)



Field Action Required:

- If a Grizzly Bear is observed, stop work in the immediate area until the bear has moved out of the work area.
- If a potential Grizzly Bear den is observed, stop work. If safe to do so document the location of the den, take photos, and flag the den. Report the den to supervisor and contact BCTS.
- Never approach a bear. If the status of occupation of the den is unknown do not approach.

Management Recommendations:

- Establish appropriate buffer zone around feature through consultation of BMP for species, or specialist if no BMP exist for the Business Area.
- Refer to BCTS Standard Operating Procedure or Management Protocol.
- Review higher level plans, FRPA, WHAs, OGMA's, Legal Orders.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on grizzly bear dens (WTRA). If possible, exclude feature outside of block shape.

Status:

- SARA Schedule: 1-Special Concern.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

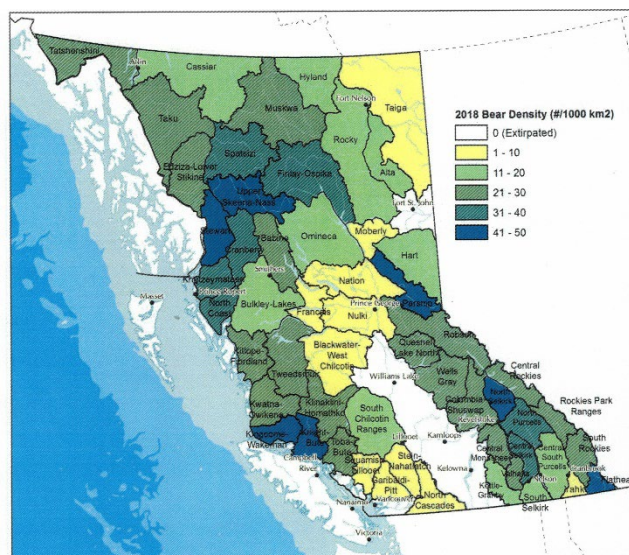
- BAFA, BWBS, CMA, CWH, ESSF, ICH, IDF, IMA, MH, MS, SBPS, SBS, SWB.

Natural Resource District:

- Mackenzie, Prince George, Nadina, Skeena, Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, North Island – Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Range:

- Grizzly Bears inhabit all of British Columbia except some of the coast islands and coastal mainland. Although there are areas where the bears are thought to be extirpated these areas may still be used.



Map Credit: [Ministry of Environment](#)

Moose (*Alces alces*)

Description:

- Adult bull 2 m at shoulder, most massive antlers of any deer family member.
- Fall, adult cows weigh 340 to 420 kg and bulls 450 to 500 kg.
- Only bulls have antlers.
- Antlers shed mid Nov-Mar.
- Long legs (aid travel in deadfalls and snow), large ears, bulbous nose, shoulder hump, and dark brown to blackish coat.
- No rump patch but have a bell of skin and hair under the throat and a large, overhanging upper lip.



Photo Credit: [Wildsafe BC](https://www.wildsafebc.com/)

Biology:

- Breed Sep-late Oct (peak mid-Sep), One calf born late May-early Jun.
- Newborns weigh 11-16 kg and stand on their first day.
- Calves eat vegetation at 2 weeks, completely weaned by fall. Weigh 134-180 kg by early winter.
- Sexually mature at 1.5 years, but peak activity starts at 4-6 years.
- Seasonal home range 5-10 km² but annual home range much larger.
- Do not defend home range and do not have year-round dominance hierarchies like Elk and Bighorn Sheep.
- Browse – summer, new growth of trees and shrubs (leaves, twigs, and bark), and vegetation associated with water.
- Winter forage, willows red-osier dogwood, cottonwood, paper birch, aspen, high-bush cranberry, false box, and subalpine fir are also important. Strip bark from willows and poplars.
- Main causes of mortality are starvation, and predators.

Habitat:

- Winter snow accumulation strongly affects populations more so than wolf density.
- Competition for food, not wolf predation or snow, has greater regulatory effect.
- Large populations may degrade habitat, resulting in population crash.
- Browsing may alter structure and dynamics of boreal forest ecosystems.
- Prefer mosaic of second-growth forest, openings, swamps, lakes, wetlands.
- Requires water bodies for foraging and broadleaf-conifer forests for winter cover.
- Uses dense shade or bodies of water to avoid heat.
- Mineral licks important sodium source.
- In mountainous areas, migrate between winter-spring ranges in valley bottoms and higher-elevation summer ranges.
- Some Moose remain in valleys year-round.

Phenology:

								Wean				
				Birth				Mate				
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Moose (*Alces alces*)



Photo Credit: [iNaturalist](#)

Field Action Required:

- If observed, document (take photos, GPS coordinates) the location.
- If a mineral lick is identified document (take photos, GPS coordinates) the location.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.

Status:

- SARA Schedule: Not Listed.
- Provincial List: Yellow.
- Identified Wildlife: No.

BEC Zones:

- BWBS, SWB, BAFA, CWH, SBPS, IDF, IMA, MS, SBS, ICH, ESSF,
- Poor habitat – BG, PP.

Natural Resource District:

- Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, Mackenzie, Prince George, North Island - Central Coast, Coast Mountains, Stuart Nechako.

Range:

- Found across entire interior of British Columbia. Most abundant in central and sub-boreal interior, northern boreal mountains, and BC's boreal plains.
- Also common in mountainous valleys, except for a few dry southern valleys. Usually absent from coastal regions but penetrate to tidewater from Bute Inlet north.



