



TPG Species of Management Concern Field Guide

Jan 2025

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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.

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:

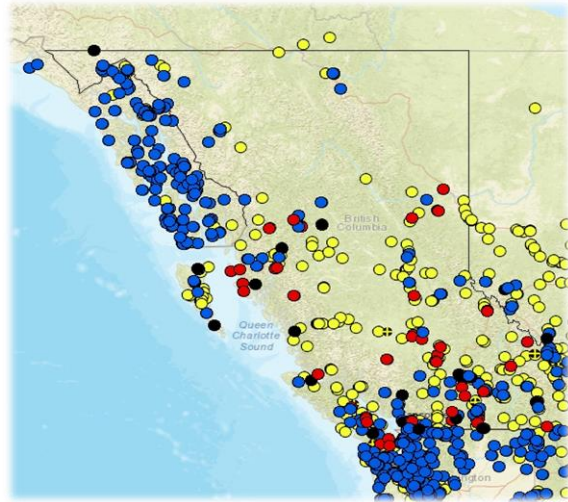
- Mackenzie, Prince George, Nadina, Skeena, Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Sunshine Coast, Haida Gwaii, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Okanagan Shuswap, Fort Nelson, Peace, North Island – Central Coast, Coast Mountains, Campbell River,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

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.

Status:

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

BEC Zones:

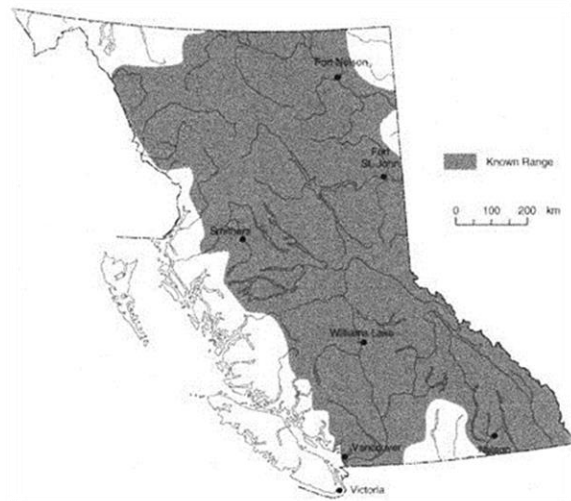
- BG, BWBS, CWH, ESSF, ICH, IDF, MS, PP, SBPS, SBS, SWB.

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](#)

American Goshawk *atricapillus* (*Accipiter atricapillus atricapillus*)



Description:

- There are two subspecies of the American 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 American 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.

American Goshawk *atricapillus* (*Accipiter atricapillus atricapillus*)



BCTS
BC Timber Sales

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/American_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.



Photos Credit: [inaturalist](#)



Map Credit: modified NOGO Recovery Team 2008

Bank Swallow (*Riparia riparia*)

Description:

- The smallest swallow in BC (12-15 cm in length) with a chunky body, large head, relatively short pointed wings and a slightly forked tail.
- Upperparts dark brown, underparts white except for a thick brown band across the chest and a white swoosh on the neck.
- Both sexes look alike.
- Flight is fluttery and fast with periods of brief gliding. Changes course frequently in pursuit of flying insects.



Photo Credit: Darlene Friedman

Biology:

- Aerial insectivore.
- Diet consists of flying insects (e.g. beetles, mosquitoes, winged ants, flies, moths). Insects are caught in the air over fields, wetlands, water, etc.
- Both sexes construct a nest burrow.
- Pairs usually dig a new burrow each year, but sometimes use old bank swallow burrows or abandoned cavities of the Belted Kingfisher.
- Highly colonial.
- Clutch size 2-8. Some birds have 2 broods, not in north.
- Incubation lasts 12-16 days, by both sexes.
- Young are tended by both sexes.
- Fledge at 18-22 days, return to burrow for a few days, remain dependent on parents for about 5 days after fledging.
- Migrate in large flocks.
- Eggs white, unmarked.

Habitat:

- Open and partly open situations, frequently near flowing water.
- Forage in open areas, including above riparian (and sometimes upland) woodlands.
- Nests are in steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, or along the coast, or in gravel pits, road embankments, etc.
- Banks for nesting is the most important factor in determining their presence.



Phenology:

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

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 nest observation to supervisor and contact BCTS.

Bank Swallow (*Riparia riparia*)

Management Recommendations:

- Active and inactive nesting burrows of this species have regulatory protection.
- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Status:

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

Natural Resource District:

- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, 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, Stuart Nechako.



Photo Credit: Jay McGowan

Vocalization:

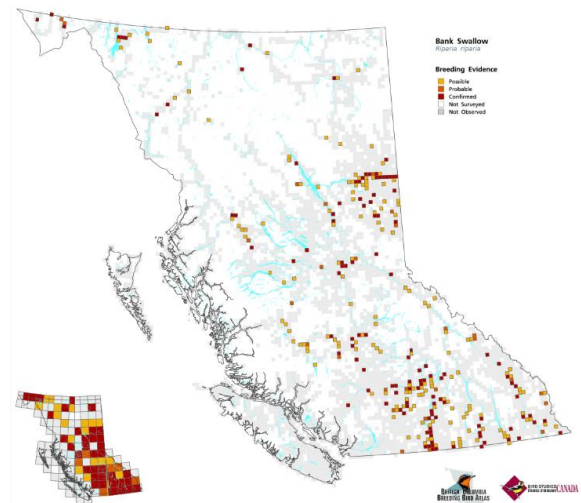
- [Bank Swallow Sounds, All About Birds, Cornell Lab of Ornithology](#)

Range:

- Breeds throughout much of BC east of the Coast Mountains.
- Recent records west of the Cascades, particularly in the lower mainland and on Vancouver Island.
- Non-breeders and migrants occur regularly along the coast.

BEC Zones:

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



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 nest observation to supervisor and contact BCTS.



Barn Swallow (*Hirundo rustica*)

Management Recommendations:

- Active and inactive nests of this species have regulatory protection.
- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Status:

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

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:

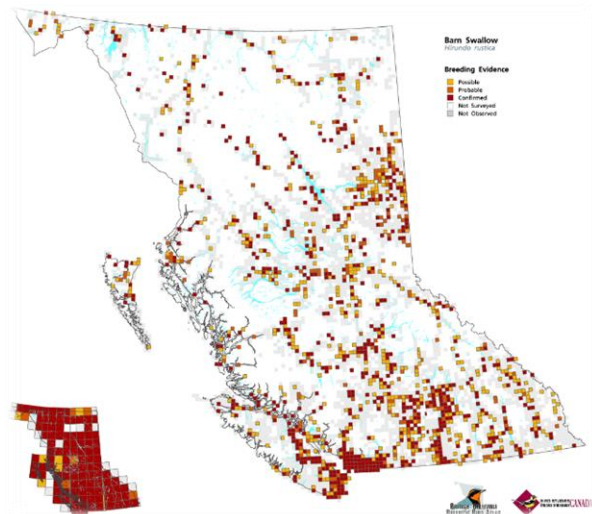
- https://www.allaboutbirds.org/guide/Barn_Swallow/sounds

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.



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



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

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.

Phenology:

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

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:

- Active and inactive nests of this species have regulatory protection.
- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Bald Eagle (*Haliaeetus leucocephalus*)



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:

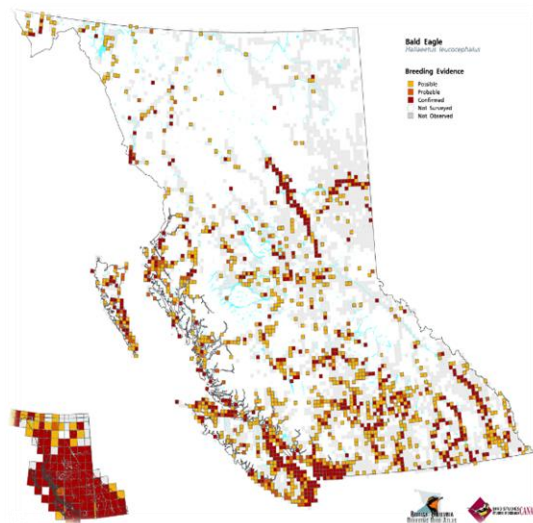
- Nadina, Skeena Stikine, Quesnel, Cariboo-Chilcotin, Chilliwack, Sea to Sky, Haida Gwaii, Thompson Rivers, Rocky Mountains, Selkirk, One Hundred Mile House, Cascades, Sunshine Coast, Okanagan Shuswap, Ft. Nelson, Peace, Mackenzie, Prince George, North Island-Central Coast, Coast Mountains, Campbell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

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.

