

# “QUEEN CHARLOTTE” HAIRY WOODPECKER

*Picoides villosus picoides*

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## Species Information

### Taxonomy

Twelve subspecies of Hairy Woodpecker are recognized, six of which occur in British Columbia (AOU 1957; Cannings 1998). Only *Picoides villosus picoides* is endemic to the Queen Charlotte Islands.

### Description

This robin-sized woodpecker is patterned with black and buffy white. The forehead and crown are black; the nasal tufts and supercilium above the eye, back to the nape are white; a stripe in front of the eye and in a broad band over the ear coverts is black; the lores and a band below the ear covert, back to the sides of the neck, is white; and the “moustache” stripe is black. The upperparts (centre of the hind-neck to the rump and uppertail coverts) are black with a black and white barred panel in the centre of the back from mid-mantle to the lower back. The underparts (throat, breast, belly, and vent) are dark buffy brown with streaking on the flanks. The upperwing is black, with white subterminal spots on the coverts and white checkering on the flight feathers. The underwing is striped black and white with white coverts. The tail is black with white outer feathers, barred with black. The male has a narrow red nape that distinguishes him from the black-naped female. The Hairy Woodpecker is similar in appearance to the Downy Woodpecker but is larger with a longer, stouter bill.

*Picoides villosus picoides* differs from the nominate race, *P. villosus villosus*, in that the pale area in the centre of the back is barred rather than pure white; the outer tail feathers are barred, not white; and the underparts are brownish rather than pure white (Miller et al. 1999).

### Distribution

#### Global

The Hairy Woodpecker occurs from the treeline in Alaska and central Yukon, across the northern Prairie provinces, east to Newfoundland, and south to highland forests of Panama and the Bahamas (AOU 1983; Campbell et al. 1990).

#### British Columbia

Hairy Woodpeckers are found throughout forested British Columbia, but *P. villosus picoides* is endemic to the Queen Charlotte Islands (Campbell et al. 1990).

