

# BCTS SOG Field Cards for Species at Risk (SAR)



## Amphibians

**Red-legged Frog**, *Rana aurora*  
**Western Toad**, *Anaxyrus boreas*

## Birds

**Bald Eagle**, *Haliaeetus leucocephalus*  
**Great Blue Heron**, *Ardea herodias fannini*  
**Marbled Murrelet**, *Brachyramphus marmoratus*  
**Northern Goshawk**, *Accipiter gentilis laingi*  
**Northern Pygmy Owl**, *Glaucidium gnoma swarthi*  
**Osprey**, *Pandion haliaetus*  
**Peregrine falcon**, *Falco peregrinus*  
**Western Screech Owl**, *Megascops kennicottii kennicottii*

## Species at Risk Awareness, Gastropods

### Insects

**Johnson's Hairstreak**, *Callophrys johnsoni*

### Lichens

**Oldgrowth Specklebelly**, *Pseudocyphellaria ranierensis*

### Mammals

**American Water Shrew**, *Sorex palustris brooksi*  
**Black Bear**, *Ursus americanus*  
**Grizzly Bear**, *Ursus arctos*  
**Little Brown Myotis**, *Myotis lucifugus*  
**Mountain Goat**, *Oreamnos americanus*  
**Roosevelt Elk**, *Cervus elaphus roosevelti*  
**Vancouver Island Marmot**, *Marmota vancouverensis*

### Plants

**Western yew**, *Taxus brevifolia*  
**White-lip rein orchid**, *Platanthera ephemerantha*

### Reptiles

**Painted Turtle**, *Chrysemys picta pop. 1*

### Species for Log Handling Facilities

**Northern Abalone**, *Haliotis kamtschatkana*  
**Olympia Oyster**, *Ostrea conchapila*  
**Killer Whale**, *Orcinus oca* pop. 5 & 6

# Red-legged Frog, *Rana aurora*



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Red-legged Frog Egg Mass



Red-legged Frog Tadpole

## Description

- Medium sized brown-reddish frog, with smooth skin and black 'freckles'.
- Males are approximately 7 cm in length; females can be longer, approximately 10 cm.
- Named after their long slender hind legs, with red colouring on the undersides.
- Usually have a dark mask and upper jaw stripe running back to the shoulder.
- *Tadpoles*: tan to brown color with specks throughout their body. Their bodies look short because they have a long tail that is at least as long as the length of their body. The tail has a dorsal fin with light spots on it. Mouth with 4 teeth rows on the bottom and 3 on the top. They reach a size of 2-7 cm before they metamorphose.

## Similar Species

- Oregon Spotted Frog

## Biology

- Begin to mate & lay their eggs very early in spring, as early as January in coastal areas.
- Males call underwater to attract females.
- Females lay eggs in large jelly-like clusters of 750-1300, and clusters attached to stems of aquatic plants just below the surface.
- Eggs are in a grapefruit size mass; individual eggs are black above and white below.

## Habitat

- Adults often found in damp wooded areas.
- During breeding season, which is winter to early spring, they may be found in ponds and streams.
- *Elevations*: 0-850 m

## Occurrence: DSI, DCR

- In BC, Red-legged Frogs are found on the mainland coast, Fraser Valley, Vancouver Island, and other small coastal islands. Outside of BC, range can extend south to California.

## Status

BC: Blue-listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Special Concern (SARA Schedule 1)

## Action Required

- Notify BCTS and document location of verified breeding area.
- Consult qualified professional (if necessary) to verify identification & breeding.
- Biologist will work with field team staff to design a riparian buffer between & around occupied breeding ponds or wetlands within or adjacent to cutblock.
- Refer to the BCTS SOG Red-legged Frog and Western Toad Protocol

# Western Toad, *Anaxyrus boreas*



## Occurrence: DSI, DCR

- Found throughout BC

## Status

BC: Yellow Listed (Not at Risk);

Canada: Special Concern (SARA Schedule 1)

## Action Required

- Notify BCTS and document location of suspected breeding area.
- Consult a qualified professional (if necessary) to verify identification and breeding
- Biologist will work with field team staff to design a riparian buffer between and around occupied ponds or wetlands within or adjacent to the cutblock
- Refer to BCTS SoG Management Protocol for Red-legged Frogs and Western Toads

## Description

- Adult Western Toads are 10 – 13 cm long,
- Can be a range of colours including brown, grey, green and red,
- Adults have a white or cream stripe down the center of their backs,
- Bellies and throats are lightly coloured and mottled with black spots,
- They have large, kidney-shaped parotid glands (poison-secreting glands) behind their eyes.
- Their backs are covered in warty glands.

**Similar Species** -No similar species on the coast

## Biology

- Breed in mid-spring congregating in ponds and shallow lakes
- Males do not call to attract mates
- Females lay strands of up to 12,000 eggs in a single file, multiple females may lay overlapping strands of eggs
- usually silent, may “peep” when handled
- tadpoles are dark brown or black, swarm in dense groups in warm and shallow waters
- after 6-10 weeks toadlets migrate out of ponds in huge numbers, they reach sexual maturity in 3-5 years and can live up to 11

## Habitat

live under leaves and in depressions in fields, forests, meadows and wetlands

Can tolerate dry environments, during dry spells will be close to streams and ponds

near estuaries and broad intertidal zones.

- Secrete a bitter toxin that repels most predators except for garter snakes
- Toads will eat worms, slugs, insects and also larger ani-



# Bald Eagle, *Haliaeetus leucocephalus*

Adult & Juvenile



## Description

- Large eagle, with a wingspan of more than 2m, measures 76 cm tall and can weigh over 7 kg.
- Adults have a dark brown (almost black) body, with white contrasting feathers on their head and tail. Beak, eyes and legs are yellow.
- Juvenile Bald Eagles have a mottled brown colour all over. They achieve the distinct adult colouration at four or five years of age.

## Similar Species

- Juvenile Bald Eagles are often confused with Turkey Vultures or Golden Eagles.