Status:

- SARA Schedule: 1-Special Concern.
- Provincial List: Blue.
- 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:

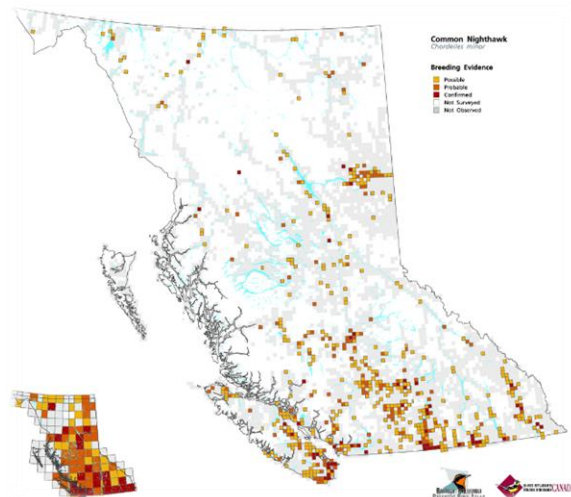
- https://www.allaboutbirds.org/guide/Common_Nighthawk/sounds

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](#)



Map Credit: [birdatlas](#)

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.

Status:

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

BEC Zones:

- BWBS, CWH.

Vocalization:

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

Range:

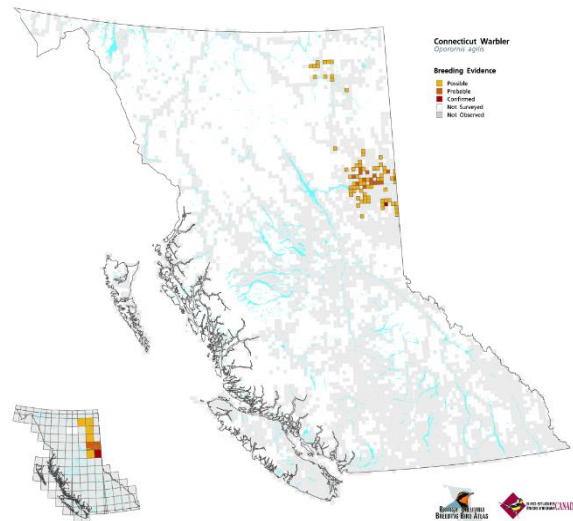
- Connecticut Warbler is only found in Northeast British Columbia.
- Home range is actively defended.
- Home range varies from 0.25-0.5 hectares.
- Long distance migrants spending winters in South America.



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

Natural Resource District:

- Mackenzie, Prince George, Fort Nelson, Peace.



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

Great Blue Heron *Herodias* (*Ardea herodias herodias*)

Description:

- Two subspecies are identified in British Columbia, the *Herodias* in the interior and the *Fannini* on the West Coast.
- Herodias subspecies has a lighter plumage, larger in size and has a larger clutch size.
- Adults are tall (60cm to one meter), long-legged wading birds with a sinuous neck held in an “S” curve at rest and in flight.
- The thick long bill is yellow and black
- Head and face are white.
- Mature Great Blue Herons, plumage is a steel blue-grey with dark blue-grey flight and tail feathers.
- As the birds mature a distinctive black plume extends from above the eye to beyond the back of head and a bib of long trailing plumes on the chest and scapula area become more pronounced.
- Juveniles are grey-brown on the back and upper wing plumage and lack the black eyebrow and adult head and bib plumes.



Photo Credit: [inaturalist](#)

Biology:

- Herons are colonial nesting birds.
- Nest are built with sticks in large trees in forests and woodlands.
- Heronry can have many nests in a small area. Reports of up to 200 in two hectares.
- A single tree can have multiple nests.
- Nest are added to in successive years.
- Diet consists of small fish, crayfish, crabs, frogs, salamanders, snakes, large insects and small mammals.
- Clutch size 3-5, only one brood.
- Eggs are pale blue.
- Incubation by both parents lasts about 27 days.
- Young remain in nest for up to two months.

Phenology:

		Fledging/Parental Care		
	Nest Construct	Eggs Laid/Chicks in Nest		
Jan	Feb	March	April	May
		June	July	Aug
			Sept	Oct
				Nov
				Dec

Habitat:

- Forage in fresh and marine waters and riparian and tidal areas.
- Mudflats, grassland and farm field.
- During non-breeding periods birds may roost high up in mature trees in close proximity to foraging sites.
- Canopy closures of >80% is typical for *Heronries*.
- Most common on the South Coast in association with low elevation lakes, wetlands, sloughs and estuaries.

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:

- Active and inactive nests of this species have regulatory protection.
- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

Great Blue Heron *Herodias* (*Ardea herodias herodias*)



Status:

- SARA Schedule: Not listed.
- *Migratory Birds Regulations* Schedule 1.
- Provincial List: Blue.
- Identified Wildlife: Yes.



Photo Credit: [inaturalist](#)

BEC Zones:

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

Natural Resource District:

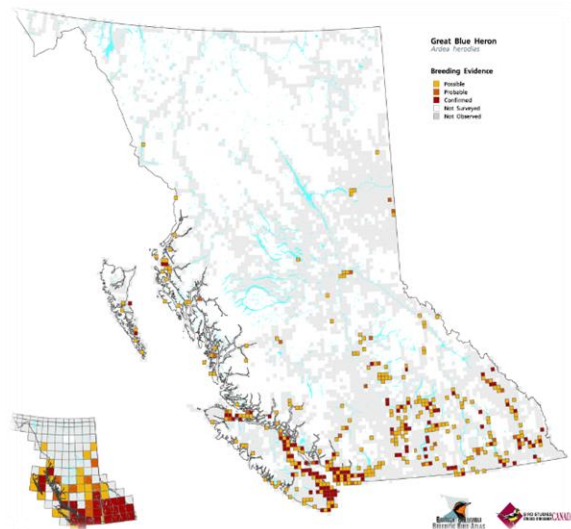
- Nadina, Skeena Stikine, Quesnel, Cariboo – Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountains, Selkirk, Okanagan Shuswap, Prince George, Mackenzie.

Vocalization:

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

Range:

- In British Columbia the Great Blue Heron *Herodias* subspecies is primarily migratory, although some stay in the southern portions of the province where waters don't freeze. Interior populations may migrate to the west coast for winter.
- *Herodias* and *Fannini* populations overlap in Coastal British Columbia.



Map Credit: [birdatlas](#)

Long-billed Curlew (*Numenius americanus*)

Description:

- Largest sandpiper in the world, length 50-60cm tip of bill to tip of tail, wingspan one meter.
- The bill is an impressive length of about 19cm.
- Females have a longer bill than males and have a slightly larger body.
- Its plumage is sandy brown, with cinnamon coloured underwings seen when flying.
- Upper and sides of body has dark brown bars.
- Sandy brown coloured belly with brown bars upward towards neck.
- Cream coloured eye ring.

Biology:

- The bill is used to probe deep into burrows of insects and other creatures.
- Diet consists of insects, worms, crustaceans, mollusks, toads, eggs and nestlings of other birds, and berries.
- They will also glean the ground and vegetation for invertebrates.
- Males attract females by elaborate undulating flight displays.
- Territory of 15-24 hectares is defended.
- Nest are located in damp grassy depression on the ground in open grasslands or grain fields with short vegetation.
- Lined with grasses, weeds, bits of cow dung or a few twigs.
- Clutch size of 3-5, one brood annually.
- Eggs are olive buff, olive green, buffy white, marked with brown olive or purple grey.
- Incubation by both parents 27-30 days.
- Nestlings are out of the nest within 24 hours of hatching.
- Annually monogamous.

Phenology:

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



Photo Credit: [inaturalist](#)

Habitat:

- Exclusively use grassy terrain, newly-ploughed fields, green hayfields, meadows and pastures.
- Long-billed Curlew do not need to be near 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.

Long-billed Curlew (*Numenius americanus*)



Status:

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

BEC Zones:

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



Photos Credit: [inaturalist](#)

Natural Resource District:

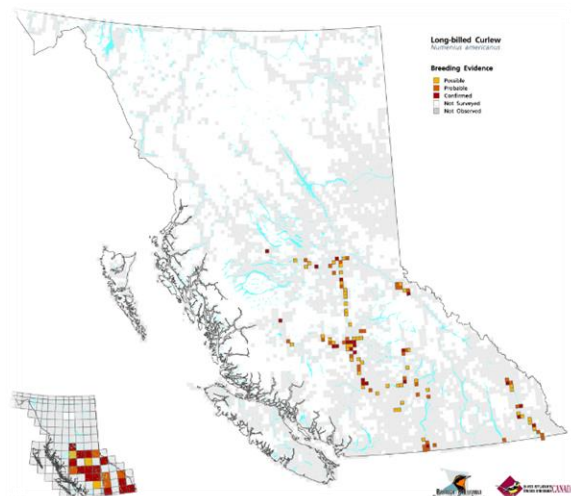
- Nadina, Skeena Stikine, Quesnel, Cariboo Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Mackenzie, Prince George, Stuart Nechako.

