COWICHAN LAKE LAMPREY Lampetra macrostoma

Description

Freshwater lamprey. Almost cylindrical in form, blue-black to dark brown with lighter underparts. Funnel and tongue with many sharp teeth; eyes small and located high on head. One small caudal and one low anal fin.

Length: 680 mm

The larval lamprey stage probably lasts six years. Larvae metamorphose into young adults from July to October; spawning occurs the following year.

Distribution

Found only in Cowichan and Mesachie lakes on Vancouver Island.



Cowichan Lake lamprey

Habitat

Inhabits two oligotrophic freshwater lakes: one 34 km long with a mean depth of 51 m and a maximum depth of 150 m, the other 7 km long with a surface area of approximately 59 ha. *Spawning* has been observed from May to August at the mouth of several creeks, where the adults aggregate in shallow, gravel-bottomed areas. It may also occur in deeper waters.

BULL TROUT Salvelinus confluentus

Description

Freshwater fish, 20-40 cm in length, occasionally larger. Body long and slim with enlarged head and jaws. Olive-green to bluish-grey back, white belly; light yellow, orange, red or pink spots on its silvery sides. Upper jaw is long, extending past eye. Spawning adult males may have shades of red on belly.

Similar species: Dolly varden is almost identical; however, bull trout is more of an interior species than the dolly varden. The bull trout also has a larger, broader head and a somewhat flattened appearance when viewed from the head to the tail. The dolly varden has black spots on its dorsal fin, its upper jaw is somewhat shorter (usually not extending past the eye) and its nose is less pointed than the bull trout.

Distribution

The bull trout is an interior species. They reach the coast only in the Fraser and Squamish river systems.



Bull trout

Habitat

Bull trout are found in cool, clear mountain streams, typically with an abundance of cobbles, stones and coarse woody debris. High elevation lakes are also utilized throughout the year. They require large, deep pools in streams or lakes for over-wintering. For spawning, bull trout use smaller, slow-moving streams or rivers with a mix of habitats, ranging from deep pools to shallow pools with gravel and cobbles. Juveniles inhabit these areas too.

Elevations: 0 to >1500 m



NOOKSACK DACE *Rhinichthys* sp.

Description

Small (<10.5 cm) streamlined fish, with a sub-terminal mouth (the snout overhangs the mouth), sometimes a black stripe in front of the eyes, small scales, pale marking at the back and front of dorsal fin when viewed from above, and forked tail. Olive-grey on rounded back; silvery-white on belly; dull brassy stripe along sides. Lower sides often splashed with dusky speckles. Sexes alike, but males tend to have longer and darker pectoral fins. *Juveniles:* Very conspicuous black line

on sides, from snout to base of tail.

Similar species: Close examination is required to distinguish the nooksack dace from the longnose dace. The nooksack dace has approximately 54 scales along the lateral line and 24 around the caudal peduncle, compared to 67 and 31, respectively, for the longnose dace.

Salish sucker has a more rounded snout and papillae on its lips, and is larger than the nooksack dace.



Nooksack dace

Distribution

Very restricted distribution in the lower Fraser Valley, in four small streams in the Abbotsford, Aldergrove and Clearbrook areas, within the Nooksack River drainage system.

Habitat

Small lowland creeks (<6 m wide) flowing through farmlands and acreages, housing projects and gravel extraction mines. Adults inhabit riffles and fast glides with loose gravel, where they feed on nymphs of caddishflies and mayflies, dytiscid beetle larvae and adult riffle beetles. Juveniles prefer slow flowing water and pools with mud or sand bottoms, shaded by grasses and emergent vegetation, where they feed on chironomid pupae and ostracods. Spawning in April-May. *Elevations*: 50-75 m

SALISH SUCKER Catostomus sp.

Description

Elongated, cylindral, torpedo-shaped fish with a toothless mouth on the underside of the head, slightly back from the tip of nose, and fleshy lips covered with papillae, designed for sucking up food from the stream bottom.

Length: up to 24 cm

Similar species: The Salish sucker is most likely a derivative form of the longnose sucker, which is found across North America. Both species reside in waterbodies that are about 45 km apart. In the Salish sucker, scales are larger, the head deeper and snout shorter than in the longnose sucker. There is, however, overlap in all counts and measurements. The nooksack dace is smaller, and has a less rounded snout without papillae on lips.