## Biology

- Bald Eagles feed primarily on fish, but can also feed on aquatic birds, amphibian, reptiles and mammals (alive or found dead).
- The Bald Eagle nest is the largest of any bird in North America; on average the nests are 1.5-2m across and 1m tall.
- Females lay 1-3 eggs.
- Nesting activity can occur from mid Feb to July

## Habitat

- Nests are almost always in dominant old-growth trees near salt water or fresh water shorelines. Nesting shorelines are often near estuaries and broad intertidal zones.
- In the interior, nesting habitats are along large low-gradient rivers and high floodplain/ wetland development, and at low elevation lakes.
- Common nest tree species include; Sitka spruce, Douglas fir, western red cedar, cottonwood and Aspen. These are usually dominant or co-dominant specimens in the nest vicinity and quite often knarled and very old.
- Nest found at lower elevations.

## Occurrence: DSI, DCR

- Most of Canada's breeding population is found on BC coast.

## Status

BC: Yellow-listed (Not at Risk); Wildlife Act–Section 34(b) (cannot injure, molest or destroy a bird, eggs, or nest)

Canada: Not at Risk

## Action Required

If nest is found:

- Retain the nest tree (protected under the *Wildlife Act*) with a 200m veg buffer.
- Notify BCTS, document, flag the location of the nest tree and occupation status
- Contact a qualified professional if you are uncertain about occupancy.
- From mid February to Aug. 31, stop work within 200m of an occupied nest until an assessment has been completed by a qualified professional biologist

# Great Blue Heron, *Ardea herodias fannini*



## Description

- The pacific subspecies is the largest of all herons in Canada, standing at 1 meter tall.
- Tall long-legged, long-necked wader that holds its head in an "S" curve at rest and in flight.
- Long, thick yellow bill, white crown and face.
- Black plume from above eye to beyond back of head.
- Black shoulder, shaggy blue-gray body & wings.
- Juvenile has brown-grey back and upper wing plumage and lacking black eyebrow.
- Sexes similar

## Similar Species

- Other Great Blue Heron subspecies.

## Biology

- nest in colonies of 2-10 nests (average).
- Nests are reused in successive years.
- Nests, 4-70 m high in trees, are large stick platforms, < 1 m diameter, lined with twigs, bark strips, coniferous boughs and rushes.
- Both nest and ground beneath are messy with droppings, old food, & sometimes dead chicks.
- Currently the four main colonies in southern BC contain 45% of the Canadian population.

## Habitat

- Populations nest in quiet woodlots within 8 kms of their foraging habitat.
- Nest in undisturbed mature deciduous; less often in mixed, or coniferous forest
- Foraging habitat is usually large eelgrass meadows along rivers and in estuarine and freshwater marshes.
- *Elevations:* 0-1100 m, but mainly near sea level.

## Occurrence: DSI, DCR

- Range extends from the coast of southeastern Alaska (Prince William Sound) south to Puget Sound, Washington. Along the entire coast of BC.
- Potential breeder throughout much of the SOG Business Area

## Status

BC: Blue-listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Special Concern (SARA Schedule 1)

## Action Required

If nest or nest trees are found:

- Notify BCTS and document occupancy and location.
- Retain the nest tree or trees within a WTP with a 200m buffer.
- From Jan 15 – Sept 15 maintain a quiet buffer within 200m of nest site, if occupied.

# Marbled Murrelet, *Brachyramphus marmoratus*



Summer/Breeding Plumage



Winter Plumage

## Description

- A small (length 24-25cm, mass 190-270g) chunky seabird with a black bill and an entirely dark tail.
- Breeding adult is dark brown above, heavily mottled below.
- In winter, plumage is white below with white scapular streak on otherwise dark upperparts.
- Solitary or in pairs, generally does not flock with other birds.

## Biology

- Marbled murrelets normally feed in inshore marine waters, including shallow bays, channels and fjords.
- In British Columbia, adult diet during the breeding season is mostly fishes, primarily Pacific Sandlance and Pacific Herring or crustaceans, euphausiids
- Clutch size 1, incubation lasts 30 days with both sexes alternating in 24hr shifts.
- Young are fed by adults 2-4times daily and fledged in 27-40 days.

## Habitat

- Nests up to 30-80 km inland.
- Prefer old growth forest (Sitka spruce, with an abundance of mossy platforms for landing and nesting purposes)
- Forage in coastal areas, mainly in salt water within 2 km of shore, including bays and sounds, not uncommon up to 5 km offshore.

## Occurrence: DSI, DCR

- Nesting is widespread in suitable old growth stands on Vancouver Island and the mainland coast.
- Nests up to 30-80km inland.

## Status

BC: Blue-listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Threatened (SARA Schedule 1)

## Action Required

- Managed under higher level planning, FRPA, WHA's OGMA's etc.

# Northern Goshawk, *Accipiter gentilis laingi*



## Description

- Northern Goshawks are a raven-sized raptor, with short, rounded wings and a long tail.
- Adults (>2 years) have a conspicuous light grey supercilium (feathering above the eye) flaring out behind the eye that separates their black crown from their blue-grey back.
- Adults have a white eye-stripe, chests are white with grey barring, and their tails have prominent alternating black and grey bands.

## Similar Species

- Sharp-shinned Hawk (much smaller) and Cooper's Hawk (lacks white eye-stripe) as well as the *Accipiter gentilis atricapillus* subspecies (is usually lighter in colour, and more frequently found further inland).

## Biology

- Generally feed on large prey, including squirrels and large birds, (Grouse, woodpeckers, Varied Thrush and Steller's Jay).
- Breeding and brood-rearing season is from April to September.

## Habitat

- Goshawks are well suited for dense, mature forest stands, and generally require structural stage 6 or 7.
- Prefer habitat containing high levels of coarse woody debris, snags and stumps, where their prey is abundant.
- Nest areas usually contain the active 'nest tree' as well as additional alternate nests.
- Elevation: lower to mid elevations.



## Occurrence: DSI, DCR

- *Laingi* subspecies are found along the coast from SE Alaska, S to Western Washington. In BC, they are found within four designated conservation areas, Haida Gwaii, North Coast, South Coast and VI.

## Status

BC: Red-listed (Threatened or Endangered) and Identified Wildlife Species in B.C.

