

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

Spotted Owl (*Strix occidentalis*)

Global: G3 Provincial: S1 COSEWIC: E BC List: Red Identified Wildlife



Notes on *Strix occidentalis*: This member of the family Strigidae (“typical owls”) is perhaps one of the best known species in relation to old growth forest protection issues in the Pacific Northwest. Previously three subspecies of *S. occidentalis* were identified in North America: Northern, Californian and Mexican Spotted Owl. However in BC the subspecies designation has been dropped and Californian and Northern have been lumped together as one species. Conversely, recent genetic analyses (2008) indicate that even though the three former groups show wider overlap and hybridization than previously identified they are genetically distinct and the subspecies designation is valid. The species as a whole continues to face significant declines across its range in North America.

Description

Length: 43 cm, Wingspan 1.14 m. Spotted Owl is a medium-sized, round-headed owl lacking ear tufts. As with other members of the genus *Strix*, eyes are dark brown. Plumage is generally brown on the back with buff coloured feathers around the eyes, chest and belly. The name comes from the white spots which tip most of the plumage. Spotting is heavy on the flight feathers, crown and back of the head. Chest feathers are tipped with horizontal white markings. Sexes are marked alike; although females are slightly larger than males (a common characteristic of raptors). Markings on juveniles are less prominent and become more defined as the bird matures.

Diet

In BC Spotted Owl feeds primarily on small mammals associated with old-growth and mature coastal forests, especially Northern Flying Squirrel, Bushy-tailed Woodrat, Red-backed vole and a variety of mice. Exploitation of specific prey species varies year to year based on availability and abundance, although Northern Flying Squirrel typically makes up the majority of the diet.

Look's Like?

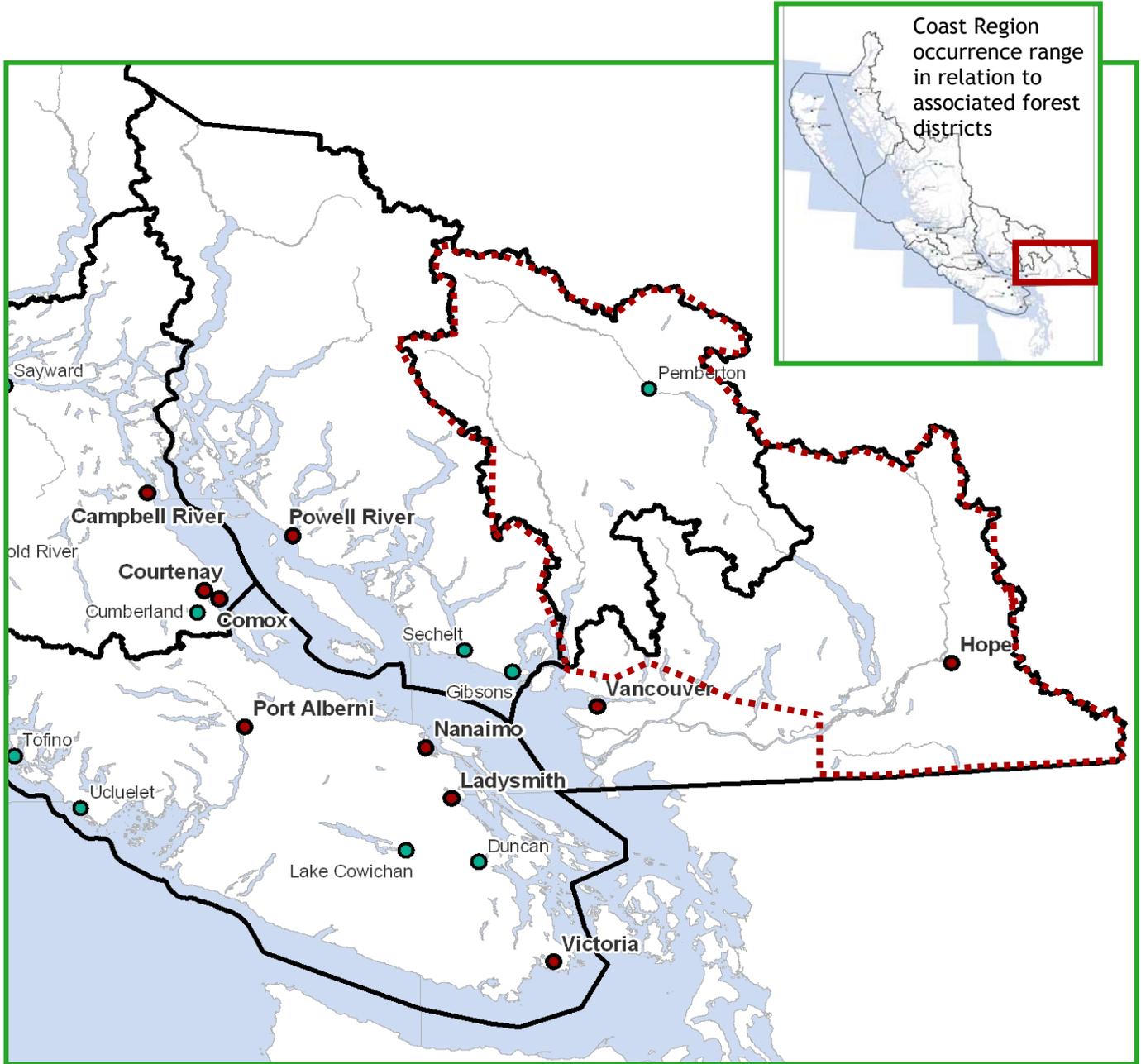
This species is most likely to be confused with the related Barred Owl, which is becoming increasingly widespread in BC. As well these two species may hybridize. Barred Owl lacks the characteristic white tipped breast and belly plumage. Instead chest and belly feathers are a dirty cream colour with vertical dark ‘barring’.