Vocalization:

- https://www.allaboutbirds.org/guide/Long-billed_Curlew/sounds

Range:

- Long-billed Curlew is found only during the summers in southern British Columbia.
- Can be found occasionally during migration on the West Coast of British Columbia.
- Only a couple hundred breeding pairs in British Columbia.



Map Credit: [birdatlasbirdatlas](#)

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](#)

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.

Phenology:

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

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.

Olive-sided Flycatcher (*Contopus cooperi*)



Status:

- SARA Schedule: 1-Special Concern.
- Provincial List: Yellow.
- 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:

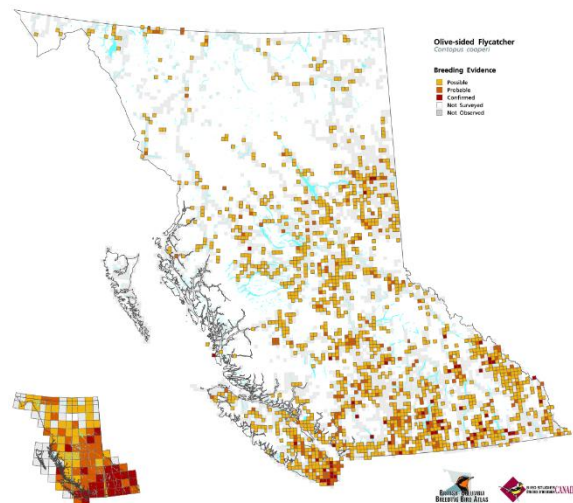
- https://www.allaboutbirds.org/guide/Olive-sided_Flycatcher/sounds

Range:

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



Photos Credit: [inaturalist](#)



Map Credit: [birdatlas](#)

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](#)

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:

- Active and inactive nests of this species have regulatory protection.
- Follow management recommendations from BMP for species or consult a qualified professional if no BMP exists.

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.

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:

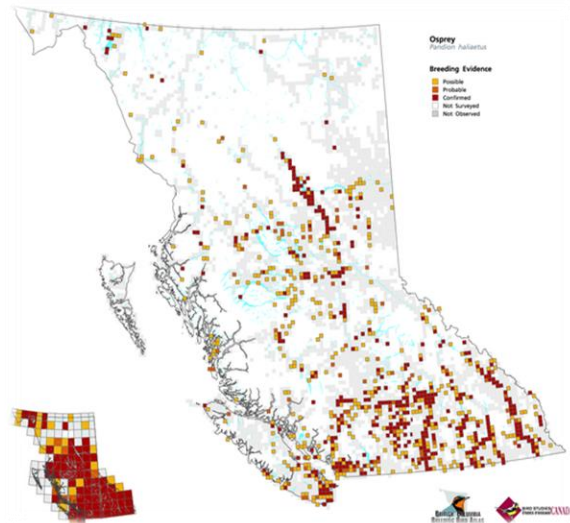
- <https://www.allaboutbirds.org/guide/Osprey/sounds>

Range:

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



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



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

Pileated Woodpecker (*Dryocopus pileatus*)

Description:

- Large crow sized (40-49 cm) woodpecker. Largest woodpecker in North America.
- Mostly black with a bright red crest and white stripes extending down the neck from the bill to underwing area.
- Sexes are similar in appearance. Male has a red patch on the black line off base of bill.
- In flight striking white on linings of underwings are revealed.
- Flies with slow, jerky wing beats.

Biology:

- Diet consists of carpenter ants, other ants, woodboring beetle larvae, termites and other insects such as flies, spruce budworm and caterpillars, some fruit and nuts.
- Drill rectangular or irregular shaped feeding holes with rough edges in rotten wood.
- Feed in snags, logs and stumps.
- Pairs stay together in their territory all year round.
- Pairs excavate a new nest cavity each year.
- Entrances to nesting cavities can be circular, slightly oval (tear drop shaped) or rectangular with smooth edges; vertical diameter around 12 cm and horizontal diameter around 9 cm.
- Nests are excavated in large diameter (typically > 40cm) live or dead trees with heart rot.
- Nest trees typically have only one cavity, roost trees may have numerous entrance holes.
- Clutch size of 2-5, one brood annually.
- Eggs are glossy white.
- Incubation by both parents 15-18 days.
- Nestlings stay in nest 24-31 days.

Phenology:

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



Photo Credit: All About Birds

Habitat:

- Forest birds that require large, standing dead trees and downed wood.
- Mature evergreen, deciduous or mixed forests can be used.
- Found in suburban areas where large dead trees are present.
- Nests in mature mixed or coniferous forests or in younger forests with numerous large, dead trees.
- In BC prefers live hardwoods for nesting, especially trembling aspen and black cottonwood, but paper birch, red alder and maple are also used. Conifers are used but less frequently.



Photo Credit: All About Birds

Pileated Woodpecker (*Dryocopus pileatus*)

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 or a suspected nesting cavity, 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.
- Active and inactive nesting cavities of Pileated Woodpeckers are protected under the *Migratory Birds Regulation*.

Pileated Woodpecker Nesting Cavities

One per tree, smooth edges

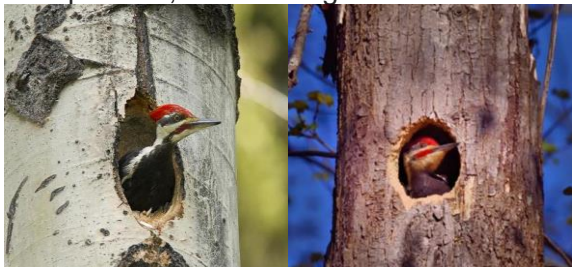


Photo Credit: Ian Routley

Pileated Woodpecker Feeding Excavations

Multiple per tree, irregular shapes, rough edges



Status:

- SARA Schedule: Not Listed.
- *Migratory Birds Regulations* Schedule 1.
- Provincial List: Yellow.
- Identified Wildlife: No.

BEC Zones:

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

Natural Resource District:

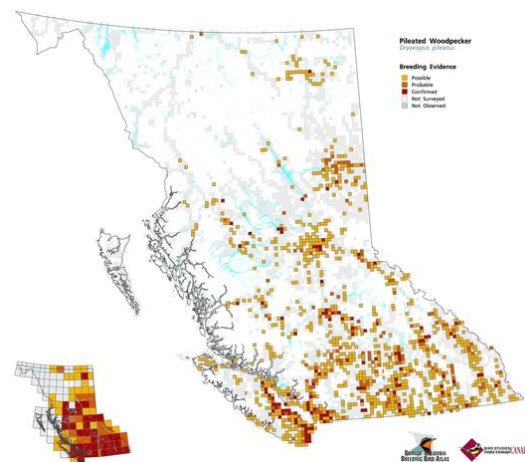
- All except Haida Gwaii.

Vocalization:

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

Range:

- Breeds on Vancouver Island, across southern BC north to the Skeena River, Vanderhoof and the Peace River.
- Breeding ranges from near sea level to 1,200 m.



Map Credit: birdatlas

Haller's Apple Moss (*Bartramia halleriana*)

Description:

- Haller's Apple Moss grows 4 - 10 cm tall, and has tufts, which are green to yellow or brownish green, sometimes branched.
- Stems round in cross-section and tomentose (a layer of matted woolly down on the surface of a plant) with brownish rhizoids below.
- Upper leaves 5 - 7 mm long, curled or crisped when dry, erect and spreading when moist.
- Capsules immersed among leaves, more or less spherical, not or slightly asymmetrical, striate or ribbed when dry. The capsules are on very short setae (stalks) and appear nearly sessile (immobile).
- *Bartramia halleriana* is differentiated from the three other *Bartramia* species in BC by its only slightly zygomorphic (non-symmetrical) capsules that are hidden among the leaves (immersed).
- The common and widespread *B. pomiformis* closely resembles *B. halleriana* and grows in similar habitats. In *B. pomiformis*, the capsules are distinctly zygomorphic, and most are exerted on long setae well above the leaves.

Biology:

- The male and female reproductive structures are on the same plant, ensuring a high potential for fertilization and production of sporangia and spores.
- Spore production has been observed at all known localities.
- Haller's Apple Moss likely also reproduces vegetatively by fragmentation.
- Competition from *B. pomiformis* may be instrumental in limiting reproduction in some habitats.



Photo Credit: N. Foord, [E-Flora BC](#)

Habitat:

- In BC Haller's Apple Moss is found in shaded, often north-facing, damp siliceous cliffs and talus slopes.