Canada: Threatened (SARA Schedule 1)

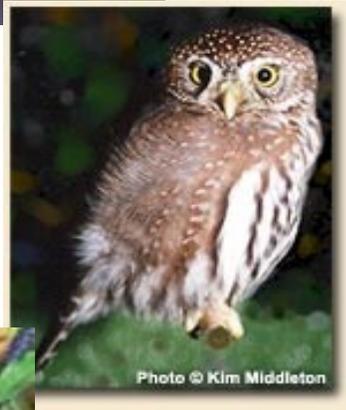
## Action Required

If nest or bird is found:

- Stop any work that may cause disturbance in area (road construction, harvesting)
  - Immediately notify BCTS and document location and occupancy.
  - Contact a qualified professional to verify species and nest occupancy and assist in retention design.
- 
- Refer to the BCTS SOG Northern Goshawk Management Protocol.

January 2019

# Northern Pygmy Owl, *Glaucidium gnoma swarthi*



## Description

- Very small owl (maximum 80 g), slightly smaller and darker than the mainland species.
- Yellow eyes; also has pair of vertical black patches (resembling eyes) on nape
- Grey-brown colour with whitish underbelly.
- Length: 6 inches Wingspan: 15 inches
- Large, rounded head, crown spotted white
- Dark streaking on under parts, long, dark tail with thin, white bars
- Sexes similar
- Predatory bird, more diurnal than other owl spp

## Similar Species

- Northern Saw-whet Owl

## Biology

- Crepuscular (active dawn and dusk) hunter
- Preys on small rodents
- Series (60-80/min) of single or double "toot" notes.
- Non-migratory

## Habitat

- Habitat generalist
- Secondary cavity nester, using second-growth and mature coniferous forests, mixed riparian forest and deciduous forest
- Prefers edge rather than interior forest
- Limited by suitable habitat, especially the availability of cavities for nesting
- Retention of WTs on the landscape critical
- May reuse cavities for several consecutive years
- Pairs typically spaced 600 m to 1600 m apart
- Will nest in WTPs within logged areas.
- Elevations: 50 to < 1700 m.

## Occurrence: DSI, DCR (VI)

- Range on VI, where suitable habitat exists, from Cape Scott to Sooke.
- The largest concentration is in the Nimpkish River Valley. There is also a small population on Quadra Island. Present in CDF, CWH, MH biogeoclimatic zones.

## Status

BC: Blue-listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Not listed

## Action Required

If an active nest is found:

- Document location of sighting and/or nest tree.
- Immediately notify BCTS & contact qualified professional to verify species and assist in retention
- Retain the nest tree within a WTP with a 200m buffer around the nest tree and leave other snags or trees with cavities within the WTP.
- An active nest should not be disturbed between April 1<sup>st</sup> and August 31<sup>st</sup>

# Osprey, *Pandion haliaetus*



## Description

- Ospreys have long narrow wings, dark brown upperparts, white underparts, a white head 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.
- Average length 56-64 cm, wingspan 147-183 cm.

## Similar Species

- Superficial similarity to adult Northern goshawk

## Biology

- Ospreys occur primarily along rivers, lakes, reservoirs, and seacoasts.
- Ospreys eat almost exclusively fishes but will occasionally take rodents, birds, other small vertebrates or crustaceans.
- Ospreys capture prey with a feet-first plunge into shallow water, usually by flight hunting, sometimes from perch.

## Habitat

- They typically build large stick nests on living or dead trees and also use numerous man-made structures such as utility poles, wharf pilings, windmills, microwave towers, chimneys, and channel markers.
- Nests are usually near or above water.

**Occurrence:** DSI, DCR

## Status

BC: Yellow-listed (Not at Risk); Wildlife Act—Section 34(b) (cannot injure, molest or destroy a bird, eggs, or nest)

Canada: Not listed

## Action Required

If nest is found:

- Retain the nest tree (protected under the *Wildlife Act*)
- Default 200m vegetative buffer around nest location
- A Qualified Professional may be able to recommend alternative buffers on a case by case basis
- Notify BCTS, document, flag the location of the nest tree and occupation status
- Contact a QP if you are uncertain about occupancy.

# Peregrine falcon, *Falco peregrinus*



## Description

- Medium to large (crow-sized) falcon; Males are 36-49cm and 650g, females 45-58cm and 950g.
- Adults have blue-grey or darker plumage on upperparts, and underparts are pale, white-grey with dark spotting/barring.
- Have dark “hood” on crown of head with extended malar stripes (“sideburns”).
- Immatures have pale, slate or chocolate brown upperparts, and underparts buffy with dark streaks.
- Clinal differences: darker in wet areas, paler in dry, larger in south and west, smaller in north extent of range.

## Similar Species

- Gyrfalcon: larger, with pointed and broader wings and a larger tail, lack dark hood and malar stripes.

## Biology

- Court in late winter, nest in March or April, clutch size is 1-5 eggs (usually 3-4).
- Nestlings leave nest after 40 days, may stay in vicinity of nest for up to 3-6 weeks.
- Nest are simple scrapes located in substrate, 17-22cm diameter and 3-5cm deep. No nesting material is added and nests are often located on ridges, cliff edges, or buildings. May occasionally use abandoned raven or eagle nests.

## Habitat

- Nests are usually located on cliffs, 4-335m in elevation, often with overhanging cover. Must be near foraging areas (i.e. lake, ocean, river valleys).

## Occurrence:

- *Anatum* subspecies: Southwest coast of BC (CR, SI Forest Districts).
- *Pealei* subspecies: Pacific Coast; Aleutian Islands to Oregon (CR, SI Forest Districts).

## Status:

- BC: *Anatum* subspecies Red-Listed, *Pealei* subspecies Blue-Listed
- Nests (occupied or unoccupied), eggs, and birds of all subspecies are protected under provincial Wildlife Act.
- Canada: *Anatum* Not at Risk, *Pealei* Species of special Concern (SARA Schedule 1).