Map Credit: [E-Fauna BC Atlas](#)

Mountain Goat (*Oreamnos americanus*)



BCTS
BC Timber Sales

Description:

- Moderate-sized ungulate, stocky body, hump above shoulder, thin neck, sharply pointed, thin black horns, and long, narrow pointed ears.
- Tail and lower limbs are short.
- Hooves rather than being concave on the underside, have a thick, soft, rough-textured pad extending to the edge of the keratin hoof.
- Coat completely white or yellowish white. Color distinguishes it from other ungulates.
- Nose, horns, hooves, and dew claws are black.
- Both sexes have beard on the chin and short mane along underside of neck and short horns, 200-280 mm, that are never shed.
- Adult weights, males 70-120 kg and females 55-75 kg.

Biology:

- Rut Nov-Dec.
- 1 or 2 (rare) kids born late May-early Jun, weigh 2-3 kg, and wean 4 months.
- Adult females and young may be in small summer groups. Males are solitary but join females in fall.
- Home range 6-24 km².
- Summer diet – grasses, and forbs, also shrubs and conifers. Winter diet – mosses, lichens, also grasses, shrubs and conifers.
- Additional minerals from mineral licks.
- Remain at low elevations in spring, access earliest flush of vegetation. Spring to summer, follow new growth upward.
- Active dawn to mid-morning and late afternoon to evening.
- Predators – mountain lions, wolves, and grizzly bears.
- Threats – human intrusions and industrial and recreational disturbance.

Phenology:

			Birth					Wean	Mate	
Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Photo Credit: [E-Fauna BC Atlas](#)

Habitat:

- Alpine and subalpine. Steep grassy talus slopes, grassy cliff ledges, alpine meadows at timberline or above.
- Seek shelter and food in stands of spruce or hemlock in winter.
- Young born on rock ledges or steep cliffs.
- Migrate up and down mountains between summer and winter areas.
- Suitable escape terrain is a limiting habitat factor.
- Alpine vegetation low sodium and high potassium levels, populations obtain needed elements from mineral licks.
- Winter range, steep sites that shed snow, warm south to west exposure.

Mountain Goat (*Oreamnos americanus*)



BCTS
BC Timber Sales



7.5 * 4.8 cm



Photo Credits: [Yukon Department of Environment](#)

BEC Zones:

- BAFA, BG, BWBS, CDF, CMA, CWH, ESSF, ICH, IDF, IMA, MH, MS, PP, SBPS, SBS, SWB.

Natural Resource District:

- Chilliwack, Sea to Sky, Sunshine Coast, Thompson Rivers, 100 Mile House, Cascades

Range:

- Widespread in BC with large populations.
- All major mountain systems of mainland BC but absent from Vancouver Island and Haida Gwaii, Interior Plateau and Peace River Lowlands.

Field Action Required:

- If a Mountain Goat is observed, stop work and document (photo, GPS coordinates) the location.
- If a mineral lick is identified document (photo, GPS coordinates) the location.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.

Status:

- SARA Schedule: Not Listed.
- Provincial List: Blue.
- Identified Wildlife: No.



Map Credit: [E-Fauna BC Atlas](#)

Little Brown Myotis (*Myotis lucifugus*)

Description:

- Females slightly larger than males.
- Adults weigh 7-9 grams, 7-10 cm long, forearm 33-41 mm, and wingspan 22-27 cm.
- Fur is cinnamon buff to dark brown on back and may be glossy and slightly paler on the belly.
- Wings and tail lack fur and are dark brown.
- Ears are large compared to size of head.
- Tragus (fleshy projection which covers the entrance of the ear) is short and blunt.
- Summer, males largely solitary, and females form colonies.
- Difficult to distinguish among bat species.



Photo Credit: [Parks Canada](#)

Biology:

- Nocturnal.
- Peak feeding periods 1-2 hours after sunset and before sunrise.
- Few natural predators.
- Insectivorous, primarily feed on aquatic flies but also eat beetles, ants, crane flies, crickets, and leafhoppers.
- Forage while flying over water and semi-open areas such as rocky hillsides, lawns, fields, and forest edges
- Adjust habitat in response to seasonal changes in insect abundance.
- Breeding occurs during fall (Sep, Oct), fertilization after hibernation in spring (Feb, Mar).
- Young born May to July, fly within 3 weeks and are independent after a month.
- Migrate 50-200 km between hibernacula and summer roosts.

Habitat:

- Dry open forests as well as wet riparian areas from low elevation IDF up to 2300 meters.
- Daytime roosts protect from predation and weather extremes.
- Roost sites preferably on south to southeast aspects.
- Summer, in attics, under bridges, in hollow trees, under loose bark or shingles, or in rock crevices.
- Require open water and may concentrate at pools and streams to drink at dusk.
- Hibernating habitat poorly understood but thought to hibernate in caves or old mines with stable temperature (2-12 C).
- If undisturbed, occupy same sites year after year.

Phenology:

	Implant		Birth		Copulate						
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Photo Credit: [NL Ministry Fisheries, Forestry & Agriculture](#)

Little Brown Myotis (*Myotis lucifugus*)



BCTS
BC Timber Sales

Field Action Required:

- If a Little Brown Myotis observed stop work and do not handle bat.
- If roosting or hibernation site is identified, do not disturb the bats.
- In both instances, document (photo, GPS coordinates) the location.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- When establishing WTRAs, include large diameter deciduous trees with evidence of internal decay (i.e., fungal conk, broken tops, large stem scars, cavities from primary excavators).

Status:

- SARA Schedule: 1- Endangered.
- Provincial List: Yellow.
- Identified Wildlife: No.