#### Forest regions and districts

Coast: Queen Charlotte Islands

#### Ecoprovinces and ecosections

COM: QCL, SKP, WQC

#### Biogeoclimatic units

CWH: vh, wh

MH: wh

#### Broad ecosystem units

CH, HS, MF, SR

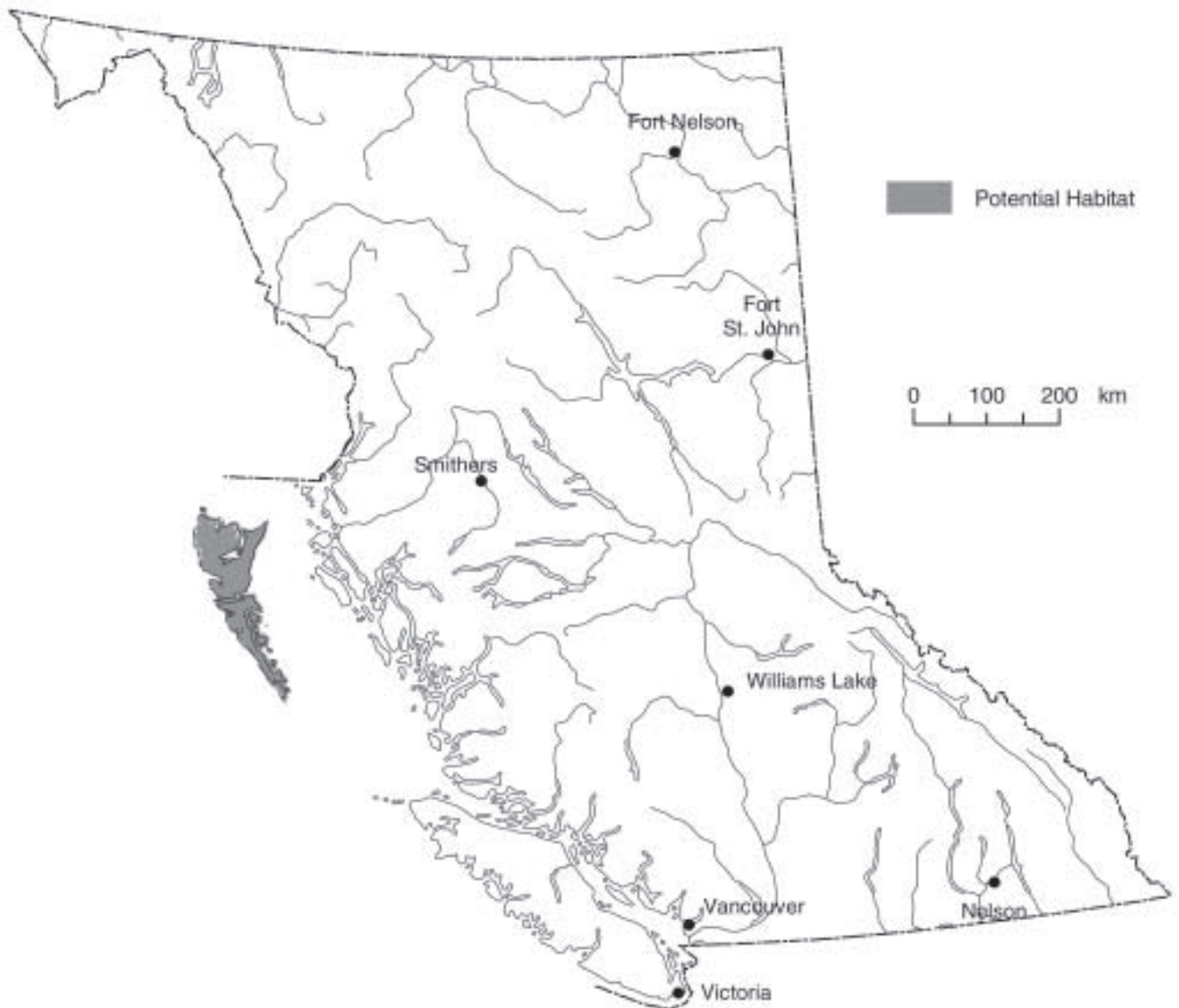
#### Elevation

Sea level – ~1800 m

### Life History

Very little is known about the ecology of this subspecies; therefore most of the following information is inferred from studies elsewhere, especially from the morphologically similar subspecies, *P. villosus harrisi* of Pacific coastal regions.

## Hairy Woodpecker - subspecies *picoideus* (*Picoides villosus picoideus*)



Note: This map represents a broad view of the distribution of potential habitat used by this species. The map is based on several ecosystem classifications (Ecoregion, Biogeoclimatic and Broad Ecosystem Inventory) as well as current knowledge of the species' habitat preferences. This species may or may not occur in all areas indicated.

## Diet and foraging behaviour

Diet consists largely of wood-boring beetle (buprestids, cerambycids, and scolytids) larvae and adults especially when alternate food sources such as ants, caterpillars, and other insects are scarce (Crockett and Hansley 1978; Winkler et al. 1995, Steeger et al. 1998). Animal matter makes up over 80% of the total diet, and is supplemented by fruits and seeds, especially in the winter (Cannings et al. 1987; USFWS 1987). Sap is also taken at sapsucker wells (Winkler et al. 1995).

Hairy Woodpeckers are opportunistic foragers that find food by gleaning, probing, pecking, hammering, tearing away bark, or drilling funnel-shaped holes into bark (USFWS 1987; Winkler 1995). This woodpecker searches the trunks of living and dead trees, stumps, exposed roots, snags, downed logs, the ground, and logging debris in recent clearcuts (USFWS 1987). The branchless section of the trunk below the crown is the favoured foraging area (Winkler et al. 1995). Larger trees are more frequently searched during all seasons than smaller trees (Winkler et al. 1995).

## Reproduction

Pair formation begins 2–3 months before nesting (Winkler et al. 1995). The male selects the nest site and excavates the nest cavity over 17–24 days. Clutches contain three to five eggs, which are incubated by both sexes for 11–12 days. Nestlings fledge after about 24–27 days. In British Columbia, nests have been found between 4 April and 20 June (Campbell et al. 1990). On the Queen Charlotte Islands, nests with young have been found on 31 May and 1 June.

Upon fledging, the brood divides between parents and fledglings accompany one parent for 2 weeks or more. Adults have been documented feeding fledglings on 8 June and 16 June on the Queen Charlotte Islands. One brood is probably produced annually.