## Action Required:

- Notify BCTS and document location of suspected breeding area.
- Contact a qualified professional to verify the species and recommend reserve design and timing restrictions

# Western Screech Owl, *Megascops kennicottii kennicottii*



## Description

- Small, streaked owl with yellow eyes.
- The Western Screech Owl has tufts over its ears, and is slightly darker in colouring than the other mainland subspecies, *macfarlanei*.
- Female average Length: 23cm (9.2") Wingspan 56cm (22"). Male average Length: 21cm (8.2"), Wingspan 54cm (21")

## Similar Species

- *macfarlanei* subspecies

## Biology

- Nocturnal, with activity generally beginning 20-30 minutes after sunset.
- Pairs are monogamous and territorial throughout the year.
- Eggs are laid in natural cavities of large trees, or nest-boxes where available, without any nesting material.
- Flight is noiseless with soft wing beats & gliding. Will become motionless if disturbed at roost.
- is very aggressive when defending a nest site, and may attack humans
- male's most common call is a muted trill "hoo-hoo-hoo....", or bouncing ball song, that speeds up at the end, but maintains a constant pitch. A secondary song is a double trill of rapid bursts. Other calls are a soft "cr-oo-oo-oo-oo" given as a greeting call, and a sharp bark given when excited.

## Habitat

- They are found in varied habitats throughout their range.
- Typically in lower elevation forested areas close to water.

## Occurrence: DSI, DCR

- In BC, *kennicottii* occur the entire coast of BC as well as VI, excluding the Queen Charlotte Islands.

## Status

BC: Blue-listed

(Species of Special Concern)

Canada: Special Concern

(SARA Schedule 1)

## Action Required

If an active nest is found:

- Document location of sighting and/or nest tree.
- Notify BCTS and contact a qualified professional (if necessary) to verify species and assist in retention design.
- Retain the nest tree within a WTP with a 200m buffer around the nest tree and leave other snags or trees with cavities within the WTP.
- An active nest should not be disturbed between March 15<sup>th</sup> and August 31<sup>st</sup>.

# Species at Risk Awareness, Gastropods

## Dromedary Jumping Slug, *Hemphillia dromedarius*

BC Red List, COSEWIC: Threatened

### Description

- greyish in colour with cream mottling, base of foot is yellow, orange or cream.
- Body can be up to 6cm long.
- Slit in the mantle through which the internal shell is visible.
- Tail is laterally compressed and keeled, and has a mucous gland (caudal horn) at the tip.

**Biology:** Lays 50 to 60 semi opaque eggs, 3.3mm long by 2.5mm wide, usually in moist, rotting logs or coarse woody debris.

**Habitat:** Mostly found in old growth conifer forests, or forests with old growth characteristics, especially with coarse woody debris.

- **Elevations:** 0-1060m on Van. Island

### Occurrence

- South Island Forest District, up to Kennedy Lake and Port Alberni.

**Action Required:** Notify BCTS, document location of breeding area



Warty Jumping Slug

## Warty Jumping Slug, *Hemphillia glandulosa*

BC RedList, COSEWIC: Special Concern

### Description:

- Body is whitish or grey with darker markings and paler sides. Tentacles and head are blue-tinged and dark in colour
- Numerous bumpy projections (papillae) cover mantle
- Dorsal hump on mantle, body depressed behind hump
- Horn-like fleshy protuberance at end of tail
- Found in moist old growth and young forests, need coarse woody debris and logs.
- **Elevations:** 0-1060m on Vancouver Island

**Biology:** • lays 1-6 translucent tear shaped eggs in small clusters. Eggs 3mmx 2mm

### Habitat:

- Found in moist old growth and young forests, need coarse woody debris and logs
- Elevation—0-1060m on Vancouver Island

### Occurrence:

- Have been found on southern Vancouver Island up to Nanaimo River.

### Action Required:

- Notify BCTS and document location of breeding area.



Dromedary Jumping Slug

## Threaded Vertigo, *Nearctula rowellii*

BC Blue List, COSEWIC: Special Concern

### Description:

- Minute snail with a grey body, lighter on the sides and base.
- Shell averages 2.7mm long, and is dull dark brown and coarse in appearance.
- Lip of shell opening flares outward, has four white dentures inside.

### Habitat

- deciduous and mixed forests, especially riparian areas.
- In CDF and CWH, below 200m elevation in stands with mature bigleaf maple

**Occurrence:** SI, CR Forest Districts:

**Action Required:** Notify BCTS and document location of breeding area.



# Johnson's Hairstreak, *Callophrys johnsoni*



## Description

- Small butterfly with a wingspan of 25-30mm.
- Dorsal surface of the wings is brown; chocolate shade in males, reddish in females.
- Small tail-like protrusion from hindwing is bluish and orange with black dots.
- Underside of wings brown with white stripe, bordered in black, running across both wings.
- Larvae are yellowish-olive green and have red, green, yellow or white markings on raised protrusions along dorsal area.

## Similar Species

- The Cedar Hairstreak is smaller and the white wing stripe is bordered by amber.

## Biology

- Larvae feed exclusively on dwarf mistletoe, most commonly associated with western hemlock in B.C. (CDF, CWH, CMA BEC zones).
- Larvae exude a substance which ants feed upon, and in turn protect the larvae.
- Adults can be seen in flight from late May to early June. Eggs are deposited on western dwarf mistletoe, *Arceuthobium campylopodum*.

## Habitat

- Require mature or old hemlock forests with mistletoe infestations.
- Found at elevations from sea level to 625m.

## Occurrence

- In B.C., Johnson's Hairstreak formerly occurred in southeast and southwest Vancouver Island, and in the Fraser Valley east to Hope. Recent occurrences have been noted only in the Vancouver area.
- Found in the South Island Forest District.