Photo Credit: [iNaturalist](#)

Haller's Apple Moss (*Bartramia halleriana*)



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-Threatened (2003)
- Provincial List: Blue
- Identified Wildlife: No

BEC Zones:

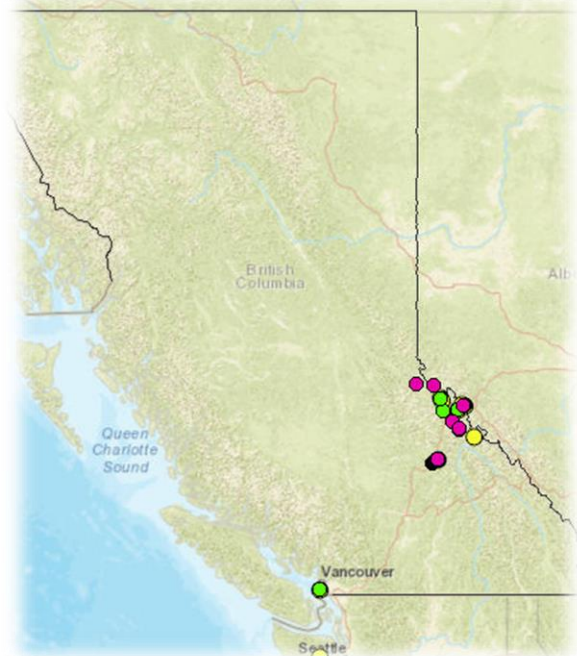
- ICHdw; ICHmm; ICHwk; SBSdh; SBSvk

Natural Resource District:

- Thompson Rivers, 100 Mile House, Selkirk, Okanagan Shuswap, Mackenzie, Prince George

Range:

- In BC, found in the Columbia and Rocky Mountains.
- Also found in Alberta, as well as southern South America, Europe, Asia, Pacific Islands (Hawaii, New Zealand) and Australia (Tasmania).



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

Blue-blue Vinyl (*Leptogium cyanescens*)

Description:

- Blue-blue Vinyl is a blue-grey lichen found growing primarily on trees.
- The thallus (body of lichen) is small to medium but not minute; distinctly thin, averaging to less than 0.1 mm thick when moist; upper surface bluish grey throughout.
- Isidia (outgrowths on the surface of a lichen thallus which, when dried, break off easily and germinate on a new thallus) cylindrical, present or absent, distinctly wrinkled upper surface, naked.
- Lobes averaging to more than 1.5 mm wide, always dorsiventral (different on the back vs the front), margins naked, broad or, if elongate, then never both erect and terminating in distinctly swollen tips; lobe tips averaging to less than 0.2 mm thick when moist, seldom strongly wrinkled when dry.
- Lower surface naked or bearing scattered tufts of hair at points of attachment, never distinctly woolly.

Biology:

- Can reproduce both sexually, through spores, and asexually through vegetative reproduction. However, apothecia (part of lichen containing spores) are not known from the Pacific Northwest, so reproduction is probably restricted to vegetative reproduction from isidia and fragmentation.
- Because fragments and isidia are both relatively heavy, dispersal over distances greater than a few meters may be aided by birds, mammals, or invertebrates.



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

Habitat:

- Blue-blue Vinyl grows primarily over trees at lower elevations in sheltered humid, intermontane forests.



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

Blue-blue Vinyl (*Leptogium cyanescens*)



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.



Credit: [Lichens of British Columbia](#)

Status:

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

BEC Zones:

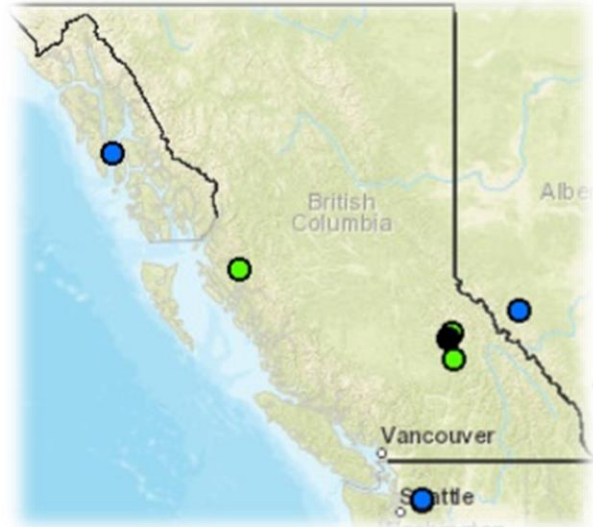
- CWHvh; ESSFvc; ICHmw

Natural Resource District:

- Quesnel, Cariboo-Chilcotin, Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan Shuswap, Mackenzie, Prince George, North Island - Central Coast, Coast Mountains, Skeena Stikine

Range:

- Rare in the Pacific Northwest with spotty distribution in BC.
- Extends north to Alaska and south to Colorado.



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

Bottlebrush Frost (*Physconia detersa*)

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.

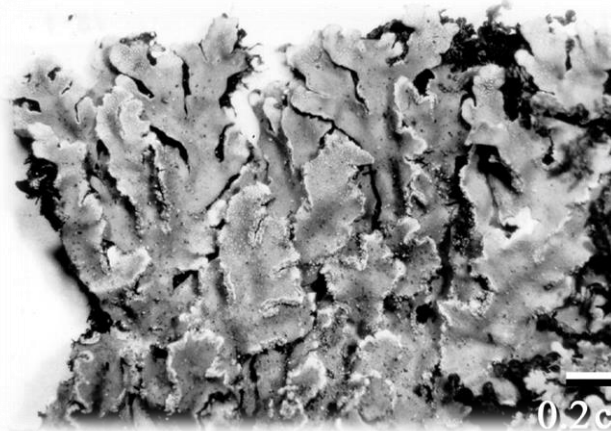


Photo Credit: T. Esslinger, [LichenPortal](#)

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*)

Status:

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

BEC Zones:

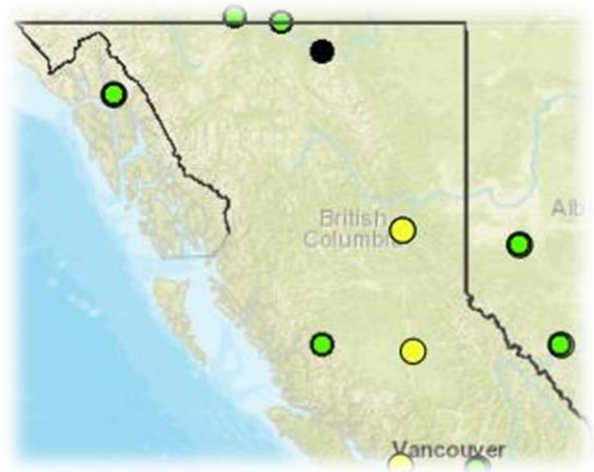
- BWBSdk

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](#)

Crumpled Tarpaper (*Collema coniophilum*)

Description:

- Crumpled Tarpaper lichen is a distinctive, moderately sized leafy lichen with several broad, mostly rounded lobes, at most 2-4 mm wide.
- It has a gelatinous interior.
- The smooth upper surface is dark olive green to blackish brown that becomes weakly and sparsely covered in low “blisters” that eventually expand upwards into low broad ridges.
- Small, blackish, finger-like protrusions are present on the upper surface, and contrast with the upper surface.
- The lower surface varies from dark olive green to pale olive beige, and sometimes has tufts of tiny white hairs.
- Its closest relative is *C. fuscovirens*, which has paper thin lobes throughout and the isidia are restricted to the inner portions of the thallus, being absent from the rapidly expanding lobe tips. This species grows directly on rock, not tree branches.
- Also similar are *C. furfuraceum* and *C. subflaccidum* both of which, are easily distinguished by their flatter, more appressed habit, their uniformly thin lobe tips, their lack of any “crimping” over the upper surface, and (again) the absence of isidia at the tips of rapidly growing lobes.
- *C. auriforme* is similar in appearance to Crumpled Tarpaper but appears to grow exclusively on the ground.

Biology:

- It appears to be an asexual species, reproducing exclusively via coarse granular outgrowths of the upper surface known as isidia.
- Isidia are too large to be effectively dispersed by wind; and because they have no special mechanism of adhesion, successful long-distance dispersal on the feet of birds is also expected to occur rarely.

- Successful reproduction is likely to occur only on nutrient-rich or nutrient-enriched twigs and young branches which are infrequently encountered owing to the leaching effects of heavy precipitation, which greatly reduces this species’ frequency of occurrence.