BEC Zones:

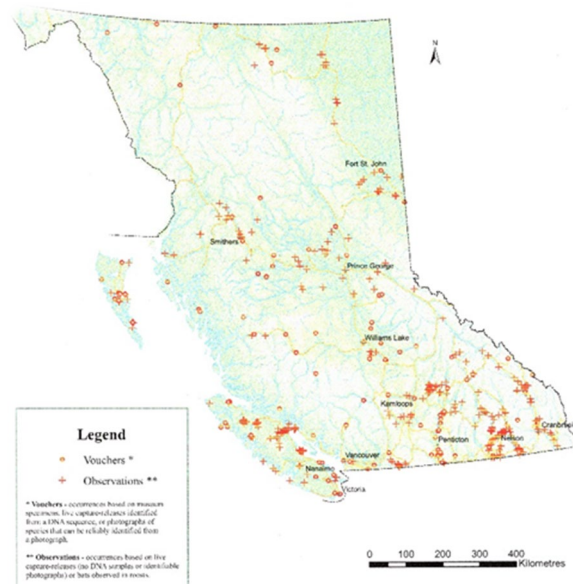
- BG, BWBS, CDF, CWH, ESSF, ICH, IDF, MH, MS, PP, SBPS, SBS, SWB.

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Haida Gwaii, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, Mackenzie, Prince George, North Island - Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako.

Range:

- Distributed in forested habitats throughout BC including Haida Gwaii and Vancouver Island.



Map Credit: [BC Ministry of Environment](http://www2.gov.bc.ca)

Northern Myotis (*Myotis septentrionalis*)



BCTS
BC Timber Sales

Description:

- Medium sized bat, recognized by long-rounded ears extending beyond tip of nose when laid forward.
- Compared to other similar sized *Myotis*, longer tail and larger wing area. Adaptations associated with gleaning.
- Color, fur cinnamon buff to dark brown on back and may be glossy and slightly paler on belly. Wings and tail lack fur and are dark brown but with long rounded ears and a dull brown shoulder spot.
- Difficult to distinguish between bat species.
- Body 78 mm long, tail is 26 mm, foot is 9 mm, ears are 17 to 19 mm, and forearm is 35 mm. Wingspan range 23-26 cm and weight 6 to 9 grams.
- Females larger and heavier than males.

Biology:

- Nocturnal.
- Copulation Aug, Sep.
- Females store sperm during hibernation, may copulate again at spring emergence.
- Ovulate at emergence (Apr, May), birth occurs 50-60 days later (Jun, Jul).
- At higher latitudes, emergence is later.
- Young may reproduce in first fall.
- No significant predators.
- Limited migrations <100 km.
- Forage, in forest, along forest edges, over forest clearings and occasionally ponds.
- Opportunistic insectivore, prey varies widely among sites and seasons.
- Capture flying insects and glean prey.
- Peak activity, 1-2 hours after sunset, with a secondary peak 7-8 h after sunset.
- Nursery colonies in cavities or beneath loose bark in trees or snags.
- Potential threat, white-nose syndrome.
- Little known of species' detailed ecology in BC.

Phenology:

			Implant	Birth	Copulate						
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Photo Credit: [GNWT Species at Risk](#)

Habitat:

- Associated with old-growth forests.
- Relies on intact interior forest habitat, with low edge-to-interior ratios.
- Forest: high percentage of old trees, uneven forest structure, CWD, single and multiple tree-fall gaps, standing snags.
- Young forests lack sufficient habitat.
- Dead or decaying trees may be used for breeding, day roosts and foraging.
- Summer night roosts used between foraging bouts are in different habitats than day roosts.
- Summer: females frequently found near streams and males in and around caves.
- Southern BC: roosts in western hemlock, may roost in western white pine or red cedar stand.
- Boreal forest: roosts in mature stands of aspen and balsam poplar
- Less than 100 bats in hibernation colony.
- Hibernates in caves, mines, and tunnels with little air flow, relatively constant and cool temperatures, and high humidity.
- Threats: forest harvesting and pine beetle kill, and white nose syndrome.

Northern Myotis (*Myotis septentrionalis*)



BCTS
BC Timber Sales



Photo Credit: [E-Fauna BC Atlas](#)

Field Action Required:

- If Northern Myotis observed stop work and do not handle bat.
- If roosting or hibernation site identified, do not disturb the bats.
- In both instances, document (photo, GPS coordinates) the location.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- When establishing WTRAs, include large diameter deciduous trees with evidence of internal decay (i.e., fungal conk, broken tops, large stem scars, cavities from primary excavators).

Status:

- SARA Schedule: 1- Endangered.
- Provincial List: Blue.
- Identified Wildlife: No.

BEC Zones:

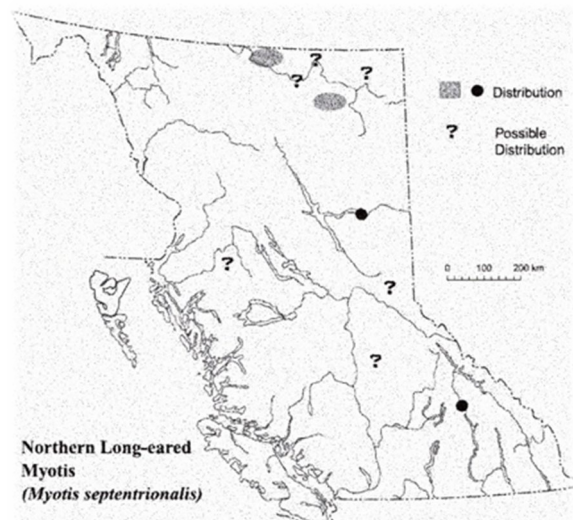
- BWBS, ICH, MH, SBS, CDF, ICH, IDF, PP

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, Mackenzie, Prince George

Range:

- Possibly rarest and least known bat in BC.
- Found in much of northern BC.
- Southern Columbia Mountains in southeastern BC through central BC, Peace River region, northeastern BC as far north as YT border, and Hazelton Skeena River area.
- May extend to Coast Mountains in northern BC.