## Status

**BC:** Red-listed and an Identified Wildlife Species.

**Canada:** Not assessed.

## Action Required

- Notify BCTS and document location of verified breeding area.
- Consult a qualified professional (if necessary) to verify identification and breeding area.
- Biologist will work with field team staff to design a reserve around dwarf mistletoe infected trees within or adjacent to the location of the confirmed sightings.
- Refer to Accounts & Measures for managing Identified Wildlife

# Oldgrowth Specklebelly, *Pseudocyphellaria ranierensis*



## **Description**

- Generally 5-12 cm across, broad lobed, and loosely attached to branches and trunks in lowland-mid-elevation old growth forests (>200 years)
- Upper surface is dull pale greenish-blue, top is often weakly dimpled and may be smooth or have short stiff hairs that make it feel rough
- Can be distinguished from other species by its spotted lower surface—tiny white spots on pale brownish background

## **Habitat**

- restricted to sheltered old-growth ecosystems at low to moderate elevations in the Coastal Western Hemlock Zone—often in CWHvm2 or upper elevations of vm1
- preferred habitat is on bark of lower canopy trees (esp Ba) within the dripline of a yellow-cedar
- Also found on Hw, Hm, Yc, Cw, and yew
- Requires open, humid, stable forests—harmed by too much sun or shade

## **Occurrence: DSC, DSI**

- Several occurrences reported near in the mid-Island area—Artlish R, White R, Memekay R
- Also reported near Nitnat R

## **Status**

BC: Blue-listed (Species of Special Concern)

Canada: Special Concern (SARA Schedule 1)

## **Action Required**

- Collect samples collect a sample and place in Ziploc bag, protect from crushing
- Label sample with date, and location, note surrounding forest type including site series
- Store samples in refrigerator until identification can be confirmed

## **Management:**

- Report confirmed locations to the BC Conservation Data Centre
- Ensure specklebelly is represented in cutblock reserves, and that reserve design minimizes edge effect on lichen locations

# American Water Shrew, *Sorex palustris brooksi*



## Description

- Large water shrew with an average length of 152 mm of which 75 mm is tail; average weight of 10.6 grams.
- The water shrew has a bi-coloured body, with glossy black fur on its dorsal surface and silvery white fur on its ventral surface.

## Similar Species

- Pacific Water Shrew, although ranges do not overlap.
- Terrestrial shrews.

## Biology

- The water shrew is semi-aquatic, hunting for prey under water and on land.
- Food is consumed on land.
- The shrew feeds every 10 minutes and consumes its own weight in food every 24 hours.
- Lifespan of 18 months.

## Habitat

- As the shrews spend up to half of their time hunting underwater, they stay very close to water.
- Habitat includes riparian areas, creeks, streams and possibly bogs and marshes.
- Found at all elevations.



## Occurrence: DSI, DCR

- Assumed to be found throughout Vancouver Island; there are only 67 records from 38 locations. Locations are as far north as Port Hardy, along the east coast at the Quinsam River (near Campbell River), as far inland as Robertson Creek (near Port Alberni), along the west coast at Lost Shoe Creek (near Ucluelet) and as far south as Veitch Creek (near Victoria).
- South Island and Campbell River Forest Districts

## Status

BC: Blue listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Not listed

## Action Required

- Notify BCTS, contact a qualified professional to verify species and assist in retention design.
- Maintain a 5m buffer along streams in the vicinity of where the shrew was found.

# Black Bear, *Ursus americanus*



Dens can be under logs, within the trunk of a tree or in a cavity higher in a tree

## Description

- The Black Bear is the smallest and most widely distributed of the bear family in North America.
- Colour can vary from black, cinnamon, brown and blonde. A white coloured-morph, called Kermode or Spirit Bear is reported most frequently on the north-central coast of BC.

## Similar Species

- Grizzlies are usually larger and are seldom completely black. Grizzlies have a prominent shoulder hump, and a wider dish-shaped face, which are both lacking in Black Bears.

## Biology

- Black Bears are classified as carnivores, but are omnivorous.
- Mating occurs in June and July and cubs are born during hibernation in January-February.
- In coastal BC dens are in or under large diameter trees, snags, logs or stumps. Dens can be up to 25 meters above ground.

## Habitat

- Population is higher in wet climatic zones where vegetation is more plentiful and there is greater access to spawning salmon.
- Black Bear habitat includes areas that provide structure for denning habitat (large diameter trees and stumps with cavities) and optimal forage, which can include salmonberry and skunk cabbage, as well as other berries.
- Found at all elevations.

## Occurrence: DSI, DCR

- Natural range includes forestland across the province, coastal islands including Vancouver Island and the Queen Charlotte Islands.

## Status:

BC: Yellow-listed (Not at Risk)

Canada: Not at Risk

## Action Required: Under the 2018 BCTS SOG Bear den protocol

If a den is found:

- Notify BCTS and document location of the den and whether it is occupied.
- Contact a qualified professional if you are uncertain about occupancy.
- Retain den site within a windfirm WTP (preferably 1 ha or tied to a riparian reserve); ensure there is security and thermal cover around the den, some larger trees or snag where adult females and cubs can “escape” to and a healthy shrub layer for forage.
- If den is active, non-disturbance buffers defined in the protocol are applicable in the between Nov 1 and May 15.
  - 200m buffer around the den(s) for falling, primary harvesting activities, hauling, road building (no blasting)
  - 1000m buffer around dens for blasting or helicopter yarding

## **Portions of the Campbell River Forest district fall within the Great Bear Rainforest: Under the GBRO Part 3-South Central Coast, Division 5-Wildlife,**

19. Objectives for grizzly and black Bear Dens

(1)Protect grizzly Bear Dens and black Bear Dens.

(6) All found Bear Dens must be documented and this documentation must be submitted to the Applicable First Nations and the Province of British Columbia at the end of each calendar year.

# Grizzly Bear, *Ursus arctos*

## Description

- Grizzlies are usually larger with a prominent shoulder hump and a wider dish-shaped face, which are both lacking in Black Bears.
- The long, outer guard hairs of the Grizzly Bear are often tipped with white, silver, or cream giving the bear a grizzled appearance.
- Coat colour is quite variable, usually brown but ranging from black to almost white.
- The front claws on a Grizzly Bear are longer than on Black Bears, being as long as 10 cm. The long front claws and hump of muscle on the shoulders are adaptations for digging.



## Similar Species

- Black Bears can sometime be mistaken for Grizzly Bears, as their ranges overlap.

## Biology

- Mating occurs May through mid-July and gestation is 63-70 days; 1-3 cubs are born in January or February in the den. Cubs will remain with their mothers for 2 - 4 years.
- Grizzly Bears hibernate for 5-8 months, and usually dig their dens on north-facing slopes to ensure good snow cover.
- Grizzly Bears are omnivorous

## Habitat

- Grizzly bears are found in a variety of habitats, from dense forests, to subalpine meadows
- Important feeding areas are estuaries, skunk cabbage swamps, wetlands, herb-dominated avalanche tracks on warm aspects, berry producing sites and salmon spawning reaches.
- Elevations: Valley bottoms to alpine meadows

## Occurrence: DCR (CM)

- Found throughout the coast forest region except the islands, and the southwest portion of the province.