Photo Credit: T. Wheeler, [Government of Canada](#)

Habitat:

- Occurs within the wettest, coolest portions of inland rain forest. Has been found on branches of *Abies lasiocarpa*, *Picea glauca*, *Populus trichocarpa*, *Thuja plicata* and *Tsuga heterophylla* in areas that are influenced by nutrient enrichment.
- Has been documented only from humid forests older than about 100 years.

Crumpled Tarpaper (*Collema coniophilum*)



Photo Credit: [iNaturalist](#)



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.

Status:

- SARA Schedule: 1-Threatened (2017)
- Provincial List: Red
- Identified Wildlife: No

BEC Zones:

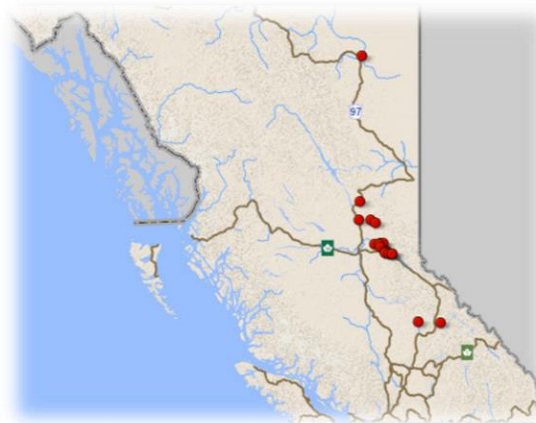
- Unknown

Natural Resource District:

- Thompson Rivers, 100 Mile House, Cascades, Selkirk, Okanagan Shuswap, Mackenzie, Prince George

Range:

- This species is known from inland British Columbia, specifically a small portion of the Rocky Mountain Trench, 65 km east of Prince George, and the upper Adams River in the Columbia Mountains.
- Extends north to Alaska.



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

Cryptic Paw (*Nephroma occultum*)

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.

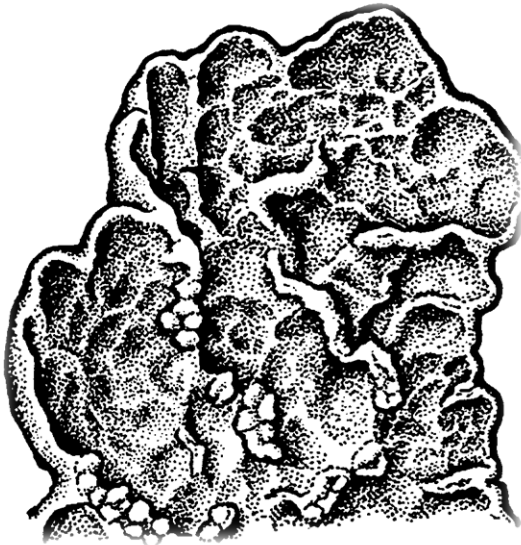


Photo Credit: J. Riley, [E-Flora BC](#)

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:

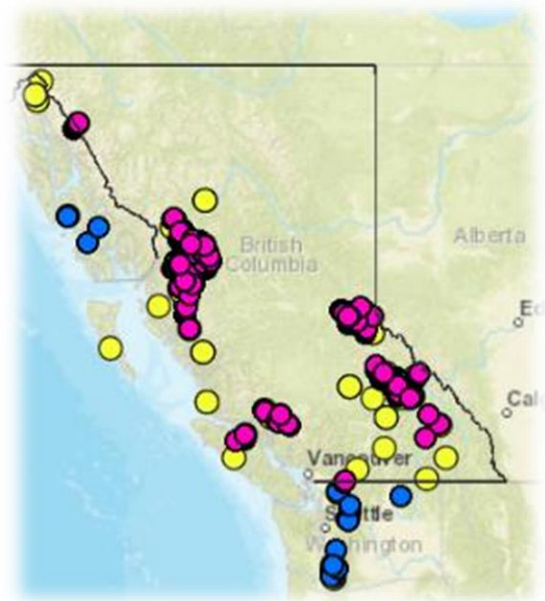
- BAFAun; CWHds; CWHvm; CWHxm; ESSFwcp; ESSFwvp; ICHmc; ICHvk; ICHwk; MHmm; SBSvk

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*)

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: S. Brinkner, [LichenPortal](#)

Status:

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

BEC Zones:

- SWBmk

Natural Resource District:

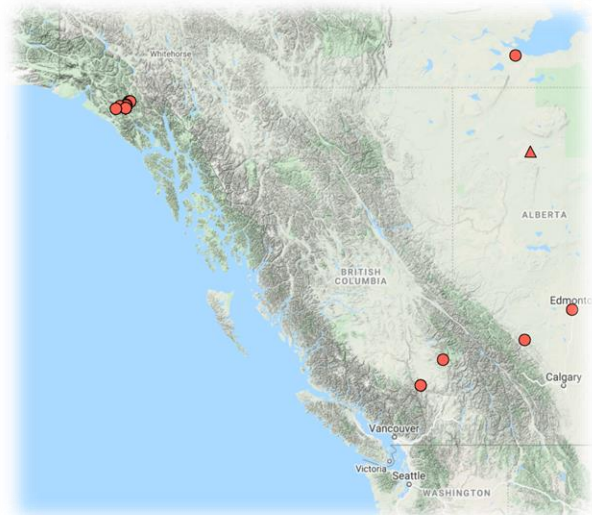
- Ft Nelson, Peace, Mackenzie, Prince George, Coast Mountains, Skeena Stikine



Photo Credit: [iNaturalist](#)

Range:

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



Map Credit: [LichenPortal](#)

Fence-rail Pixie (*Cladonia parasitica*)

Description:

- Fence-rail Pixie is a grey lichen with a white under surface, generally found on rotting wood.
- The thallus (body of lichen) has scale like lobes (basal squamules) 0.5 cm long, 0.2-1 mm wide, numerous, elongate, and greatly dissected; resembles the branching of coral.
- The lobes form continuous spreading mats. Upper surface pale to dark grey, lower surface white.
- Has stalk-like protrusions (podetia) 0.5 cm tall, rather rare, often conspicuously elevated above the thallus, irregular, deformed, contorted, sometimes flattened, and very irregularly branched, often covered in small granules, fissured with gaping holes when well-developed.
- A similar species is *Cladonia cariosa* which grows on soil rather than conifers, is more grayish, less green, apothecia large & darker brown, larger, fissured, and appressed squamules.

Biology:

- Asexual reproduction from blister-like fruiting structures (conidiomata pycnidia), which are dark brown-black, on the upper surface.
- Apothecia (the spore-producing sexual stage of reproduction), small, dark brown, at the tips of podetia, often on extended projections, mostly clustered.



Photo Credit: A. Khitsun, [LichenPortal](#)

Habitat:

- Found on rotting wood in older forests.



Photo Credit: A. Khitsun, [LichenPortal](#)

Fence-rail Pixie (*Cladonia parasitica*)



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.

BEC Zones:

- ICHdw

Natural Resource District:

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

Range:

- Rare in the interior of BC.
- Found more commonly in the upper Great Lakes and New England south to South Carolina and Tennessee.



Photo Credit: A. Khitsun, [LichenPortal](#)

Status:

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



Map Credit: [LichenPortal](#)

Greater Green Moon (*Dendrioscoticta gelida*)

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 *Dendriscoaulon 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 *Dendriscoaulon 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 gelida*)

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



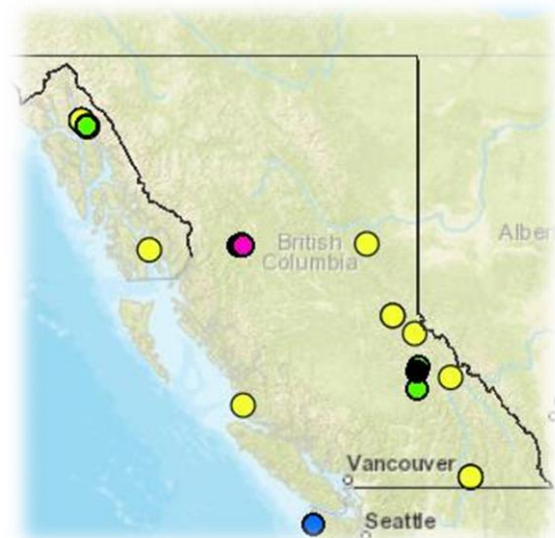
Photo Credit: [iNaturalist](#)

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](#)

Whitebark Pine (*Pinus albicaulis*)

Description:

- Whitebark Pine is usually found at high elevations in the mountain ranges of British Columbia.
- This species occurs in relatively high numbers of individuals over a moderately large range extent in subalpine regions but is highly threatened by mountain pine beetle and white pine blister rust epidemics, climatic warming trends, and successional replacement.
- Whitebark Pine grows up to 20 m in height, but is also often contorted and dwarfed, 5-10 m tall, or a shrubby sprawling timberline tree.
- It has thin bark with light-whitish scales and hairy young twigs.
- The needles are in bunches of five, clustered towards ends of branches, 4-7 cm long and yellow green in colour.
- Seed cones are egg-shaped, deep red to purple, 5-8 cm long.
- The seeds are large, wingless, and nutrient rich.
- The pollen cones are red.
- Whitebark Pines are long lived and can survive over 1,000 years.
- At high elevations, krummholz whitebark pine communities merge into alpine vegetation. At mid-elevation, whitebark pine communities merge into mixed-conifer forests.