Salish sucker

Distribution

Found only in a few small streams in the heavily settled lower Fraser Valley, in the vicinity of Langley and Aldergrove.

Habitat

Headwater reaches with slightly cooler water in summer and slightly higher average gradients than lower areas. Spawns at riffles with fine gravel bottoms, with either cover or instream vegetation. Adults prefer deeper waters than juveniles. *Elevations*: 16-110 m *Structural stages*: 5, 6, 7

CULTUS PYGMY SCULPIN Cottus sp.

Description

Large-headed, heavy-bodied small fish (<50 mm long) with brown to grey back and white belly.

Fins: Small pelvic, long anal, two soft dorsal and large fan-like pectoral with small prickles. Adult fins are barred. Young fish lack pigmentation on fins.

Blotches: One orange band on the first dorsal of spawning males; one to three saddle-like dark blotches beneath the second dorsal of both sexes.

Length: Up to 50 mm

Similar species: The Cultus pygmy sculpin is a limnetic form derived from the coastrange sculpin, a widespread species that occurs in the fast-flowing streams that drain into Cultus Lake. The Cultus pygmy sculpin is smaller, with large pores on the head.



The Cultus pygmy sculpin is a dwarf form of the coastrange sculpin (above) that may in fact be a separate species.

Distribution

Endemic to the deep waters of Cultus Lake, in the Fraser River watershed of southwestern B.C.

Habitat

Deeper waters of Cultus Lake, which is a low elevation montane lake.

LD. McPhail

LIMNETIC AND BENTHIC STICKLEBACKS Gasterosteus spp.

Four species pairs (limnetic and benthic) of sticklebacks are identified in B.C.; the Hadley Lake stickleback species pair is extinct. The remaining three species pairs are identified primarily by the watersheds or lakes they are found in:

- Vananda Creek limnetic and benthic sticklebacks
- Paxton Lake limnetic and benthic sticklebacks
- Enos Lake limnetic and benthic sticklebacks

Description

Sticklebacks are small fish, similar in size to a minnow. They average 45 mm in length, but some benthic sticklebacks can reach up to 90 mm in length. Typical colouring is silvery, greenish or black; males develop noticeable red throats and bellies during the mating season. They have armoured plates along their sides and spines along their back and belly that can be locked in place or retracted against the body.

Limnetic sticklebacks are adapted to feeding on plankton at the surface of the water, resulting in a slender body and a relatively narrow mouth with numerous gill rakers. They are also more heavily armoured than benthic species.

Benthic sticklebacks are adapted to feeding along lake bottoms and have wider bodies and broad mouths with



Vananda Creek sticklebacks

significantly fewer gill rakers than limnetic species.

Similar species: All of these sticklebacks look quite similar and are identified primarily by their resident waterbody. Genetic analysis is usually required to identify the proper species outside of their original habitat. There are no other similar fish found in these lakes.

Distribution

Vananda Creek sticklebacks are only found in Spectacle, Emily and Priest lakes on Texada Island. The Paxton sticklebacks are only found in Paxton Lake on Texada Island. The Enos sticklebacks are restricted to Enos Lake on Vancouver Island.

Habitat

Limnetic sticklebacks are usually located near the surface of the lakes, although they disperse to deeper waters during the winter. Benthic sticklebacks spend most of their life cycle near the bottom of lakes. Spawning occurs in shallow, somewhat vegetated areas near lake edges for both limnetic and benthic sticklebacks.

Amphibians and Reptiles

English Name	Scientific Name	Forest District	Biogeoclimatic Unit
Coastal giant salamander	Dicamptodon tenebrosus	Chilliwack	CWH: dm, ds1, ms1, vm2, xm1
Coastal tailed frog	Ascaphus truei	Campbell River (mainland) Chilliwack North Island (mainland) Squamish Sunshine Coast	CWH: dm, ds1, ds2, ms1, ms2, vh1, vh2, vm1, vm2, wm, ws1, ws2, xm1; ESSF: mw, mwp IDFww; MH: mm1, mm2, mmp1, mmp2
Red-legged frog	Rana aurora	Campbell River Chilliwack North Island South Island Squamish Sunshine Coast	CWH, CDF
Oregon spotted frog	Rana pretiosa	Campbell River Chilliwack North Island South Island Squamish Sunshine Coast	CWH, CDF
Sharp-tailed snake	Contia tenuis	South Island	IDF