Map Credit: [Ministry of Environment](#)

Northern Mountain Caribou (*Rangifer tarandus*) pop. 15



BCTS
BC Timber Sales

Description:

- Dark brown coat with creamy white neck, mane, shoulder stripe, underbelly, underside of tail, patch above each hoof.
- Large crescent-shaped hooves to provide flotation in snow and soft ground.
- Antlers of flattened, compact, and relatively dense.
- Both sexes have antlers for part of year.
- 100-120 cm at shoulder. Males weigh 160-210 kg and females 110-150 kg.



Photo Credit: [Environment & Natural Resources Canada](https://www.ec.gc.ca/enr/)

Biology:

- Adult survival is high but calf survival and recruitment to breed is very low.
- Live in discrete herds.
- Population, overall, is stable but individual herds not.
- Most vulnerable ungulate species in a multiple predator-prey system due to low fecundity.
- Calving cows spatially segregate and utilize habitats that are inaccessible or less desirable to predators.
- Winter diet terrestrial lichens and some arboreal lichens.
- Do not compete directly with other species due to winter diet.
- Spring diet, use of forbs and graminoids increases, summer food is a wide variety of forbs, graminoids, lichens, fungi, and leaves.
- Forage quality and availability directly affects condition of females and calf survivorship.
- Polygynous breeding late Sept-mid Oct.
- Larger rut (≤ 20) compared to ecotypes.
- Calves are born late May – early Jun.
- Consistent use of mineral licks.
- Home ranges variable, 1100–1900 km².

Phenology:

				Birth	Care	Breeding					
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Habitat:

- Spend winters in mature, low elevation lodgepole pine or black spruce forests, or on wind-swept alpine slopes feeding on terrestrial lichens.
- Long-distance migrations to calve and spend summer in mountainous terrain.
- Winter, found either at high elevations above treeline on windswept alpine slopes or at lower elevations in forest.
- Large elevation range due to wide distribution, low, 500-1500 m; high 1500->2000 m.
- Connectivity within and between range habitat is essential for survival.
- Provides forage and spatial distance needed to survive and avoid predation.
- Fragmentation concentrates caribou in smaller patches, increases density, which can lead to increased predation pressure.
- Little or no evidence numbers can be maintained in areas with high levels of forestry, predation, and recreation.

Northern Mountain Caribou (*Rangifer tarandus*) pop. 15



BCTS
BC Timber Sales

Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience in Caribou surveys the area.
- Take photos and record the sighting's coordinates.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.

Status:

- SARA Schedule: 1-Special Concern.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

- BAFA, BWBS, ESSF, ICH, IMA, MH, SBS.



Photo Credit: [inaturalist](#)

Natural Resource District:

- Fort Nelson, Peace, Mackenzie, Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Prince George, Coast Mountains, Skeena Stikine, Stuart Nechako.

Range:

- Two discrete geographic distributions.
- Range overlaps with barren-ground and woodland caribou (Boreal, Central Mountain).
- Mountainous and adjacent plateau areas with lower snowpacks in West central and Northern British Columbia Interior.

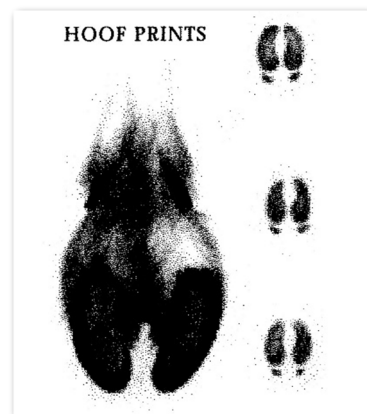
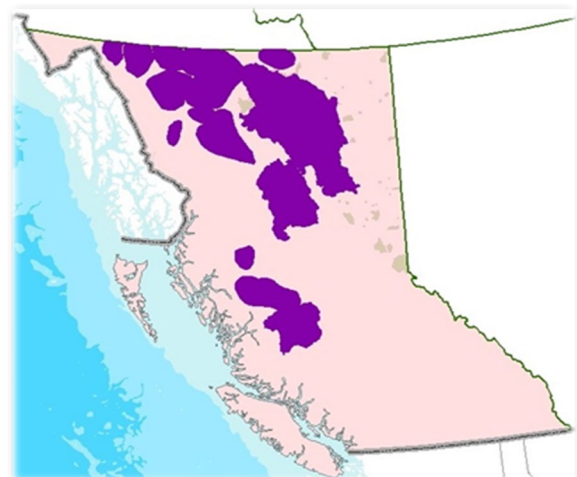


Photo Credit: [BC Ministry Environment](#)



Map Credit: [BC Ministry of Environment](#)

Stone's Sheep (*Ovis dalli stonei*)



- Take photos and record sighting's coordinates.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management

Actions:

- Minimum 1-hectare buffer on mineral licks (WTRA). If possible, exclude feature outside of block shape.
- Prescribe advanced road deactivation on Road Permit and Block roads to minimize ATV access and reduce permanent access on land base.

Status:

- SARA Schedule: Not Listed.
- Provincial List: Blue.
- Identified Wildlife: Yes



Photo Credit: [iNaturalist](#)

BEC Zones:

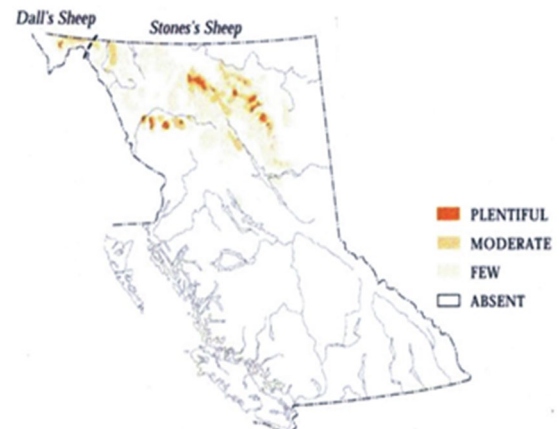
- BAFA, BWBS, ESSF; SWB.