Biology:

- The scales of the cone remain closed and shed the seeds slowly, rarely falling from tree intact.
- Whitebark Pine is not adapted for wind dissemination and is almost entirely dependent on Clark's nutcracker (*Nucifraga columbiana*) for successful dispersal and reproduction.
- These birds have been observed traveling anywhere from several hundred meters to over 10 km to cache seeds.
- Various mammals (red squirrel, black bear, grizzly bear, chipmunk, golden-mantled ground squirrel, deer mice) also

transport and cache seeds but not nearly to the extent of the Clark's nutcracker.

- Trees do not reach full cone production until 60 to 100 years of age on most sites.
- Peak cone production extends for another 250 years, then gradually declines.
- Pollen is shed in early to mid-summer.
- Gene flow is facilitated by wind dispersal of pollen and bird dispersal of seed.

Phenology:

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

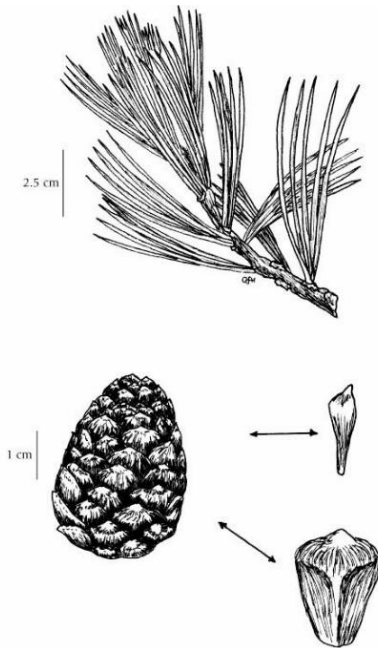


Photo credit: [iNaturalist](#)

Habitat:

- Whitebark Pine occurs within montane forests and on thin, rocky, cold soils at or near timberline at 1,300-3,700 m which lack fine material.
- In moist mountain ranges, it can be found at lower elevations (900-1100m) on warm, dry exposures; but in semiarid ranges, it becomes prevalent on cool exposures and moist sites.

Whitebark Pine (*Pinus albicaulis*)



Credit: [The Illustrated Flora of British Columbia](#)



Photo credit: [E-Flora BC](#)

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.

Management Recommendations:

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

Status:

- SARA Schedule: 1-Endangered (2012)
- Provincial List: Blue
- Identified Wildlife: No

BEC Zones:

- ESSF: mvp, mw, mwp, mww, vc, vcp, vcw, wc, wcp, wcw, wk, wm, wmp, wmw, wv, wvp, xc, xcp, xcw, xv, xvp, xvw
- ICH: dm, dw, mc, mk, mm, mw, vk, wk
- IDF: dc, dk, dm, dw, ww, xc, xh
- IMA: un, unp
- MH mm, mmp, dc, dk, dm, dv, mw, xk, xv
- SBPS: xc
- SBS: dh, mc, vk, wk
- BAFA: un, unp
- CMA: unp
- CWH: dm, ds, ms, un, vm, ws

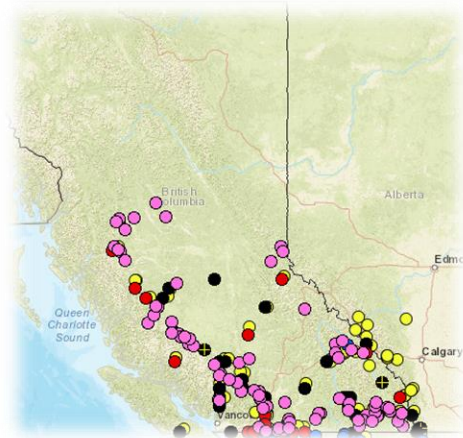
Natural Resource District:

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

Whitebark Pine (*Pinus albicaulis*)

Range:

- Whitebark Pine occurs in subalpine and timberline zones from west-central British Columbia east to west-central Alberta.
- South to central Idaho, southwestern Wyoming, and southern California.



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

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.

Status:

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

BEC Zones:

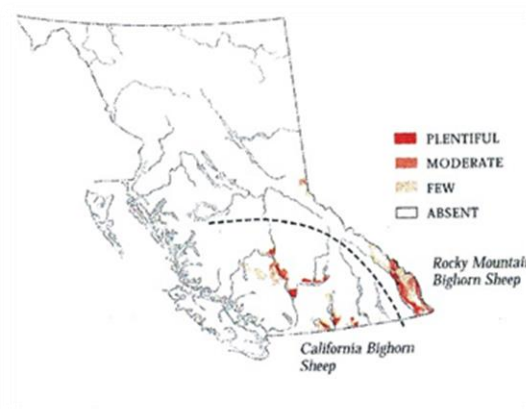
- BAFA, BWBS, ESSF; SWB.

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 Narrowway and Belcourt drainages.
- Herds established near Chase, Castlegar, Spences Bridge, and Salmo.



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

Black Bear (*Ursus americanus*)

Description:

- Not always black, can be cinnamon, brown, and blonde. White Kermode or Spirit Bear is on N-central coast and Blue “Glacier” Bear in British Columbia’s northwest.
- Small black eyes, broad head, rounded ears, short tail, fine, long fur.
- Prominent shoulder hump of grizzlies is absent and facial profile is straight rather than dish-shaped and claws are shorter
- Size and weight, varies greatly by sex, season, food supply, and locale.
- Adult males 60-90 cm in shoulder height and 130-190 cm long and weigh 80-300 kg. Females are smaller at 40-140 kg.
- Solitary life history.



Photo Credit: [Wildsafe BC](http://WildsafeBC.com)

Biology:

- Omnivorous, vegetation is about 80% of diet. Seek abundant food high in protein and energy and available with minimal energy expenditure.
- Mate early Jun–mid Jul but embryo does not implant until Oct–Nov with cubs born Jan–Feb during hibernation weighing about 400 g and nurse while mother hibernates.
- Cubs stay with mother for first year.
- Usual hibernation is 3-5 months on S coast and 5-7 months in the interior and northern. Females hibernate longer than males.
- Coastal dens in or under large trees, snags, logs, or stumps. May be 25 m above ground. Interior, in tree cavities, but can den in rock cavities, under-brush piles, or in holes dug into ground.

Habitat:

- Prefer forested and shrubby areas to open but use wet meadows, high tidelands, ridgetops, burned areas, riparian areas, and avalanche chutes.
- Home ranges (feeding areas joined by travel routes), males about 25-150 km² - larger than females', 5-25 km².
- Home ranges may shift due to environmental factors and often overlap those of other bears.

Phenology:

Hibernate										Hibernate	
Birth		Nursing			Fertilization				Implantation		
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec



Photo Credit: [USDAFS](http://USDAFS.com)

Black Bear (*Ursus americanus*)



Field Action Required:

- If a potential den is observed, and it is safe to do so, document the location of the den, take photos, and flag the den.
- Never approach a bear or a bear den during the winter. If occupation status of a den is unknown, stay away.
- Report the den observation to supervisor and contact BCTS.

Management Recommendations:

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

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.

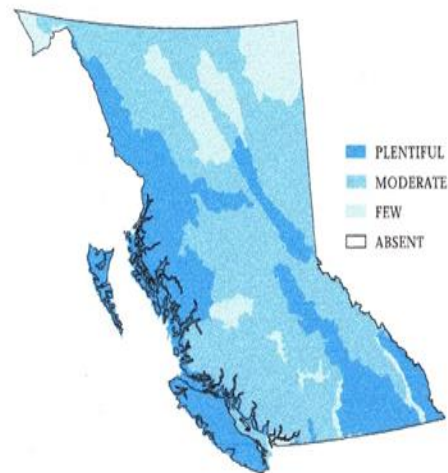
Range:

- Occupies most of BC.



Opening to Bear Den under tree root

Photo Credit: Brian Gustafson



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

Boreal Caribou (*Rangifer tarandus*) pop. 14



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 $\geq 700 \text{ km}^2$.
- Live in small, dispersed, bands throughout year, not in discrete herds.



Photo Credit: [cpawsbc](#)

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

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](#)

Management Recommendations:

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



Photo Credit: [inaturalist](#)

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.