CHARACTERISTICS OF AMPHIBIANS AND REPTILES



COASTAL GIANT SALAMANDER Dicamptodon tenebrosus

Description

Adults: stout body with wide, wedgeshaped head and fleshy legs. Skin is smooth, dark brown to darkish grey usually with tan, gold or grey mottling on the back and/or head. Adults can reach total lengths of up to 30-35 cm. *Larvae*: ≤20 cm long, have gills, few to no mottles dorsally, and lighter underbellies than the adult forms. *Neotenes*: uniformly coloured with external gills, reaching lengths of up to 35 cm.

Similar species: Larvae and young adults could be confused with the more common northwestern salamander, which is usually smaller with uniform brown, prominent costal groves along the sides, and noticeable light brown poison glands concentrated behind each eye.

Distribution

Restricted to the Chilliwack River Valley.

Habitat

Larvae and neotenes are found in cold montane streams with suitable structures for hiding (logs, boulders, overhangs). Terrestrial adults are found primarily in mature to oldgrowth forests adjacent to streams,



Adult coastal giant salamander



Knopr

Larval coastal giant salamander



Neotene coastal giant salamander



Northwestern salamander

but are also found in younger forests. As with larvae, adults prefer habitat with substantial cover for hiding. *Elevations:* 0-2160 m, usually <1360 m



COASTAL TAILED FROG Ascaphus truei

Description

Adults and juveniles: Brown, tan, greyish-green to black; lighter coloured frogs may have irregular dark spots on back. Light-coloured bar or triangle between the eyes and snout is common. Large head without tympanum; vertical pupil. Long legs. Outermost toes on hind feet are flattened and wide. Males have a tail-like extension used for internal fertilization. Do not have ability to vocalize.

Length: 2.2-5.1 cm

Tadpoles: Brownish-grey to reddishbrown or black. Laterally compressed tail, white spot at tip, is unique to coastal tailed frog. Wide, flat head with a sucker-like mouth facing downwards; 2-3 rows of teeth on the top and 8-12 rows on the bottom, allowing tadpoles to anchor themselves to rocks (or even human flesh!) in fast flowing water.

Similar species: No other tailed frogs found in the range of the coastal tailed frog.

Distribution

Mainland and islands on the mid and northern coast.

Habitat

Found in and around cold, clear (unsilted), fast-moving mountain



Tailed frog adult



Tailed frog tadpole

streams. Streams are permanent and remain cool throughout the year, as coastal tailed frogs are especially prone to desiccation. Streams are generally <15 m in width and forested on both sides. Frogs winter under substrates at or near the stream surface, where there is no winter ice. Adults rarely travel far from streambanks, but have been found under logs or other suitable cover in directly adjacent mature to old-growth forests, especially after substantial rainfall or on cloudy, humid days.

Elevations: 0-2140 m Structural stages: 6, 7



RED-LEGGED FROG Rana aurora

Description

Adults: Smooth skin, partially webbed feet and long hind legs. Skin on the back is brown, grey or red. Two light brown folds of skin run along back, starting from behind each eye. Underside is a translucent red, especially along the hind legs, that deepens in intensity as the frog ages. Sides have a mottled colouration pattern; larger in the groin areas, smaller toward front legs. Darkcoloured mask borders gold-coloured eyes; oriented to the sides.

Length: male 7 cm; female ≤10 cm

Tadpoles: Tan to brown with gold specks throughout their body. Bodies look short because of long tail at least as long as length of body. Tail has a dorsal fin with light spots on it. Mouth with four teeth rows on the bottom and three on the top. Reach 2-7 cm before they metamorphose.

Similar species: Most easily confused with the Oregon spotted frog; ranges only overlap in very restricted areas within the lower mainland. Eyes face up instead of to the sides; back feet have more complete webbing. Have mottled brown skin tones on the underside of the hind legs.