## Status

BC: Blue-listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Special Concern (2018)(SARA Schedule 1)

## Action Required

- If an active block is near a Grizzly Bear WHA, follow GWMs
- If a den, pad trail or significant feeding area is observed within or near a block notify BCTS and document location.
- Maintain the ecological integrity of important seasonal habitats or features within a WTP, buffered retention or a WHA.
- Contact a qualified professional if you are uncertain about retention requirements.

## Portions of the Campbell River Forest district fall within the Great Bear Rainforest. Under the GBRO Part 3-South Central Coast, Division 5-Wildlife,

### 18. Objectives for grizzly bear habitat

- (1) Maintain 100% of Class 1 Grizzly Bear Habitat shown in Schedule D.

### 19. Objectives for grizzly and black Bear Dens

- (1) Protect grizzly Bear Dens and black Bear Dens.

- (2) Adjacent to grizzly Bear Dens, maintain a Reserve Zone with a minimum width of 50 metres.

- (4) In addition to subsections (1) and (2), adjacent to any Reserve Zone required in subsection (2), maintain a Management Zone with an average width equal to 1.0 Tree Length, measured from the outer edge of the Reserve Zone, to protect the Integrity of the Reserve Zone.

- (6) All found Bear Dens must be documented and this documentation must be submitted to the Applicable First Nations and the Province of British Columbia at the end of each calendar year.

# Little Brown Myotis, *Myotis lucifugus*



## Description

- Little Brown Myotis is a small (7-9 g) brown bat with black ears, black wings, and a black tail membrane.
- Cinnamon-buff to dark brown above, buffy to pale gray below.
- Hairs on back have long glossy tips.
- Ear when laid forward reaches approximately the nostril.
- Its wingspan is approximately 22-27 cm. Females tend to be slightly larger than males.
- Compared to other mammals, Little Brown Myotis has a long lifespan; some individuals live more than 30 years
- Myotis bats are difficult to identify in the field and often hibernate in mixed aggregations so all small bats should be managed to the level of the most conservatively regulated species possibly present

## Biology

- The habitat requirements of temperate-region bats vary by season. The habitat is composed of (1) overwintering habitat (i.e., hibernacula, such as caves, abandoned mines, and wells) used for hibernation and overwinter survival, (2) summering habitat that includes roosting habitat (for maternity roosts and males) and foraging habitat within commuting range of the roosts, and (3) swarming habitat used in the late summer and early fall for mating and socializing. Swarming sites are also typically used as hibernacula. Winter concentrations may include tens of thousands of individuals.
- Survival rate is low during the first winter, higher in subsequent years.
- The species has been listed as Endangered due to the treat of White-nose syndrome which is a dermatophyte fungus (*Pseudogymnoascus destructans*).

## Habitat

- Wide range of habitats and often use human-made structures for resting and maternity sites; they also use caves and hollow trees.
- Winter hibernacula typically have stable temperatures between 2-10°C and relative humidity >80%.



**Occurrence:** DCR,DSI

## Status:

BC: Yellow-listed (Not at Risk)

Canada: Endangered (SARA Schedule 1)

## Action Required:

If myotis bats are found or suspected in summer or winter:

- Notify BCTS and document the location
- Contact a qualified professional to assist in reserve design
- Hibernacula are protected as Critical Habitat during winter (October 1- May 31) under the Species at Risk Act.
- All karst features should be considered potential hibernacula and assessed for use by a qualified Professional Biologist.

# Mountain Goat, *Oreamnos americanus*



Adult billy (male)



Stride: 38 cm  
Track: 6.5  
cm/ 3.5 cm



Adult nannie (female)



## Occurrence: DCR (CM)

- Present in most mountain ranges except those on VI, the Queen Charlottes and other coastal islands.

## Status

BC: Blue-listed (Species of Special Concern) and Identified Wildlife Species in B.C.

Canada: Not listed

## Action Required

- Notify BCTS if a goat is within or near the block area between November 15<sup>th</sup> and April 15<sup>th</sup>.
- Conventional and helicopter harvesting operations and related activities within 500m (vertical and horizontal) of designated mountain goat winter range polygons should be restricted to a work window of April 15<sup>th</sup> to November 15<sup>th</sup>
- Contact a qualified professional for additional guidance

## Description

- Adult males (billies) weigh on average, 70-120 kg.
- Adult females (nannies) weigh between 55-75 kg.
- Both sexes have thin, black horns up to 30 cm long which grow throughout life and never shed.
- Built to live in steep, rocky terrain. Mountain Goats have very large forequarters, a deep chest and well-developed shoulder muscles, both for climbing and pawing for food in the snow.
- They have rough-textured hooves with traction pads that extend slightly past the rim of the hooves. They can also spread their toes widely to distribute their weight over more ground.

## Similar Species

- Female Bighorn Sheep are sometimes confused with Mountain Goat, Bighorn sheep are browner

## Biology

- Mating season begins in late Nov to early Dec
- Gestation is 6 months, birthing on secluded ledges in May or early June, (1 kid is common).
- Mountain goats forage on a wide variety of plants, including lichens, ferns, grasses, shrubs and both deciduous and coniferous trees.
- Attracted to mineral licks in the summer.

## Habitat

- Occur in wet & dry regions at various elevations.
- Habitat is almost always steep. They often stay in lower elevations in the spring to forage on the earliest green vegetation, and migrate to higher elevations as the new growth develops higher up.
- In winter, they prefer steeper sites, mature cover that shed snow and a warm S to W exposure.
- Elevations: Higher elevations in the summer; will winter at lower elevations down to sea level.

# Roosevelt Elk, *Cervus elaphus roosevelti*



## Description

- Large member of the deer family.
- Dark head and neck with a yellow-brown or cream-coloured rump patch with a short tail.
- Large males may reach more than 400 kg, while females are approximately 250 kg in weight.
- Males grow antlers, ranging from simple spikes & forks on yearlings to large branched structures, with up to 5 or 6 ivory-tipped tines on mature bulls. Antlers usually have a brownish main beam & can be more than 1m long. Generally, antlers are shed from March through May.