Natural Resource District:

- Coast Mountain, Fort Nelson, Mackenzie, Peace, Skeena Stikine.

Range:

- Occur in mountain ranges from Williston Lake north and west to Atlin-Tatshenshini area.
- Dall's sheep (*O. d. dalli*) restricted to extreme northwest where St. Elias Mountains extend into British Columbia.
- Stone's and bighorn sheep ranges do not overlap.



Map Credit: [BC Ministry Environment Lands & Parks](#)

Wolverine (*Gulo gulo luscus*)

Description:

- Medium-sized carnivore and largest terrestrial member of weasel family in North America.
- Bearlike with massive limbs and long, dense, dark brown pelage, paler on head, with two broad yellowish stripes extending from shoulders and joining on rump, bushy tail, and relatively large feet.
- Large head, broad forehead, short stout neck, short legs, and heavy musculature.
- 650-1125 mm long with tail of 170-260 mm, and weight 12-18 kg.
- Females average 10% less than males in linear measurements and 30% less in weight.



Photo Credit: [iNaturalist](#)

Biology:

- Females den at higher elevations under rocks, logs, or snow.
- Breed late Apr-early Sep but embryos do not implant until Jan.
- Kits born late Feb- mid Apr, nursed for 2 months and then leave den. Stay with mother for first winter.
- Kits adult size in 7 months.
- Scavengers and predators.
- Diet: large ungulates (moose, elk, deer, caribou, and mountain goats) primarily as carrion.
- Also eat hares, porcupines, squirrels, mice, voles, birds, fish, and vegetation.
- Cache food they have scavenged.
- Predators: bears, wolves, cougars, golden eagles, and other wolverines.

Habitat:

- Avoid dry grassland areas and are rare on BC coast.
- Best described as anywhere with an adequate year-round food supply in large, sparsely inhabited wilderness areas, rather than in terms of types of topography or plants.
- Treed and treeless ecological areas, at all elevations. Low elevation used in winter.
- Most abundant where large ungulates are common, and where carrion is plentiful in winter.
- Home range, 50-400 km² for females and 230-1580 km² for males.
- Juveniles may have even larger ranges and can disperse over 300 km.
- High density in BC mountains.
- Negatively affected by human activity and habitat alteration.
- Reluctant to cross active transportation corridors, barrier to movement and mortality driver.

Phenology:

			Breeding Period									
Impla	Birth		Care									
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Wolverine (*Gulo gulo luscus*)



Photo Credit: [Schools Wikipedia](#)

Field Action Required:

- If animal or den observed, stop work in the immediate area until a biologist with experience doing wolverine surveys assesses the area.
- Take photos and record sighting's coordinates.
- Report the observation to supervisor and contact BCTS.

Management Recommendations:

- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Business Area Specific Management Actions:

- Block RMAs should not be isolated. Effort should be made to connect RMAs to an adjacent stand.
- Where available, establish WTRAs containing mature or old forest with >50% crown closure.

Status:

- SARA Schedule: 1-Special Concern.
- Provincial List: Blue.
- Identified Wildlife: Yes.

BEC Zones:

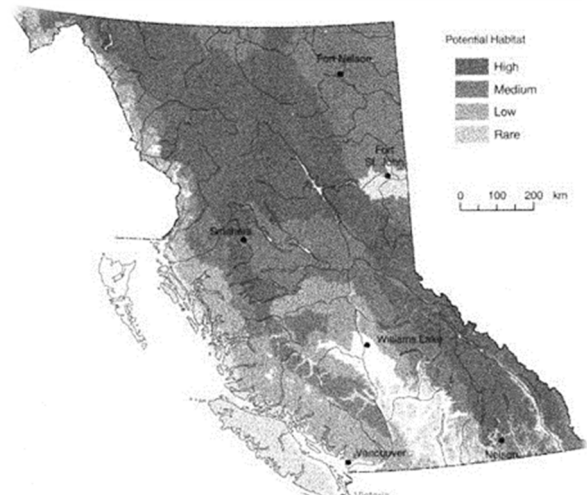
- BAFA, BWBS, CMA, CWH, ESSF, ICH, IDF, IMA, MH, MS, SBPS, SBS, SWB.

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Haida Gwaii, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, Mackenzie, Prince George, North Island - Central Coast, Coast Mountains, Campbell River, South Island, Stuart Nechako

Range:

- Found in remote areas of undisturbed wilderness throughout BC.
- Occur in many northern and mountain parks in BC.
- Possibly extirpated on Vancouver Island, lower Fraser Valley, Okanagan Basin, and Thompson Basin.



Map Credit: [BC Ministry of Environment](#)

Bottlebrush Frost (*Physconia detersa*)



BCTS
BC Timber Sales

Description:

- Bottlebrush Frost has a distinct white “frost” or powdery cover over the upper surface.
- Medium in size with a lobed, leaf like shape, cortex above and below, lobes appressed to loosely attached, elongate, averaging to 0.5–2 (–3) mm wide, thin.
- The upper surface of the lobes are brownish, except often heavily white-powder, dull to somewhat shiny.
- Lower surface of the lobe pale to more often blackish, dull, bearing numerous squarrose rhizines.
- Thallus (body of lichen) bearing soredia and/or isidia (reproductive parts). Soredia/isidia mostly confined to marginal soredia and do not reach lobe tips.
- *P. enteroxantha* is a similar species which is more heavily white-pruinose (covered in white powder). *P. detersa* also appears to have a strictly boreal distribution in BC unlike *P. enteroxantha*.