Map Credit: [BC Ministry Environment](#)

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



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](#)

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.

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.

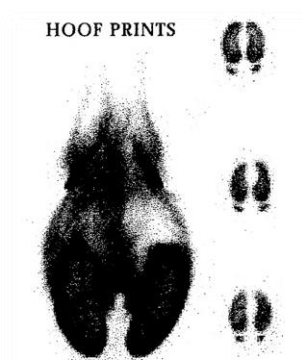
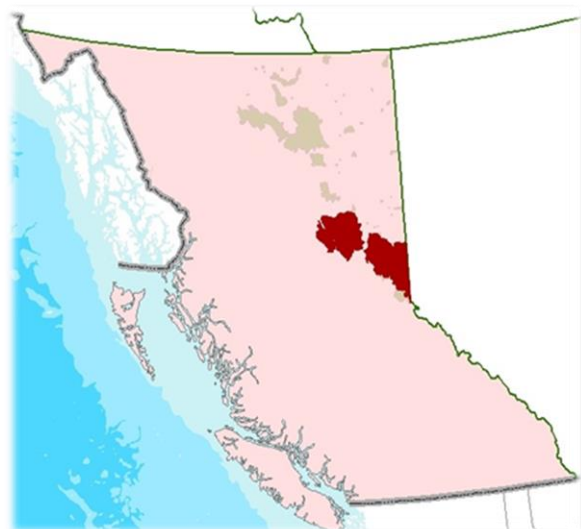


Photo Credit: [BC Ministry of Environment](#)



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

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



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.

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.



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

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



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.

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.

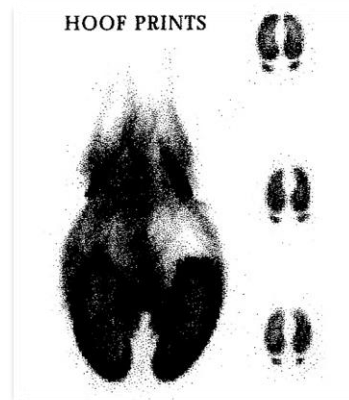
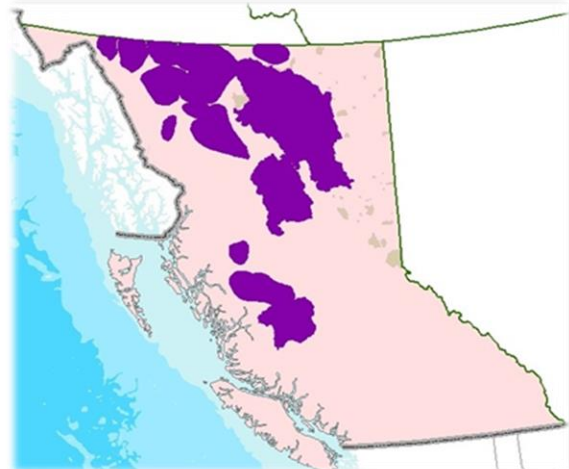


Photo Credit: [BC Ministry Environment](#)



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

Southern Mountain Caribou (*Rangifer tarandus*) pop. 1



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.
- Spend much of year at high elevation in ESSF.



Photo Credit: [BC Wildlife Federation](#)

Biology:

- Female adult survival is low due to predation.
- Live in discrete herds.
- Population has declined and continues to decline.
- 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 arboreal lichens, spring diet, forbs and graminoids increases and summer food 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.
- Consistent use of mineral licks.

Phenology:

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

Habitat:

- Early winter, prefer low elevation ICH areas, gentle terrain, high productivity, high canopy cover, old and young forests with mild, dry climate.
- Late winter, prefer high elevation, old forest, north aspect, stands of Engelmann spruce and Subalpine fir.
- Spring, young and old prefer closed canopy, high productivity, cedar, hemlock and spruce forests at low elevation.
- Summer prefers old Subalpine fir and Engelmann spruce high elevation closed canopy forests.
- Critical need, access to undisturbed high elevation calving range.
- Connectivity within and between range habitat is essential for survival.
- Suitable 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.

Southern Mountain Caribou (*Rangifer tarandus*) pop. 1



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.

Status:

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

BEC Zones:

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



Photo Credit: [inaturalist](#)

Natural Resource District:

- Thompson Rivers, 100 Mile House, Cascades, Rocky Mountain, Selkirk, Okanagan, Shuswap, Mackenzie, Prince George.

Range:

- Rocky Mountains of British Columbia and Alberta from the Peace River S to Jasper; and in Cariboo, Monashee, Selkirk and Purcell Mountains of British Columbia and Northern Idaho.
- Home range, 150–600 km² but varies from <100 to >800 km².
- Little horizontal distance migration (5-50 km) but strong elevational shift (300-650 m).

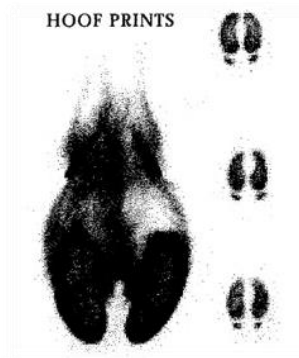
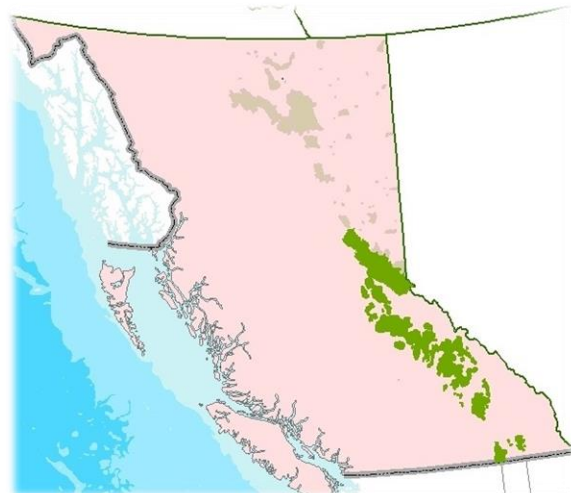


Photo Credit: [BC Ministry of Environment](#)



Map Credit : [BC Ministry of 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](#)

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



BCTS
BC Timber Sales



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.

Status:

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

BEC Zones:

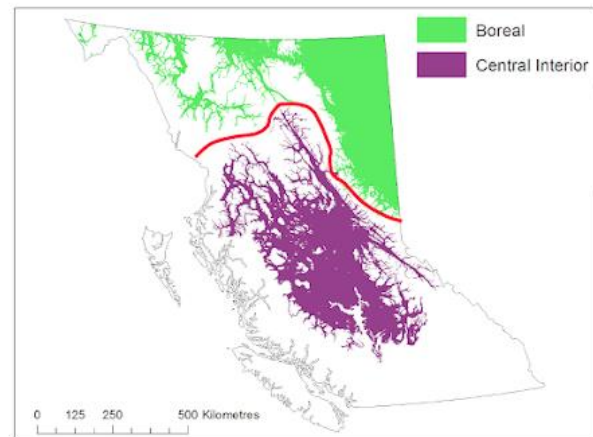
- BWBS, CWH, ESSF, ICH, MH, MS, SBPS, SBS, SWB, IDF.

Natural Resource District:

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

Range:

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



Fisher - Columbian Population (*Pekania pennanti*) pop. 5



Description:

- Medium-sized carnivore.
- Long thin body characteristic of weasel family, pointed faces, rounded ears, and short legs.
- Fur deep brown to black with lighter hairs around the face, neck. Much grizzling around shoulders and back.
- Females weigh 2-3 kg, measure 75-95 cm in length. Tail about one-third of length in both sexes.
- Males weigh 4-6 kg, 90-120 cm long.
- Track pattern is like mink and marten but larger.



Photo Credit: [inaturalist](#)

Biology:

- Single, undifferentiated species throughout their range. 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 found in cavities of standing trees, generally broadleaves.
- Kits are blind, deaf, and have only a sparse covering of fine hair at birth. Stay in den for their first 8 weeks.

Habitat:

- Not numerous, vulnerable to habitat loss.
- Preferred habitat is riparian and dense wetland late successional forests.
- Affinity for broadleaf stands, but conifer forests dominate most 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.
- Occupancy analyses suggests continued declines in population abundance.
- Movement habitat (tree and/or dense shrub cover) is required to safely travel between important habitats, and to access new areas when dispersing.
- Movement habitat is found in forested stands, total cover is > 50%.
- Cover does not need to be continuous, openings > 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 - Columbian Population (*Pekania pennanti*) pop. 5



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.