Barred Owl

Distribution

Spotted Owl are distributed from southwestern British Columbia to southern California, and along the southern Rocky Mountains from central Colorado to central Mexico. At the northern end of its range in BC, Spotted Owl is restricted to a narrow fragmented distribution on the South Coast mainland. Perhaps no more than 19 individual birds remain in BC over 14 sites from Anderson Lake northeast of Pemberton, southwest to the Squamish watershed and north side of Burrard Inlet and southeast following remaining contiguous mature forests to Manning Park. In BC this species may already be extirpated as a functional breeding population.



Spotted Owl (*Strix occidentalis*), potential occurrence range for the Coast Region

Habitat Preferences

Spotted Owl is an old growth-mature forest specialist preferring stands with >50% canopy closure. This species generally uses stands dominated by conifers (e.g. Douglas-fir). Mature hardwood stands (e.g. red alder) may be used in the summer for foraging and roosting. Stand preferences reflect the availability of their most important prey species, Northern Flying Squirrel, which feeds on fungi and fungal rhizome bodies growing in association with Douglas-fir. Mature second growth features are utilized where sufficient prey base and structural diversity are present.



Critical Features

◆ Nests generally occur in large (>30 cm dbh, but preferably >50 cm dbh), trees in old growth stands containing larger tree cavities or abandoned hawk or crow nests. Trees with broken tops, tree cavities resulting from heart rot, and platform nests built by other species are important features. Spotted Owl are easily subjected to heat stress and respond to variations in temperature by moving within the canopy to more favourable microclimates. In summer, when temperatures are warmer, roosts tend to be in cool, shady areas. Spotted Owl are non-migratory and home ranges, particularly in the northern parts of their distribution, are very large. Preliminary home range size estimates from telemetry studies in British Columbia appear to be consistent with estimates from Washington i.e. 2100 to 4000 ha. Natal rearing areas were assessed at 400 ha.

Territory establishment by Spotted Owl appears to be limited by the amount, quality, and distribution of habitat found within the landscape. Higher fecundity and adult survivorship is associated with larger amounts of suitable habitat in areas surrounding the nest area.

Seasonal Life Cycle

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		Breeding / Nesting. Clutch size 1-3 eggs		Chick's in nest							
Young of the year, Juveniles & adults active all year.											

Breeding begins at two or three years of age. This species usually mates for life and uses the same nest site in subsequent years, though they do not breed every year.

Threats

- ◆ Fragmentation of forest habitats, loss of preferred nesting features and prey availability (tied to forest structure) as well as potential impacts to population viability due to loss of genetic variation from dwindling breeding population are considered the most significant threats.
- ◆ Spotted Owl populations have naturally low fecundity and low juvenile survivorship (normally offset by high survivorship of adults). Without increased habitat protection and direct population augmentation, extirpation is now seemingly inevitable and appears likely to occur by 2012 if present trends continue.
- ◆ Disturbance (especially due to industrial activity like road building and logging) may exacerbate low juvenile survival and breeding success.
- ◆ Predation on chicks by other raptors (e.g. Great Horned and Barred Owl) and inter species competition for habitat and hybridization with Barred Owl.
- ◆ Bio-accumulative impacts (i.e. eggshell thinning) from pesticides used in forest management may impact breeding success.

Conservation & Management Objectives

- ◆ Apply conservation and management objectives as set out in the “Recovery Strategy for the Northern Spotted Owl (*Strix occidentalis caurina*) in British” and the “Assessment and Update Status Report on the Spotted Owl *Strix occidentalis caurina*”. Integrate complimentary measures found in “Accounts and Measures for Managing Identified Wildlife - Accounts V. 2004. Northern Spotted Owl *Strix occidentalis*”.

- ◆ Assess, inventory and monitor using methodology set out in the RISC standards # 11 Inventory Methods for Raptors (Version 2.0). Investigate more recent assessment methodologies for habitat evaluation such as those found in “Validation of Modeled Habitat Classifications for the Northern Spotted Owl in British Columbia Using Patterns of Historical Occupancy” and “A Framework to Support Landscape Analyses of Habitat Supply and Effects on Populations of Forest-dwelling Species: A Case Study Based on the Northern Spotted Owl”.

Specific activities should include:

- ◆ Identify and conserve critical habitat features - support habitat features that provide for widely dispersed breeding territories and nesting preferences for remote forested regions with extensively forested canopies. Determine the minimum amount and distribution of critical habitat needed to maintain a stable, self-sustaining population distributed throughout the species’ natural range.
- ◆ Maintain the hierarchical structure of core zones and home range zones e.g. nest sites, nest areas, post-fledging area and foraging areas. Core zones should have limited access and no disturbance.
- ◆ Avoid activities that result in a reduction in stem density, canopy volume and habitat quality in forested stands (e.g. under storey brushing, patch cutting and clear-cutting).
- ◆ Undertake control measures to reduce inter-species competition and predation (e.g. Barred and possibly Great-horned Owl).

This species is listed under the federal Species at Risk act (SARA) 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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