Biology:

- Bottlebrush Frost lichens reproduce both sexually, through spores, and asexually through vegetative reproduction.

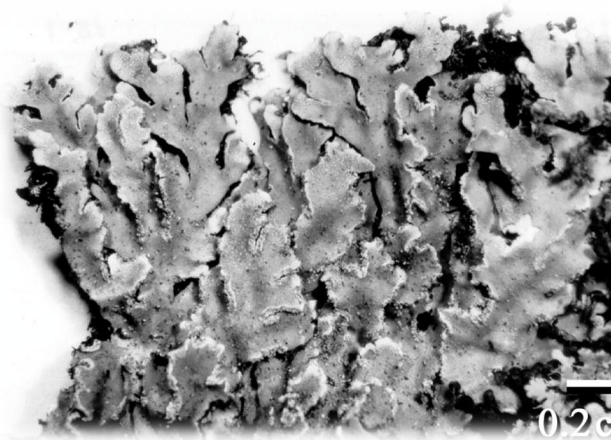


Photo Credit: T. Esslinger, [LichenPortal](#)

Habitat:

- Grows in places where there is little soil and are found on a variety of calcium-rich substrates, including rock surfaces, tree trunks, and on the ground.
- Found at lower elevations in boreal habitats.



Photo Credit: S. Sharnoff, [LichenPortal](#)

Field Action Required:

- Do not disturb the plant.
- Confirm species identification through photos and specialist if necessary.
- Document and GPS the location.
- Report to BCTS.
- Implement a stand level management strategy identifying necessary buffer.



Photo Credit: T. McMullin, [LichenPortal](#)

Bottlebrush Frost (*Physconia detersa*)



BCTS
BC Timber Sales

Status:

- SARA Schedule: Not Listed
- Provincial List: Red
- Identified Wildlife: No

BEC Zones:

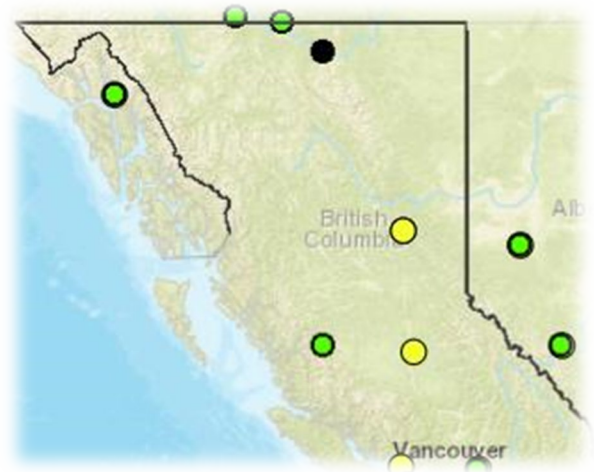
- BWBSdk

Natural Resource District:

- Ft Nelson, Peace, Mackenzie, Prince George, Coast Mountains, Skeena Stikine

Range:

- Found in boreal BC.
- North to Alaska, south to Colorado.



Map Credit: [E-Flora BC](#)

Cryptic Paw (*Nephroma occultum*)



BCTS
BC Timber Sales

Description:

- Cryptic Paw is part of the group called Paw Lichens, so named because of the brown, paw-like apothecia (the spore-producing sexual stage of reproduction) on the lower surface; in all other genera the apothecia are located over the upper surface or along the lobe margins.
- It has a yellowish, greenish, or bluish-grey upper surface with net-shaped ridges, and a hairless tan to sometimes blackish lower surface.
- It is commonly 2-7 cm broad and has rounded lobes 4-12 mm wide.
- It produces many asexual propagules, called soredia, along the margins and the ridges of the upper surface.
- Generally, apothecia are absent.

Biology:

- Cryptic paw produces large numbers of asexual soredia which are thought to be dispersed by wind, rain, and animals.
- The soredia of *N. occultum* are larger than those of most lichens, and poor propagule dispersal is a factor which limits distribution.
- Cryptic Paw generally does not have sexual structures (apothecia) and may have low genetic variation.
- This species is a poor competitor and is displaced by mosses or liverworts where these are the dominant epiphytes.
- Intolerant of summer drought.

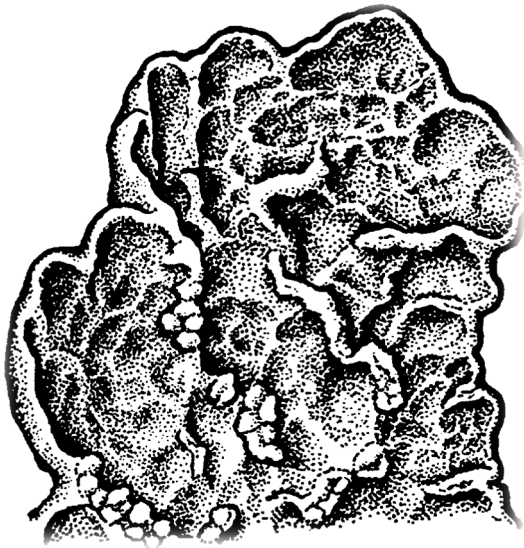


Photo Credit: J. Riley, [E-Flora BC](#)

Habitat:

- Infrequent over conifers in open old-growth maritime and intermontane forests at lower elevations.
- Moist forested regions at elevations below 1200 m, and most populations occur between 400 m and 800 m.
- Cryptic Paw inhabits the upper forest canopy of coastal ecosystems but is restricted to the lower forest canopy in inland localities where humidity is maintained throughout the summer by shading and by moisture retention from older trees and associated vegetation.
- Grows in forests which receive at least 75 mm of precipitation during the summer months, and which have nutrient-rich soils, typically with toe-slope topography where soils are enhanced by moisture and nutrient addition.