In British Columbia, most recorded Hairy Woodpecker nest sites are cavities excavated in deciduous trees that may be live or dead (Campbell et al. 1990),

but on the coast most nests are built in conifers. Live nest trees are usually infected with heartrot decay, which leaves a strong sapwood shell protecting the cavity within the softened, decaying heartwood (Keisker 1987).

## Home range

There are no data on breeding territory size or home ranges within British Columbia. In Oregon, territory size averaged 10.1 ha/pair. Elsewhere, reported territories range from 0.6 to 15 ha and are always strongly influenced by habitat quality. The minimum forest patch size required to support a breeding pair during the nesting season is estimated to be 4 ha and the minimum width of a riparian zone is 40 m (USFWS 1987).

## Site fidelity

New cavities are usually excavated each year although some birds reuse old cavities.

## Movements and dispersal

The Queen Charlotte Hairy Woodpecker is a non-migratory woodpecker, although some vertical movement is probable with birds moving towards the valley bottoms and coastal areas in the winter (Campbell et al. 1990).

## Habitat

### Structural stage

Variable, including some old growth and mature conifer stands (stages 6 and 7) as well as some mature hardwoods. In northwestern Washington, this species is found in a variety of successional stages although most were in or at the edge of old-growth forests (USFWS 1987).

### Important habitats and habitat elements

#### Nesting

Hairy Woodpeckers inhabit a variety of forest types although they may prefer semi-open mixed forests or forest edges for nesting habitat (Campbell et al. 1990). Meadow edges, riparian zones, and burns are also important habitats.

The Hairy Woodpecker excavates nest and roost cavities in live trees with heart rot or dead trees. Four nests recorded from the Queen Charlotte Islands were found in dead trees, one of which was identified as a western hemlock (*Tsuga heterophylla*) (BC Nest Records Scheme). Other reports from the Queen Charlotte Islands suggest that large diameter (>80 cm dbh) Sitka spruce (*Picea sitchensis*) are used for nesting (Shepard, unpubl. data).

Hairy Woodpecker nest trees in other coastal areas have a large dbh and tall height (see Tables 1 and 2). On northern Vancouver Island, in the Coastal Western Hemlock and Mountain Hemlock biogeoclimatic zones, 73 Hairy Woodpecker nests were documented. Variables that best characterized Hairy Woodpecker nest plots in the Nimpkish Valley (Vancouver Island) included a greater dbh and density of western hemlock, a greater basal area of deciduous and Douglas-fir (*Pseudotsuga menziesii*) trees, and a higher density of Douglas-fir stems

(Deal and Setterington 2000). This same study found that 77% of the three species of woodpecker nests were found on slopes <20%.

Hairy woodpeckers used wildlife tree classes 2–7 inclusive for nesting while the highest number of nests were found in classes 4 and 5, suggesting they prefer to nest in trees in a significant state of decay (Deal and Setterington 2000). Relative to overall availability, Hairy Woodpeckers appeared to be selecting for classes 4 and 6 trees (Deal and Setterington 2000). Hairy Woodpecker nests were found more often than expected in bark class 1 trees (all bark present) and 55% of the Hairy Woodpecker nests were found in snags with >95% of the bark remaining (Deal and Setterington 2000).

Most of the nests were found in western hemlock (60%), Douglas-fir (20%), amabilis fir (*Abies amabilis*) (10%), red alder (*Alnus rubra*) (4%), and western white pine (*Pinus monticola*) (3%). Nests were found less than expected in western redcedar,

**Table 1.** Characteristics (mean ± SD) of Hairy Woodpecker nest trees in three locations

Forest	Location	n	Tree dbh (cm)	Tree height (m)	Nest height (m)	Citation
Western hemlock zone conifer	Oregon Coast Ranges	23	72.2 ± 48.0	30.1 ± 16.8	21.7 ± 12.0	Nelson 1988
Mixed to Douglas-fir	South Cascades	18	73.9 ± 33.4	28.6 ± 14.4	17.7 ± 10.4	Lundquist 1988
CWHxm, CWHvm, MHmm	North Vancouver Island	73	78.6 ± 28.1	26.5 ± 11.7	20.0 ± 10.3	Deal and Setterington 2000

**Table 2.** Characteristics (mean ± SD and range) of Hairy Woodpecker nest trees by species in the Nimpkish Valley, Vancouver Island (after Deal and Setterington 2000)