## Biology

- Elk are 'ecotonal' species, concentrating their habitat use along edges.
- During calving, optimal for females to have cover & forage areas close together. Cows & new calves usually remain in calving areas (sometimes within 1ha or less) for 10 days - 3 weeks after birth, before rejoining the larger group.

## Habitat

- Optimal habitats: open conifer stands, stands dominated by deciduous trees (>50% deciduous), non-forested wetlands, riparian areas, vegetated slides on summer ranges, and borders of south-facing rock outcrops on winter and spring ranges.
- Choose stands that provide security & shelter. Coniferous stands <10m in height with a mean canopy closure of 60-90% intercept snow while providing light for understory growth for forage.
- Elevations: will summer from sea-level to the sub-alpine. Will winter at lower elevations.

## Occurrence: DSI, DCR

- Population estimates are approximately 6900 in BC, approximately 5500 of which are on VI. Small mainland population was transplanted to Sechelt Peninsula & Powell River. On VI there are two main populations, southern and northern. The southern is centered near Cowichan Lake and Nanaimo River watershed. The northern population is found within the loose boundaries of Woss, Gold River, Campbell River and the Tsitika River.

## Status

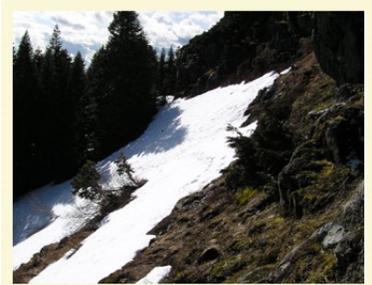
BC: Blue-listed (Species of Special Concern)

Canada: Not listed

## Action Required

- Document any high use foraging and wintering areas.
- Consult the BCTS SOG Roosevelt Elk Management Protocol for former TFL 44 areas.
- Determine if Landscape Unit you are working in requires a specific management strategy to protect or enhance forage, security cover or winter thermal cover.

# Vancouver Island Marmot, *Marmota vancouverensis*



## Description

- The VI Marmot is a colonial rodent.
- Measures 67-72 cm from nose to tip of tail.
- Chocolate brown in colour, with white patches on nose, belly and top of head.
- Adults can have mottled appearance in July (due to molt), distinguishing from pups & yearlings.
- Incisors pale yellowish-white.
- Bushy tail.

## Biology

- These marmots are relatively long-lived (10 years in the wild) and reproduce infrequently.
- Burrows for hibernation, to give birth in, hide from predators & take cover in.
- Hibernation generally takes place from early October to late April.
- Voice:** Their most frequent call is a high-pitched whistle, which warns colony members of danger.
- Droppings: 3-6 cm long, 1-1.5 cm wide, pinched at both ends, green when fresh, often in large numbers at latrines.
- Burrow entrances (30-45 cm diameter) underneath a boulder or tree root. Those used as hibernation or birth sites usually have some dirt mounded on the low side of the entrance.
- Hibernacula can be identified either by grass and mud "plugs" found at tunnel entrances in late autumn, or by emergence tunnels through the snowpack in May or early June.

## Habitat

- The Vancouver Island Marmot lives in subalpine meadows between 900-1500m above sea level.
- They require suitable soil to construct burrows and grass-forb vegetation for food.

## Occurrence: DSI, DCR (VI)

- Endemic to VI, these marmots are found on a small number of mountains on the island.
- Prior to reintroduction in 2003, they were only on five mountains within the areas of Nanaimo Lakes and Mount Washington. There are now populations on 28 mountains.

## Status

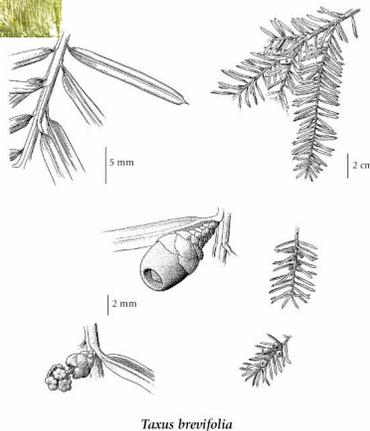
BC: Red-listed (Threatened or Endangered) and Identified Wildlife Species in B.C.

Canada: Endangered (SARA Schedule 1)

## Action Required

- Notify BCTS and document any sightings or burrows.
- Inform the Ministry of Environment of sightings.
- If the area is within a WHA, follow all general wildlife measures (GWM).
- If the area of the sighting or burrow is outside any protection; consult with a qualified professional to determine appropriate measures of protection.

# Western yew, *Taxus brevifolia*



## Description

- Small tree 2-15 m tall, often shrubby; branches spreading to drooping in flat sprays; bark thin, with outer purplish scales over reddish to reddish-purple inner bark; male and female plants separate.
- *Leaves*: Needles 2-ranked, flattened, and pointed at tip, (12) 14-18 mm long, 1-2 mm broad; yellow-green and paler on lower surface.
- *Cones*: Fruit is a round, red, fleshy aril, 5-6 mm long, borne on the underside of the branches; pollen cones yellow, globe-shaped, 3 mm long

## Habitat

- An understory tree of Pacific Northwest forests, found in light to deep shade.
- Somewhat moist forests, especially along streams and on slopes.
- In poorly drained mixed conifer forests at the northern extent of its range.
- Scattered in coniferous forests; common on water-receiving sites, frequent on water-collecting sites, and occasional on water-shedding sites.

## Occurrence: DCR DSI

- Only requires management in the portion of DCR that falls within the GBR

## Status

BC: Yellow-listed (Not at Risk), Objectives for retention of western yew set out in GBRO.

Canada: Not listed

## Action Required under GBRO

### Part 3, South Central Coast, Division 2 First Nations, Section 9. Objectives for retention of western yew

- (1) In Development Areas, retain western yew trees.
- (2) Despite subsection (1), western yew trees may be altered or harvested if:
  - (a) alteration or harvesting is required to accommodate operational requirements for road and bridge construction and there is no practicable alternative; or
  - (b) the retention of all western yew trees in a Cutblock would make harvesting economically unviable and measures are implemented to provide for use of the altered or harvested western yew trees by Applicable First Nations.
- (3) Where practicable, include western yew trees in Stand Retention.
- (4) All areas retained or managed in accordance with subsections (1), (2) and (3) must be documented and submitted as digital spatial data at the end of each calendar year to the Applicable First Nation and the Province of British Columbia.