Cryptic Paw (*Nephroma occultum*)



Credit: [Lichens of British Columbia](#)

Field Action Required:

- Do not disturb the plant.
- Confirm species identification through photos and specialist if necessary.
- Document and GPS the location.
- Report to BCTS.
- Implement a stand level management strategy identifying necessary buffer.



Photo Credit: [iNaturalist](#)

Status:

- SARA Schedule: 1-Special Concern (2007)
- Provincial List: Blue
- Identified Wildlife: No

BEC Zones:

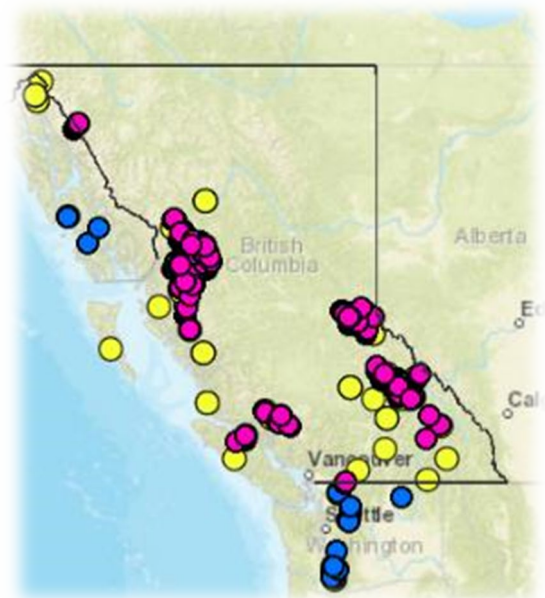
- BAFAun; CWHds; CWHvm; CWHxm; ESSFwcp; ESSFwvp; ICHmc; ICHvk; ICHwk; MHmm; SBSvk

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Ft Nelson, Peace, Mackenzie, Prince George, North Island - Central Coast, Coast Mountains, Skeena Stikine, Campbell River, South Island

Range:

- Coastal and inland rainforests in BC.
- South to Oregon.



Map Credit: [E-Flora BC](#)

Electrified Millepede (*Anaptychia crinalis*)



BCTS
BC Timber Sales

Description:

- Electrified Millepede is a small leaf-like lobed lichen with narrow, linear, intertwined smaller lobes that have obvious marginal cilia (short hairs), no cortex (bark-like surface) on the lower surface, and apothecia (the spore-producing sexual stage of reproduction) which has small spiny margins.
- The thallus (body of lichen) is 4-8 cm wide, whitish gray, occasionally grayish brown to brown, upper surface matte, smooth or with some tiny hairs (tomentum).
- Lobes elongate to linear, up to 8 cm long and 0.1-0.6 mm wide, attached at the base of the lobe, mostly dichotomously branched, and tangled.
- Lower surface of lobes flat or channeled, mostly lacking a cortex and exposing the white medulla (horizontal layer of thallus).
- The apothecia are near the tips of branches, sparse to frequent, 2-4.5 mm in diameter, stalked, the disc dark brown, flat to concave, the margins nearly entire to toothed or spinulose.
- For many years *A. setifera* and *A. ciliaris* have been confused with *A. crinalis* and recently have been determined not to occur in North America.
- *A. ulotrichoides* is similar but has few or no marginal cilia and grows on rock.

Biology:

- Electrified Millipede reproduces asexually, usually by dispersal of fragments of the lichen body.



Photo Credit: [iNaturalist](#)

Habitat:

- In the Pacific Northwest, on the bark of conifer trees (*Picea*, *Pinus*, *Thuja*).



Photo Credit: [iNaturalist](#)

Electrified Millepede (*Anaptychia crinalis*)

Field Action Required:

- Do not disturb the plant.
- Confirm species identification through photos and specialist if necessary.
- Document and GPS the location.
- Report to BCTS.
- Implement a stand level management strategy identifying necessary buffer.



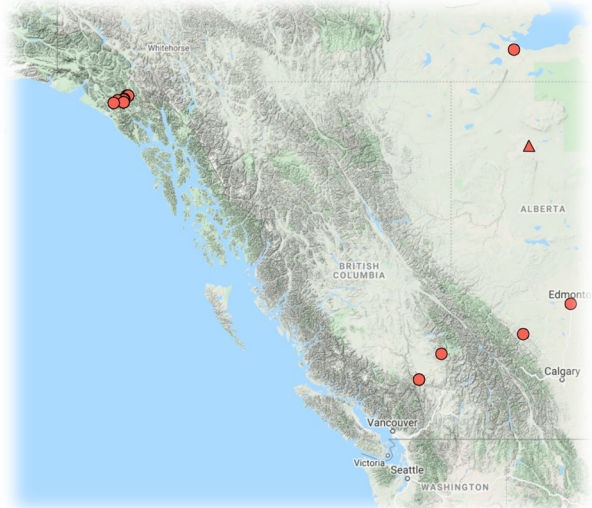
Photo Credit: [iNaturalist](#)



Photo Credit: S. Brinkner, [LichenPortal](#)

Range:

- Found in the interior of BC.
- North to Alaska to south to northern California.