Red-legged frog

Distribution

Southwestern part of the province, including Vancouver Island and Gulf Islands. Occur on the B.C. mainland west of the Coast Mountains in the Fraser Valley and adjacent to the Strait of Georgia. Recently confirmed as having been introduced to the Queen Charlotte Islands.

Habitat

Often found in and around shallow ponds, lake margins, slow-flowing streams, marshes, bogs or fens, with abundant surrounding vegetation. Tend to avoid open water, inadequate shade or shelter. Adults also found at great distances from water sources, especially moist forests with good cover that keeps them damp and cool. May be attracted to open canopy ponds (e.g., where riparian vegetation has been removed), potentially resulting in creation of sink habitats.

Elevations: 0-920 m *Structural stages:* all



OREGON SPOTTED FROG Rana pretiosa

Description

Adults: Reddish-brown, tan or olive skin with irregular-shaped black spots that have indistinct borders and light centres, relatively short legs, extensive webbing between the toes of the hind feet, a pointed snout, and eyes that are turned slightly upward. There is an extensive light-coloured stripe down the upper lip. Light brown to orange folds extending from behind the eyes to the middle of back. Their belly is light cream-coloured, and may have a mottled or fragmented salmon or red-orange wash.

Length: Up to 6-8 cm

Juveniles: Olive-green or light brown, without the belly mottling.

Tadpoles: Long tail, about twice the length of the body, with a tall, colourless tail fin containing scattered flecks. The belly is white or slate in colour.

Similar species: The Columbia spotted frog differs genetically from the Oregon spotted frog but cannot be reliably distinguished by physical characteristics. However, the Columbia spotted frog occurs in the interior of B.C. and its range does not overlap with that of the Oregon spotted frog. The red-legged frog does not have upturned eyes; it has relatively long legs, and a mottled colouration pattern along the sides that is larger in the groin area and smaller toward the front legs. When



Oregon spotted frog



Oregon spotted frog ventral

viewed from a distance, Oregon spotted frogs have a distinct posture on land – they crouch to the ground, rather than sitting up straight like the red-legged frogs.

Voice

From 4 to 50 faint, rapid, low-pitched clicks, for 1-10 seconds at a time.

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Distribution

Isolated populations in the lower Fraser Valley.

Habitat

This species is more aquatic than other frogs. Large warm-water marshes with emergent vegetation, sometimes with forested landscapes, where they lay their egg masses communally, sometimes on top of each other. Shallow ephemeral pools and small floodplain wetlands associated with permanent water bodies are important habitat features. Oregon spotted frogs rarely leave the water. The eggs and tadpoles are vulnerable to freezing and desiccation. Adults overwinter underwater.

Structural stages: all



SHARP-TAILED SNAKE Contia tenuis

Description

Small snake with smooth scales. Thickness of a pencil. It derives its common name from a thorn-like scute at the tip of the tail. Scales come in 15 rows around the body.

Adults: Reddish-brown, yellowishbrown or grey above, tending toward reddish on the tail. A conspicuous dark bar on the anterior end of each ventral scute gives a banded appearance to underside. Indistinct yellowish or reddish line on each upper side.

Young: Red above, fine dark lines on side.

Length: 20.5-45.5 cm

Similar species: Not likely to be confused with any other snake.

Distribution

Gulf Islands and southeastern Vancouver Island.

Habitat

Occurs within the Coastal Douglas-fir zone where it prefers Douglas-firarbutus stands and forest edges, and adjacent pastures or open meadows. Concentrations of snakes have been found along south-facing rocky slopes,



Sharp-tailed snake



Snake belly in wood



Snake tail tip

which may provide both hibernation and egg-laying sites. Hides under logs and other objects. Easier to find following rains. Feeds on slugs. *Structural stages:* all