## White-lip rein orchid, *Platanthera ephemerantha*



### Description

- Perennial herb from tubers, 1-2.5 cm long, with a few fibrous roots; stems 20-55 cm tall.
- *Leaves*: Basal 2 or 3 (4), linear to mostly oblanceolate, 10-18 cm long, 2-3.5 cm wide, dull to glossy green below, glossier above, withering before or during flowering; stem leaves bract-like, mostly 3 or 4 (2-10).
- *Flowers* Inflorescence terminal, spike-like, 7-30 cm long, usually densely-flowered, the flowers small, white.

### Habitat

- Known to occur in the South Island forest district
- Dry conifer forests and Garry oak woodlands
- Ecological description is contradictory, CDFmm and CWHvh

### Occurrence: DSI

- Documented occurrences on eastern Vancouver Island including, Rosewall Creek, Buckley Main and Englishman River.

### Status

BC: Red listed (Threatened or Endangered)

G3? (Vulnerable) – vulnerable due to rarity and found in a restricted range, very few populations (typically 20 -100 occurrences). Some uncertainty due to limited info.

Canada: Not listed

### Action Required

- When found, notify BC Timber sales, who will report occurrence info to CDC

# Painted Turtle, *Chrysemys picta pop. 1*



## Description

- Has a smooth, dark (black, brown or olive) carapace that can be up to 25cm long. There may be faint yellow lines along scutes.
- The plastron (underside of the shell) is orange-red in color with a large, dark, central mark.
- The limbs and head are dark olive with yellow lines on the head and tail, yellow spots on the legs.

## Similar Species

- Red-eared Slider, *Trachemys scripta* (introduced). These turtles are slightly larger, often have a red mark behind the eye, and have a yellow plastron.

## Biology

- In late May or June, females lay up to 23 eggs in an approximately 10cm deep nest dug from warm, well-drained, loose soil.
- Nests can be located up to 150m away from a waterbody, in fields, roadsides and on beaches.
- Young hatch in late summer/early fall and remain in the nest until early spring.
- After the first winter in the nest, they hibernate in the muddy substrate of ponds and wetlands through the winter.
- Can migrate more than several hundred meters over land, usually during fall/spring migrations.

## Habitat

- Found in shallow, predominantly  $\leq 3$ m deep, bodies of water, such as ponds, wetlands and lakes, slow moving streams, and the associated riparian zones
- Prefer waterbodies with a muck/sand substrate, woody debris (logs), cattail mats and open banks.

## Occurrence

- In BC, the Pacific Coastal population of Painted Turtles occurs west of the Cascade Mountain range.
- This subspecies has been found on the mainland coast up to Powell River, in the Fraser Valley from Hope to Vancouver, as well as on Vancouver Island in the Nanaimo lowlands and in the Gulf Islands.

## Status

- BC: Red-listed (Threatened or Endangered)
- Canada: Endangered (SARA Schedule 1)

**Action Required:** Notify BCTS and document location of breeding area. Have a qualified professional verify the species.

# Northern Abalone, *Haliotis kamtschatkana*

**Only a concern when planning activities in foreshore / near shore areas—log dumps, heli drop zones etc**

## Description

- single ear shaped shell with row of perforations along one side
- usually mottled reddish or greenish with areas of white and blue. Orange variant seen rarely
- often overgrown with various encrusting organisms
- Inside shell is pearly white with faint iridescence
- Large foot usually tan coloured

**Similar Species**—no similar single shelled shellfish in BC

## Biology

- Can be sexually mature at shell length of 50-70mm (2-5 years)
- Immature found under rocks or crevices
- Mature found on exposed rock surfaces
- Thought to live up to 15-20 years
- Feed primarily on macro-algae
- Larval abalone are poor swimmers and have low dispersal rate
- Threats include illegal harvest; predation and low recruitment

## Habitat

- Sheltered bays to exposed coastlines
- Require full salinity (no brackish water)
- Require source of macro algae such as kelp
- <10m depth
- Ample habitat available on coast of BC

## Occurrence: DSI, DCR

- Found throughout BC

## Status

BC: Red Listed (Threatened or Endangered);  
Canada: Endangered (SARA Schedule 1)

## Action Required

- Contact a Qualified Registered Professional to develop mitigation strategy for any activities taking place in foreshore or near shore areas



# Killer Whale, *Orcinus orca*

**Only a concern when planning activities in foreshore / near shore areas—log dumps, heli drop zones etc**

## Description

- The killer whale, or orca, is the largest member of the dolphin family. Its size, striking black and white colouring, and tall dorsal fin are unmistakable. Males reach lengths of 8 or 9 metres and weigh up to 5 tonnes. Females are smaller at 7 metres and 4 tonnes. Killer whales are mainly black above and white below, with an oval white patch behind each eye.

## Biology

- Travels in well-defined social groups (pods), usually of fewer than 40 (averaging less than 10); sometimes forms aggregations exceeding 100. Studies in Puget Sound indicate strong social bonds and stable group structure. Typical pod contains mature females and their young (1-3 juveniles per female) and variable proportions of males and/or post-reproductive females.
- Southern Resident population (pop 5):
  - Approximately 75 individuals
- Northern Resident population (pop 6):
  - Approximately 310 individuals
- Primarily feed on salmon (preference Chinook)
- Threats include environmental contaminants, reduced prey availability, disturbance (acoustic and boat traffic), oil spills, and incidental mortalities in fisheries

## Occurrence: DSI, DCR

- Canadian Range of Southern Resident Pod: Strait of Georgia to Esperanza Inlet
- Canadian Range of Northern Resident Pod: Dixon Entrance – Johnstone Straits (East Coast of Vancouver Island) and Barkley Sound (W Coast Van Island)

## Status

- BC: Red listed (Threatened or Endangered)
- Canada: Southern Resident – Endangered (2008); Northern Resident – Threatened (2008)

## Action Required

- Must be given consideration when developing and operating log handling facilities
- Contact a Qualified Registered Professional to develop mitigation strategy as a part of the operational plan for the log handling facility