Species	n	dbh (cm)	Range	Tree height (m)	Range	Nest height (m)	Range
Amabilis fir	8	66.4 ± 23.0	38–96	19.6 ± 11.0	3–34	15.9 ± 10.8	2–31
Douglas-fir	15	95.1 ± 37.6	40–167	34.5 ± 13.5	15–65	24.7 ± 13	10–52
Western hemlock	48	76.6 ± 22.9	34–139	26.4 ± 9.9	7–52	20.6 ± 9.7	5–51
Western white pine	2	77.5 ± 34.6	53–102	14 ± 5.7	10–18	9.0 ± 1.4	8–10

but in other tree species according to their availability. A northwestern Washington study in a similar ecosystem found that Hairy Woodpecker nests were found more than expected in western hemlock while western redcedar was avoided (Zarnowitz and Manuwal 1985). In the southern Washington Cascades, western white pine was also an important nesting tree for woodpecker species including Hairy Woodpeckers (Lundquist 1988).

In summary, relatively large-diameter live trees with rotted heartwood or dead in decay classes 2–6 are likely the preferred nest trees for this particular subspecies of Hairy Woodpecker. Also, mature to old conifer stands, or younger, diseased conifer stands are likely preferred habitats, especially if a mix of trees of decay classes (2–6) are present.

### **Foraging**

Important foraging habitats include mature coniferous forests, deciduous and mixed forests, and openings such as meadows, marshes, ponds, logged area, or burns.

In old-growth stands in the southern Washington Cascades, Hairy Woodpeckers fed most frequently in and preferred Douglas-fir and fed in hardwoods less than expected (Lundquist 1988). In second growth, they preferred Douglas-fir and fed in species other than Douglas-fir and western hemlock, particularly hardwoods, significantly more than expected from availability. In this same study, Hairy Woodpeckers' use of dead trees over live trees was significant, given the lower availability of snags in both old growth and second growth. The large diameter (>50 cm dbh) class of trees were preferred as feeding substrates in both old growth and in second growth, although the 11–50 cm class was used more frequently in second growth and the >50 cm was used more frequently in old growth (Lundquist 1988).

### **Wintering**

Winter habitat is similar to nesting habitat with this species frequenting a variety of forest types including openings within mature coniferous forest, burns, riparian areas, deciduous groves, and mixed-woods. Hairy Woodpeckers also frequently use

residential areas where they feed in gardens and at feeders (Campbell et al. 1990). Hairy Woodpeckers take shelter in the winter in old tree cavities or excavate new cavities for roosting (Bent 1939; Kilham 1983; USFWS 1987, Winkler et al. 1995).

In similar ecosystems to the Queen Charlotte Islands, good foraging and wintering habitat is in mature forests with a mixture of coniferous trees in old-growth and Douglas-fir and deciduous trees in second growth. Good foraging and wintering habitat features include large diameter trees and particularly snags.

## **Conservation and Management**

### **Status**

The Queen Charlotte Hairy Woodpecker is on the provincial *Blue List* in British Columbia. Its status in Canada has not been determined. The five other subspecies of the Hairy Woodpecker that occur in British Columbia are not considered to be at risk (COSEWIC 2002).

Summary of ABI status in BC and adjacent jurisdictions (NatureServe Explorer 2002)

BC	Canada	Global
S3	N3	G5T3

### **Trends**

#### **Population trends**

Population trend data for this subspecies are not available. Breeding Bird Survey data for other subspecies within British Columbia indicate an increase in population from 1966 to 1996. Elsewhere, including the Pacific Northwest, Hairy Woodpecker populations have been declining (Ehrlich et al. 1992).

#### **Habitat trends**

Trends are unknown.



## Threats

### Population threats

The “Queen Charlotte” Hairy Woodpecker is endemic to the Queen Charlotte Islands and thus has a restricted range and is vulnerable to extinction.

### Habitat threats

In British Columbia, the primary threat to this species is loss of young-to-old coniferous and hardwood forest habitat required for breeding and foraging habitat. Local population fluctuations can be expected if woodpecker territories are logged, without adequate retention of wildlife tree habitat. Snag removal and even-aged stand development have been suggested as the causes for reduction of Hairy Woodpecker populations in coastal Washington (Manuwal 1981). Traditional clearcuts remove entire stands of nesting habitat, while historical partial cut logging often removed the large trees needed for recruitment as future nest trees for woodpeckers. Cutting of decadent trees that have been identified as danger trees near work areas also removes high quality nest trees. Because current forest practices of smaller clearcuts with wildlife tree retention (WTR) areas and riparian reserve zones may create more favourable edge habitat, as long as trees suitable for nesting are retained, it is possible that habitat may be increasing.

