

BC's Coast Region: Species & Ecosystems of Conservation Concern

White-tailed Ptarmigan *saxatilis* subspecies (*Lagopus leucura saxatilis*)

Global: G5T3 Provincial: S3 COSEWIC: N/A BC List: Blue, Identified Wildlife



Notes on *Lagopus leucura saxatilis*: This plump gamebird is a member of the family Tetraonidae (“grouse”), a group which ranges widely across Europe and North America. White-tailed Ptarmigan are currently represented by 5 different subspecies globally. Considered endemic to Vancouver Island, the *saxatilis* subspecies was first described in 1938. It differs from its mainland counterpart through subtle morphological differences in the bill and plumage.

Description

Height: 30-33 cm. The smallest ptarmigan in North America, adults of the *saxatilis* subspecies of White-tailed Ptarmigan are chubby and round. Eyes and beak are black. As with other ptarmigan, White-tailed Ptarmigan have a cryptic molt pattern that changes according to season and breeding cycles. In winter the bird is completely white except for the eyes and beak. As spring approaches and snow levels diminish with lengthening daylight and increasing temperatures, birds morph from all white to intermediary mix of white and mottled grey-brown. A complete transition to breeding plumage of mottled grey-brown with only the retrices (outer margins of tail feathers) remaining white occurs in the summer. The feathered feet (another trait of ptarmigan) remain covered in white feathers all year. A very small red eyebrow patch is visible in summer. Eggs are a buff colour with small, dark-brown spotting. Both eggs and seasonal molt patterns are effective year round camouflage for this bird which nests and forages in open, exposed and often rocky high elevation habitats.

Diet

Depending on time of year and availability, White-tailed Ptarmigan feed on buds, stems, seeds, leaves, fruits, flowers, and insects. Forage plants for the *saxatilis* subspecies of White-tailed Ptarmigan include a range of fruiting high elevation plant species such as blueberry, grasses, sedges, sedum, crowberry and bearberry.

Look's Like?

Several species of ptarmigan occur on Vancouver Island. The white retrices remain one of the key characteristics for identifying the *saxatilis* subspecies, especially during seasonal molt changes. Rock Ptarmigan is similar in size and shape to White-tailed Ptarmigan, but the tail margins are distinctly black and males have a black line from the bill to the eye. Willow Ptarmigan are slightly larger than White-tailed Ptarmigan, have a reddish head and distinctly black retrices. The distinct red “eyebrow” is more visible in other ptarmigan species than in *Lagopus leucura* and its subspecies.



Rock Ptarmigan

Distribution

Elevations: Summer 1200-2200 m, winter 800-1900 m. This subspecies migrates seasonally between montane, subalpine and alpine zones of the central mountain ranges of Vancouver Island. Historical distribution ranged from as far south as Mount Brenton to as far north as Tsitika Mountain. Recent inventory of sightings suggests the subspecies still occupies most of its historic range.



White-tailed Ptarmigan *saxatilis* subspecies (*on Lagopus leucura saxatilis*), known occurrence range for the Coast Region

Habitat Preferences Habitat elevation ranges differ between breeding (summer) and winter seasons, and between the south, central, and north parts of Vancouver Island. In summer birds can be found at, or above the timberline in alpine, subalpine and upper montane areas with moist and rocky alpine meadows. Small “krummholz” tree “islands” (stunted twisted appearance from harsh growing conditions), of sub-alpine fir and mountain hemlock are typical. In winter birds move downslope to snowfields, which provide camouflage and forage vegetation. Short elevational migrations to habitat below the tree-line and into, or at the edge of forested areas are made periodically. Features include yellow cedar and mountain hemlock forests, alpine bowls, clearcuts, cliffs, rocky outcrops and non-vegetated areas.



The *saxatilis* subspecies uses a wider range of habitats than its mainland form.

Critical Features Nests are exclusively on the ground in hollows of high elevation rocky exposed areas or under trees and shrubs. The distance that adult birds migrate between winter locations and breeding areas is on average 1.4 km in the southern portion of the island and 2.0 km in the northern portion of the island. Young of the year have been known to disperse up to 34 km to other mountains.

Seasonal Life Cycle

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		Breeding / Nesting									
			Eggs/Chick's in nest								
Fledging and dispersal (non-migratory)					Fledging and dispersal (non-migratory)						

Threats

- ◆ This subspecies has narrow habitat preferences associated with specific forage plants that are limited and occur in highly fragmented habitats on Vancouver Island (i.e. montane, subalpine and alpine zones). Fragmentation creates migration barriers for seasonal range use and juvenile dispersal. Climate change may further reduce or impact extent and diversity of preferred habitats.
- ◆ Existing populations are small with limited recruitment and low densities. Breeding success is limited by seasonal availability of food resources and subject to fluctuating conditions.
- ◆ Distribution coincides with areas undergoing pressures from forestry as well as expanded recreational land use (ski hill development, hiking, mountain-biking and snowmobiling).
- ◆ Disturbance impacts from human activities such as recreational land uses, forestry and road development are associated with increased access or spread of predators and non-native flora and fauna.
- ◆ Regional air and water pollution is an increasing concern for high elevation species. Concentrations of persistent organic pollutants (POPs) such as polychlorinated biphenyls (PCBs) in alpine snowpacks increase in higher elevation areas in Western Canada. In similar habitats in Washington State a positive correlation between elevation and increased ozone concentrations has been observed in. High concentrations of ozone are known to impact vegetation communities.

Conservation & Management Objectives

- ◆ Apply conservation and management objectives as set out in the “Accounts and Measures for Managing Identified Wildlife - Accounts V. 2004 Vancouver Island White-tailed Ptarmigan *Lagopus leucura saxatilis*.”
- ◆ Assess, inventory and monitor using methodology set out in the Provincial RISC standards # 17 “Upland Gamebirds Grouse, Quail and Columbids, Version 1.1.

Specific activities should include:

- ◆ Consider fire management regimes and their relationship and relevance to maintenance of historic and future ptarmigan habitat and forage plant communities.
- ◆ Maintain connectivity and protect areas around current occurrences where habitat still exists or can be restored e.g. through WHA’s (Wildlife Habitat Areas under FRPA). This subspecies has a wide dispersal capability but requires appropriate sites with sufficient attributes and forage resources to establish new populations with a high likelihood for persistence.
- ◆ Further study is required to determine causes and trends in population distribution, structure and reproductive capacity including genetics, behavior and potential changes from climate change.
- ◆ Previous efforts to collar, band and track birds and utilize local hiker observations to compile distribution information should be expanded and continue to be supported to raise awareness about this endemic subspecies.

The *saxatilis* subspecies of White-tailed Ptarmigan is closed to hunting and is subject to protections and prohibitions under the BC Wildlife Act and is Identified Wildlife under the Forest and Range Practices Act. Habitat for this species may also be governed under provincial and federal regulations including the Fish Protection Act and Federal Fisheries Act as well as Regional and local municipal bylaws.

Content for this Factsheet has been derived from the following sources

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