Status:

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

BEC Zones:

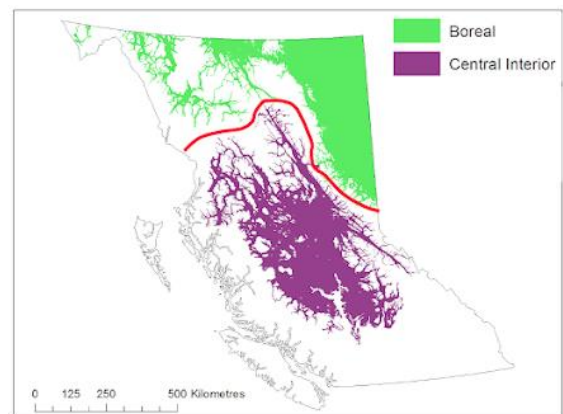
- BWBS, CWH, ESSF, ICH, MH, MS, SBPS, SBS, SWB, IDF.

Natural Resource District:

- 100 Mile House, Arrow Boundary, Cascades, Central Cariboo, Chilcotin, Columbia, Headwaters, Kamloops, Kootenay Lake, Okanagan Shuswap, Quesnel, Rocky Mountain.

Range:

- Large range in central BC interior but is extirpated in the southern BC interior.
- Suitable areas in parts of Bridge River drainage, Chilcotin, Cariboo, Omineca, Williston, Nechako, Takla, Bulkley and Skeena drainages.
- Not found in former range south of Thompson River, Adams River and lands east, and Kootenays and Columbia areas.



Central Interior = Columbian Fisher pop. 5

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 digging 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

Front claw: 1-2" long

Tall ears

Straight face profile

No prominent shoulder hump

Short claws

Grizzly Bear

Front claw: 2-4" long

Short rounded ears

Dished face profile

Shoulder hump

Long claws

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

Photo

Credit: USDAFWS

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.

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.

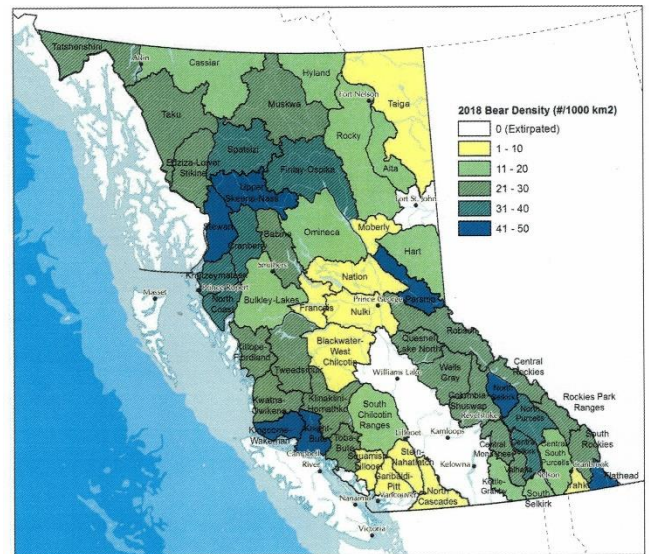
Natural Resource District:

- 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](#)

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.

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.

Phenology:

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



Photo Credit: [Parks Canada](#)

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.



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

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*)



BCTS
BC Timber Sales



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.

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*)

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*)



7.5 * 4.8 cm



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

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.



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

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.

Status:

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

BEC Zones:

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

Northern Myotis (*Myotis septentrionalis*)

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*)



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.

Status:

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

BEC Zones:

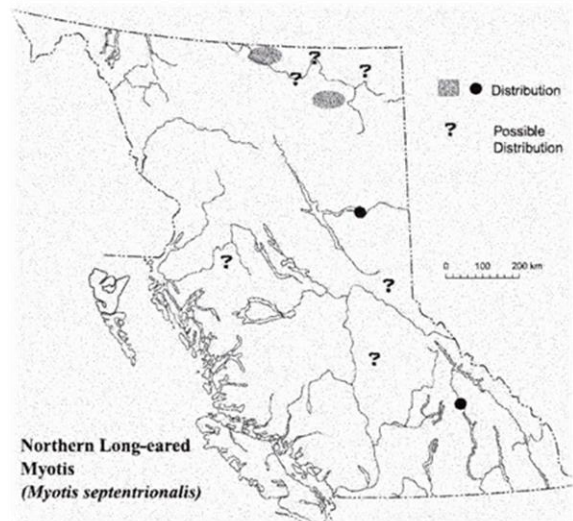
- BWBS, ICH, MH, SBS, CDF, ICH, IDF, PP

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](#)

Stone's Sheep (*Ovis dalli stonei*)

Description:

- Stone's Sheep with its grey to black body, white rump patch and black tail.
- White inside the ears and grey on the outside, a white belly, white on the backs of the legs.
- Horns more triangular in cross-section, flare more widely from the head, and rarely "broomed" or broken at the tips compared to bighorn sheep and never show the dull, medium-brown coat colour.
- Rams stand 90 cm at the shoulder, weigh up to 110 kg, and have horns up to 122 cm from base to tip.
- Ewes' slender horns never get more than 25 cm.



Photo Credit: [Hunters for BC](#)

Biology:

- Herd animal, uncommonly seen alone, although they can be widely scattered during summer.
- Rut, mid Nov – mid Dec. Lambs weighing 3-4 kg born late Apr-early June in traditional lambing areas.
- Lambs stay with mother until next spring.
- Diet grasses and grass like plants. In spring and early summer, eat newly sprouted willow and poplar leaves.
- Primary factor limiting population and growth is forage (amount, quality).
- Virtually all fat reserves used to survive winter shortages.
- Reproduction is tightly related to nutrition in their short growing season locale.

Phenology:

					Yearlings Leave							
					Birth	Nursing			Wean	Breeding		
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	

Habitat:

- Alpine animals but venture into subalpine brushlands and lower forested areas.
- Occur in herds separated by landforms such as plateaus or forested valleys.
- Summer ranges at remote higher elevations with graminoid forage, variety of forbs, and low shrubs, near escape terrain.
- After rut, all sex and age classes found on localized winter range; can be lambing area, lower in elevation, drier, and windswept (exposes forage).
- Enter forest edges in winter but find most forage in adjacent open areas. Short legs – hard to cope with deep snow.
- Lambing habitat has escape terrain – steep rugged cliffs or rock outcrops.
- Travel several km in spring – early summer to access mineral licks.

Stone's Sheep (*Ovis dalli stonei*)



Field Action Required:

- If observed, stop work in the immediate area until a biologist with experience with Stone's Sheep 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.

Status:

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

BEC Zones:

- BAFA, BWBS, ESSF; SWB.

Natural Resource District:

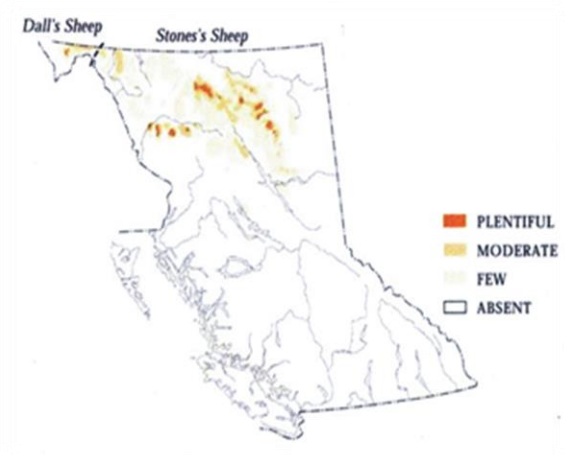
- Coast Mountain, Fort Nelson, Mackenzie, Peace, Skeena Stikine.

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.



Photo Credit: [iNaturalist](#)



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 Status:

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

BEC Zones:

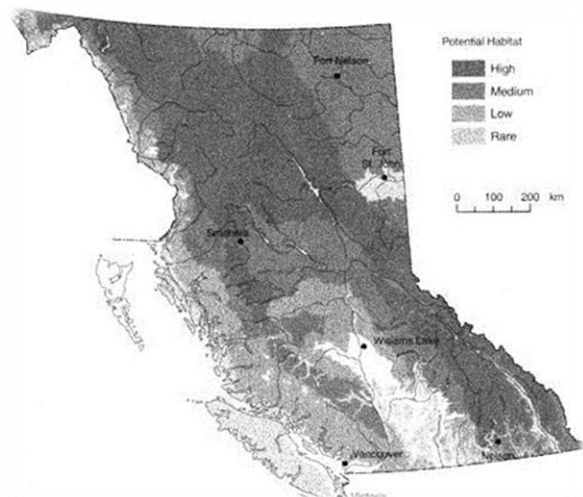
- BAFA, BWBS, CMA, CWH, ESSF, ICH, IDF, IMA, MH, MS, SBPS, SBS, SWB.

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](#)