Map Credit: [LichenPortal](#)

Status:

- SARA Schedule: Not Listed
- Provincial List: Red
- Identified Wildlife: No

BEC Zones:

- SWBmk

Natural Resource District:

- Ft Nelson, Peace, Mackenzie, Prince George, Coast Mountains, Skeena Stikine

Greater Green Moon (*Dendrioscoticta wrightii*)



BCTS
BC Timber Sales

Description:

- Greater Green Moon has a large thallus (body of lichen), whitish grey on the lower side, green on top.
- Thallus bears disc, tube or cup shaped fruiting structures lacking an overarching rim.
- Faintly hairy, cylindrical to slightly flattened main branches.
- Rhizines (root like structures) are lacking. The surface hairs are short and beadlike.
- Similar to *Dendrioscocaulon wrightii* but Greater Green Moon is a leafier, greener lichen found less frequently and has a narrower ecological niche. However, these two species may be found growing together which can complicate management. It should be noted though that *Dendrioscocaulon wrightii* is blue listed so it may require similar management and/or protection.
- Species formerly called *Stricta wrightii*.



Photo Credit: C. Bjork, [E-Flora BC](#)

Biology:

- Greater Green Moon lichens reproduce both sexually, through spores, and asexually through vegetative reproduction.

Habitat:

- Sheltered sites at lower elevations in old-growth rainforests.
- Generally, occurs on conifers, although it has been also found on small trunks of *Alnus* sp. and *Salix* sp.



Photo Credit: [C. Bjork](#)

Greater Green Moon (*Dendroscosticta wrightii*)



BCTS
BC Timber Sales

Field Action Required:

- Do not disturb the plant.
- Confirm species identification through photos and specialist if necessary.
- Document and GPS the location.
- Report to BCTS.
- Implement a stand level management strategy identifying necessary buffer.



Photo Credit: [iNaturalist](#)

Status:

- SARA Schedule: Not Listed
- Provincial List: Red
- Identified Wildlife: No

BEC Zones:

- ESSFwcp



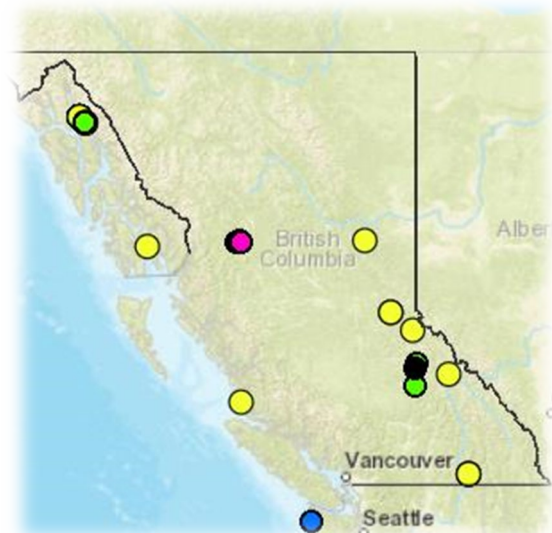
Photo Credit: [iNaturalist](#)

Natural Resource District:

- Quesnel, Cariboo-Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Selkirk, Okanagan Shuswap, Mackenzie, Prince George, Ft Nelson, Peace

Range:

- Interior of BC.
- North to Alaska



Map Credit: [E-Flora BC](#)

Canada Ricegrass (*Piptatheropsis canadensis*)



BCTS
BC Timber Sales

Description:

- Grass like appearance.
- Each branch has 2-5 spikelets while branches are ascending to spread and 6 cm long.
- At the tip of branch, spikelets are loosely overlapping along with a stalk and single floret.
- A pair of brackets at base of spikelet.
- Basal leaves 5-20 cm in length and 1-1.5 mm width. They are tough-textured, leathery, stiff and involute. 1-4 mm long ligule while nodes are smooth. Grains are lance-elliptic and 2.5 mm long.
- Its leaf structure helps to distinguish it from *Oryzopsis* species, which have in-rolled margins and its awns, which are greater than 2 mm and twisted.

Biology:

- Canada Ricegrass is a perennial plant.
- Reproduces through vegetative reproduction.

Phenology:

					Flower		Seed Production					
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	



Photo Credit: [iNaturalist](#)

Habitat:

- Dry slopes, grasslands, open forests.



Photo Credit: [iNaturalist](#)

Field Action Required:

- Do not disturb the plant.
- Confirm species identification through photos and specialist if necessary.
- Document and GPS the location.
- Report to BCTS.
- Implement a stand level management strategy identifying necessary buffer.



Photo Credit: [iNaturalist](#)

Status:

- SARA Schedule: Not Listed
- BC List: Red
- Identified Wildlife: No

Canada Ricegrass (*Piptatheropsis canadensis*)



BCTS
BC Timber Sales

BEC Zones:

- BWBSmw

Natural Resource District:

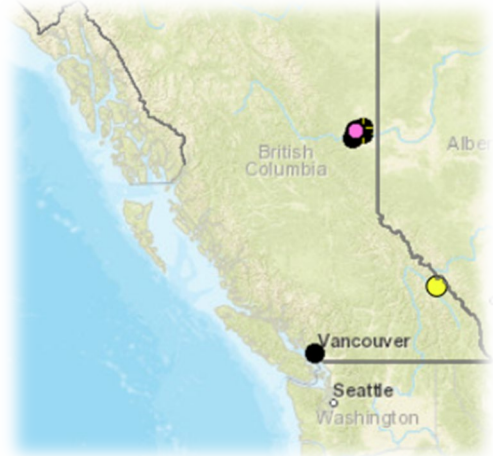
- Ft Nelson, Peace.

Range:

- Found primarily in the Peace Region



Photo Credit: [iNaturalist](#)



Map Credit: [E-Flora BC](#)