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Ovaska

Birds

English Name	Scientific Name	Forest District	Biogeoclimatic Unit
Ancient murrelet	Synthliboramphus antiquus	Queen Charlottes	CWH: wh1,vh2
Marbled murrelet	Brachyramphus marmoratus	Campbell River North Coast Queen Charlottes South Island Squamish Sunshine Coast	CDF, CWH, MH
Cassin's auklet	Ptychoramphus aleuticus aleuticus	Campbell River North Coast North Island Queen Charlottes	CWH: wh1, vh2,vm1, vh1
Sandhill crane	Grus canadensis	Campbell River Chilliwack North Coast North Island Queen Charlottes South Island	CWH, ICH CDFmm IDF: dk, mw
Great blue heron	Ardea herodias	Campbell River Chilliwack North Coast North Island Queen Charlottes South Island Squamish Sunshine Coast	CDFmm CWH: dm, ms1, ms2, vh1, vh2, vm1, vm2, xm ICH: dw, mk1, mk2, mk3, mw2, mw3, xw IDF: dk3, dm2, mw1, mw2, unn, xh1, xh2
"Queen Charlotte" goshawk	Accipiter gentilis laingi	Campbell River North Coast North Island Queen Charlottes South Island Sunshine Coast	All except AT
Peregrine falcon	Falco peregrinus	Chilliwack South Island	CWH, IDF, SBS

Birds

English Name	Scientific Name	Forest District	Biogeoclimatic Unit
"Vancouver Island" white- tailed ptarmigan	Lagopus leucurus saxatilis	Campbell River North Island South Island	MH
"Vancouver Island" northern pygmy-owl	Glaucidium gnoma swarthi	Campbell River North Island South Island	CDFmm CWH: vh, xm, dm, mm, vm MH: wh, mmp, mm
Queen Charlotte northern saw-whet owl	Aegolius acadicus brooksi	Queen Charlottes	CWH: wh1, wh2, vh1
Short-eared owl	Asio flammeus	Campbell River Chilliwack North Island South Island	CDFmm CWH: xm1, xm2, dm, vm1 IDF: xh1, xw, xm, dm, dk1, mw1, mw2, dk1a, dk3, dk4, xh2, xh2a, xh1a, xm, un ICH: xw, mw2 SBS: mh, mk1. AT
Spotted owl	Strix occidentalis	Chilliwack Squamish	CWH: vm1, vm2, dm, ds1, ms1, ms2, mm1 ESSFmw IDF: ww, dk2 MHmm1
"Queen Charlotte" hairy woodpecker	Picoides villosus picoideus	Queen Charlottes	CWH: wh, vh MH: wh
Lewis's woodpecker	Melanerpes lewis	Historically on Vancouver Island	ICH:dw,mk1,mw2, mw3,xw IDF: dk1, dk2,dk3,dk4,dm, dm1, dm2, dw, mw1,mw2, un,xh1a, xh2a, xm, xw,xw2
Yellow-breasted chat	Icteria virens	Chilliwack	CWHds

CHARACTERISTICS OF BIRDS



ANCIENT MURRELET Synthliboramphus antiquus

Description

A chubby seabird.

Adults: Summer plumage of a black head and white eyebrow streak, grey back, white abdomen and barredwhite neck sides. Winter plumage of a white face and neck patch and grey back. White bill.

Juveniles: Whiter throat patch. *Sexes:* Similar.

Eggs: Olive-green with darker brown lavender spots.

Length: 24-26 cm *Wingspan:* 14 cm *Weight:* 200-250 g

Voice

Whistling notes in low shrill tones.

Field signs

Nests: Establishes nest colonies that are reused yearly. Mated pairs excavate burrows or utilize past years' burrows, in mossy covered ground on seaward slopes, under mature coniferous forests with little understory. Burrows are at the base of stumps and thickly rooted trees, under rotten logs or exposed bedrock and in natural cavities. Burrows can reach up to, but not always, 2 m in length.



Ancient murrelet

Distribution

Ancient murrelets have been observed in breeding plumage adjacent to coastal areas and offshore islands in the Queen Charlotte Islands/Haida Gwaii between March and July and there has been one confirmed record from Gander Island. Wintering aggregations occur in the marine waters around Vancouver Island including Queen Charlotte Strait, Strait of Juan de Fuca, Haro Strait and Active Pass.



Ancient murrelets forage on the open ocean.

Habitat

Utilizes old forest to breed and remains at sea the remainder of the year, foraging on the open ocean. Canopy species composition includes Sitka spruce, western hemlock and western redcedar.

Nests: Usually located on slopes >30% but sometimes flat areas are used on sea islands. Canopy closure is usually >50%.