### Legal Protection and Habitat Conservation

The Hairy Woodpecker, its nests, and its eggs are protected from direct persecution in Canada and the United States by the *Migratory Birds Convention Act*. In British Columbia, the same are protected from direct persecution by the provincial *Wildlife Act*.

Nesting habitat is protected within the Gwaii Haanas National Park Reserve on South Moresby Island and smaller islands; Naikoon Park; and other, smaller reserves such as Drizzle Lake Ecological Reserve (Fraser et al. 1999).

Most of the remainder of this woodpecker’s nesting habitat on the Queen Charlotte Islands is on Crown land.

Habitat conservation may be partially addressed by the old forest retention targets (old growth management areas), riparian reserves, and WTR area recommendations in the results based code.

## Identified Wildlife Provisions

### Sustainable resource management and planning recommendations

- ❖ The Hairy Woodpecker should be managed on an ecosystem level. Maintain connectivity between higher elevation summer habitats and lower elevation wintering habitats to maintain feeding, nesting, and roosting habitat as well as opportunities for dispersal.
- ❖ The objective for this species is to maintain suitable wildlife trees and green recruitment trees for nesting across the breeding range and over time. Consider WTR areas and old growth management areas (OGMA) objectives for this species on the Queen Charlotte Islands. Blocks should be assessed to identify potentially suitable WTR areas. Suitable WTR areas or OGMAs for this species should be based on the information in Table 3.
- ❖ It is recommended that salvage not occur in WTR areas and OGMAs established to provide habitat for this species. In addition these areas should be designed to include as many suitable wildlife trees as possible and maintained over the long term.

### Wildlife habitat area

#### Goal

Because there are very few known nest areas for this subspecies, these sites should be established as WHAs. Suitable habitat should be managed through wildlife tree and old forest retention objectives.

#### Feature

Establish WHAs at known nests.

#### Size

Typically 4 ha but will depend on site-specific factors such as habitat quality.

**Table 3.** Preferred WTP characteristics for the Queen Charlotte Hairy Woodpecker

Attribute	Characteristics
Size (ha)	≥1 ha
Location	CWHwh, CWHvh, MHwh; optimal to locate WTP adjacent to larger, mature forest stands
Tree features	live trees with heartrot or other structural defects and harder wildlife trees are preferred. Bark classes 1 and 2
Tree species	coniferous species (particularly western hemlock, and Sitka spruce) as well as red alder
Tree size (dbh)	≥75 cm western hemlock; ≥80 cm Sitka spruce; in the absence of trees with the preferred dbh, trees ≥35 cm should be retained for recruitment and dead hardwoods >35 cm should be retained
Tree decay class	2–6

### **Design**

Centre WHA around nest tree as best as possible. Also maximize inclusion of foraging and nesting habitat features.

### **General wildlife measure**

#### **Goals**

1. Maintain nest site and potential nest trees.
2. Minimize disturbance during critical breeding times.
3. Maintain important structural elements for breeding and foraging.
4. Ensure WHA is windfirm.

#### **Measures**

##### *Access*

- Do not construct roads, trails, or other access routes.

##### *Harvesting and silviculture*

- Do not harvest or salvage.

##### *Pesticides*

- Do not use pesticides.

### **Additional Management Considerations**

Silvicultural systems that simulate openings caused by endemic natural disturbance agents such as windthrow and root rot should be considered. These

include partial cutting systems such as variable retention, which retains trees in groups (patches) and as scattered individual green trees.

Encourage wildlife tree creation treatments (topping, scaring, cavity starts).

### **Information Needs**

1. Breeding territory habitat use and size.
2. Home range habitat use and size.
3. Suitability of various sizes and quality of wildlife tree retention areas for nesting habitat, including configuration or geometry of shape as well as location relative to surrounding features (water bodies, slope, aspect).

### **Cross References**

“Queen Charlotte” Northern Saw-whet Owl

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