Ancient murrelets forage in the open ocean for zooplankton and small schooling fish.

Elevations: sea level to 450 m

Structural stages: 7



MARBLED MURRELET Brachyramphus marmoratus

Description

Adults: Chubby, robin-sized seabirds with very short neck and tail. When swimming, tail and black bill are tipped upwards. Summer plumage (breeding season): brown back with marbled light brown sides and stomach. Winter plumage: black back, white sides and stomach with white wing patch and an incomplete white collar.

Juveniles: Winter colouration. *Sexes:* Similar. *Length:* 25 cm

Voice

Distinct high-pitched *keer*, *keer*, *keer* mainly heard at dusk and dawn.

Field signs

Nests: Consist of a shallow mossy depression with a thick substrate of mosses and lichens, on a large, horizontal tree limb, usually near the trunk of the tree. Also known to nest on cliffs, although this is very rare. Frequently seen in pairs. One parent remains at the nest while the other forages, trading incubation duties at dusk and dawn.

Distribution

Murrelets are likely to be found anywhere along the coast of B.C. Precise nesting areas have not been accurately mapped but likely include most suitable old-growth forests within 30 km of the Pacific coast.



Marbled murrelet adult winter plumage. Juveniles appear similar to adults in winter plumage.

Habitat

Forage habitat: Includes saltwater bays, inlets, fjords and the open ocean. Food items include small schooling fish (predominantly Pacific sand lance and immature Pacific herring) and large pelagic crustaceans (euphausiids, mysids, amphipods).

Nesting habitat: Generally old (>140 years, but >250 years more suitable) coastal coniferous forests. Moist stands with a well developed epiphytic moss component, often adjacent to talus slopes and natural openings, where trees bordering are gnarly, large limbed and concealing the inner forest. Nest stands are with a closed canopy, open understory and are generally located within 2 km of potential foraging waters. Nest locations have overhead branch coverage.

Canopy species composition includes yellow cedar, western hemlock, Sitka spruce, Douglas-fir and western redcedar.

Nest tree: dbh >55 cm; height >40 m; branch diameter 15-74 cm

Birds need 'runway' space for landing and departure from nest. *Elevations:* 0-1500 m *Slopes:* 55-115% *Structural stages:* 7



Marbled murrelet adult breeding plumage



CASSIN'S AUKLET Ptychoramphus aleuticus aleuticus

Description

Adults: Stocky, rounded, small colonial seabirds with a slate-grey back fading to lighter grey sides and white underparts. A tiny white dash is above each eye. Black bill with a white spot at the base and blue feet. Plumage same throughout the year.

Juveniles: Pale grey with a white throat.

Sexes: Similar.

Length: 23 cm *Wingspan:* 11.0-12.9 cm

Voice

Whistles and croaks given at night with colony members.

Field signs

Nests: In colonies and mated pairs, Cassin's auklets excavate a 1-5 m long convoluted burrow (500 m from the ocean, and 30-100 m from vegetation edge), in soft soil or sometimes using natural cavities in rocks. Burrows are excavated under stumps, fallen logs, large tree roots, grass tussocks, forbs, salmonberry bushes and ferns. Birds defecate at burrow entrance. Eggs are smooth, non-glossy, white and frequently nest-stained.



Cassin's auklet

Distribution

The Cassin's auklet breeds at 61 known colonies on offshore islands along the western and northern coasts of Vancouver Island, the northern mainland coast and the Queen Charlotte Islands/Haida Gwaii.

Habitat

Colonial *burrow-nests* within forested and non-forested areas with grasses, forbs and shrubs; in steep seaward cliffs and slopes.

Canopy species composition includes Sitka spruce, western hemlock and western redcedar.



A. Inselberg

Establishes nest colonies, reused yearly, on marine islands and mainland slopes with no access by mammalian predators and little chance of human disturbance.

Structural stages: 2, 7



SANDHILL CRANE *Grus canadensis*

Description

Adults: Tall, grey migratory birds with a red forehead and long neck that is curved when at rest. Head held straight out in front of body when in flight. Black bill. Plumage usually grey but sometimes showing rust stains from iron-rich waters where it has foraged.

Juveniles: Brownish and lacking the red forehead. Feather tuft over the tail is characteristic of cranes.

Sexes: Similar.

Height: 100-120 cm

Wingspan: 45 cm long, with black tip. The sandhill crane flies with both a fully extended neck and quick wing upstrokes.

Eggs: Usually 1-3, are olive-buff with lavender spots and are approximately 9.5 cm x 6.1 cm.

Similar species: Great blue heron has a black eyebrow stripe, unlike the sandhill crane, which has a red patch above the eye. The heron flies with its neck in a loop and the head drawn back to the shoulders.

Voice

Low, loud rolling garooo-a-a-a.

Field signs

Nests: Located within wetland habitats; concealed within emergent vegetation. They consist of a mound (0.9-1.5 m diameter) raised 15-20 cm above the water, and are constructed with sticks, emergent sedges, reeds,



D. Knopj

Sandhill crane

grasses, mosses and hummock. Sandhill cranes show strong site fidelity, returning yearly to the same wetland habitats to breed.

Distribution

Widespread distribution with known breeding grounds in the Queen Charlotte Islands/Haida Gwaii and along the mainland coast.

Habitat

Large isolated and undisturbed wetland habitats (>1 ha) surrounded by some form of forest cover. Emergent wetland vegetation composition includes cattail, bulrushes, willows, hardhack, Labrador tea, sedges and grasses. Forage habitat includes all forms of wetland habitats, similar to those used as nesting habitat but also intertidal areas, agricultural fields and grasslands. Forage species include invertebrates and plants such as grasses. The sandhill crane is also known to feed on agricultural crops, carrion and small animals such as rodents and amphibians.

Nesting habitat: secluded freshwater wetlands with abundant emergent vegetation to conceal the mound nests. Seasonal and permanent swamps, marshes, bogs, meadows, ponds, tundra and prairies are all utilized as breeding habitats. Mound gives them an unobstructed view of surrounding areas. Avoids forested uplands. Occasionally nests in clearcuts, although this is not



Sandhill cranes in flight

considered a suitable habitat alternative. *Escape cover*: forested areas adjacent to wetland nesting habitats are used as escape cover and are critical for birds nesting in small wetlands (1-10 ha). Will also use this habitat for roosting.

Elevations: breeding <1220 m, non-breeding <1510 m *Structural stages:* 1-3 (nesting), 5-7 (escape)



Nest of a sandhill crane



GREAT BLUE HERON Ardea herodias

The great blue heron is two separate subspecies in B.C.: *Ardea herodias fannini* (coastal) and *A. h. herodias* (interior). Both subspecies are similar in appearance although their nesting schedules differ slightly.

Description

Adults: Tall, long-legged waders with long neck in an "S" curve at rest and in flight. Long, thick yellow bill, white crown and face. Black plume extending from above eye to beyond back of head. Black shoulder, shaggy bluegrey body and wings.

Juveniles: Brown-grey back and upperwing plumage and lacking black eyebrow.

Sexes: Similar.

Height: 60 cm

Wingspan: 97-137 cm

Weight: 2.1-2.5 kg

Eggs: 3-5 smooth, non-glossy and pale greenish-blue.

Similar species: The great blue heron resembles the sandhill crane. Unlike the heron, the crane has a red patch above the eye; also, it flies with a fully extended neck.

Voice

Hoarse, deep, guttural squawk sounding like 'FRANK!'. Clucking, snapping beaks or mooing like a calf.



Great blue heron

Field signs

Nests: Great blue herons are known to nest in colonies of up to 169 nests. Colonies are reused in successive years. Small nesting colonies are more common, and >50% of colonies are >11 nests. Nests are located at 4-70 m heights in trees and consist of large stick platforms, <1 m diameter. Nests are lined with twigs, bark strips, coniferous boughs and rushes. Both the nest and the ground beneath are messy with droppings, discarded food and occasionally dead chicks.

Distribution

A. h. fannini is found throughout the mainland coast from southwestern B.C. to Alaska, and adjacent Vancouver Island and Queen Charlotte Islands/Haida Gwaii. A. h. herodias is the subspecies found throughout the interior southern portion of B.C.

Habitat

Nesting habitat: Nests within 8 km (usually within 3 km on the coast) of wetlands and riparian foraging habitats, in undisturbed, mature coniferous, deciduous or mixed forests. The canopy closure of the colony nesting habitat is usually >80% but the birds have been known to use less. Nesting habitat canopy species composition includes red alder, black cottonwood, big leaf maple, lodgepole pine, Sitka spruce and Douglas-fir.

Foraging habitat (especially during breeding season): riparian areas, tidal



A great blue heron nest colony

mud flats with large eelgrass meadows, estuaries, slow-moving rivers, sloughs and marshy lakes. Also wet and dry agricultural fields, kelp forests, wharves, shallow beaches and irrigation ditches.

Food items: primarily fish, but also invertebrates and small terrestrial vertebrates.

Elevations: 0-1100 m but mainly near sea level.

Structural stages: 5, 6, 7



"QUEEN CHARLOTTE" GOSHAWK Accipiter gentilis laingi

Description

Adults: Robust diurnal forest raptors with a long narrow tail and relatively short rounded wings. Black crown with a white eyebrow streak; red eyes; blue-grey body, pale grey belly. *Juveniles:* Brown body with a dirty

white streaked belly and yellow eyes. Sexes: Similar.

Height: 51-66 cm *Wingspan:* 1.1 m

Similar species: The Cooper's hawk does not have a white stripe above the eye. The back is brown and the breast is rusty reddish-brown. The wings are short and rounded and the tail feathers have distinct bars. The juveniles are hard to distinguish from those of the goshawk, other than by their size – Cooper's hawks are smaller.

Voice

Loud *kak-kak-kak-kak-kak* when nest disturbed or approached.

Field signs

Nests: Large stick nest with a 1 m diameter and thickness of 0.4 m, lined with fresh sprigs of evergreen boughs. It is located in the main fork of a deciduous tree, or the lowest branches below the canopy and near the main stem in a coniferous tree. Goshawks build multiple (3-9) nests and alternate amongst these nests in successive years.



'Queen Charlotte" goshawk



The white eyebrow streak is a characteristic feature of the goshawk.



E.T. Jone:

Cooper's hawk

Distribution

Occurs on Vancouver Island, and smaller coastal islands between Vancouver Island and mainland B.C. Most likely, "Queen Charlotte" goshawks also inhabit forests on the west side of the Coast Mountains throughout coastal mainland B.C.

Habitat

Hunting and nesting: Late-seral mixed conifer forests with open forest understory, high canopy cover, open forest floor, larger trees and natural edge habitats. This habitat is prime for goshawk prey items (mediumsized forest birds and small mammals), which factors highly into goshawk distribution. Dense young second growth is avoided.

Habitat features: Coarse woody debris, windthrow and downed snags, stumps, large and low thick-limbed trees.

Canopy species composition includes almost every combination.

Dbh: >40.6 cm Canopy closure: ≥ 50% Slope: <30%, always <60% Structural stages: 6, 7



PEREGRINE FALCON Falco peregrinus

The peregrine falcon is divided into two separate subspecies: *Falco peregrinus pealei* and *F. p. anatum*. Both subspecies are at risk.

Description

Adults: Large robust slate-grey birds with a lighter-coloured chest that has fine black bars and spots. Black head with wide black "sideburns." Fast flier with narrow tail and tapered wings.

Juveniles: Brown with extensive barring on the chest. Comparable to the size of a large crow.

Height: 38-53 cm Wingspan: 1 m

Similar species: The prairie falcon is described as a sandy-coloured peregrine falcon, although this species has a white eyebrow stripe, and the peregrine does not.

Voice

Generally a silent bird, a repeated *wechew* can be heard when calling between each other. A rasping *kack-kack-kack-kack* can usually be heard when defending the nest.

Field signs

Nests: Peregrine falcons place their nests on high and inaccessible vertical cliff ledges. Nest heights vary between 12-24 m from the base of a cliff and 3-9 m from the top.



E.T. Jone:



E.T. Jones

Prairie falcon

Peregrine falcon

However, nest heights have been found on cliffs up to 366 m high. An overhang shelters the actual nest which is a slight depression or scrape on a ledge 0.3-4.6 m deep and 0.3-2.4 m wide. Sometimes peregrines will occupy an abandoned bird's nest (bald eagle or pelagic cormorant).