Williamson's Sapsucker

Sphyrapicus thyroideus subspecies *thyroideus*

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Disclaimer: The following document was compiled based on a review of information currently available for this species as of November 25, 2005. This document can be used to assist with the identification of this species and to support the development of management recommendations as they relate to forestry activities. For more information on this species, please refer to the reference section or consult with a Species at Risk specialist.

Description

The Williamson's Sapsucker is a medium-sized woodpecker that is approximately 21cm in length. The male has a distinctly black head, breast and back with white stripes behind and below the eyes. In mature males, the throat is red, whereas, in immature males, the throat is white. Both mature and immature males have black wings, with white barring on the flight feathers and a bold white patch on the front edge of the wing. They also have a bright yellow belly with some black and white barring on their sides[1].

The female is less colourful with an entirely pale brown head and a back of the same colouring except it is barred with black. Their dark brown wings are lightly spotted and barred with white while their breasts and sides are heavily barred. The female's belly is pale yellow[1]. Click here for more information on this species including a recording of its vocalization.

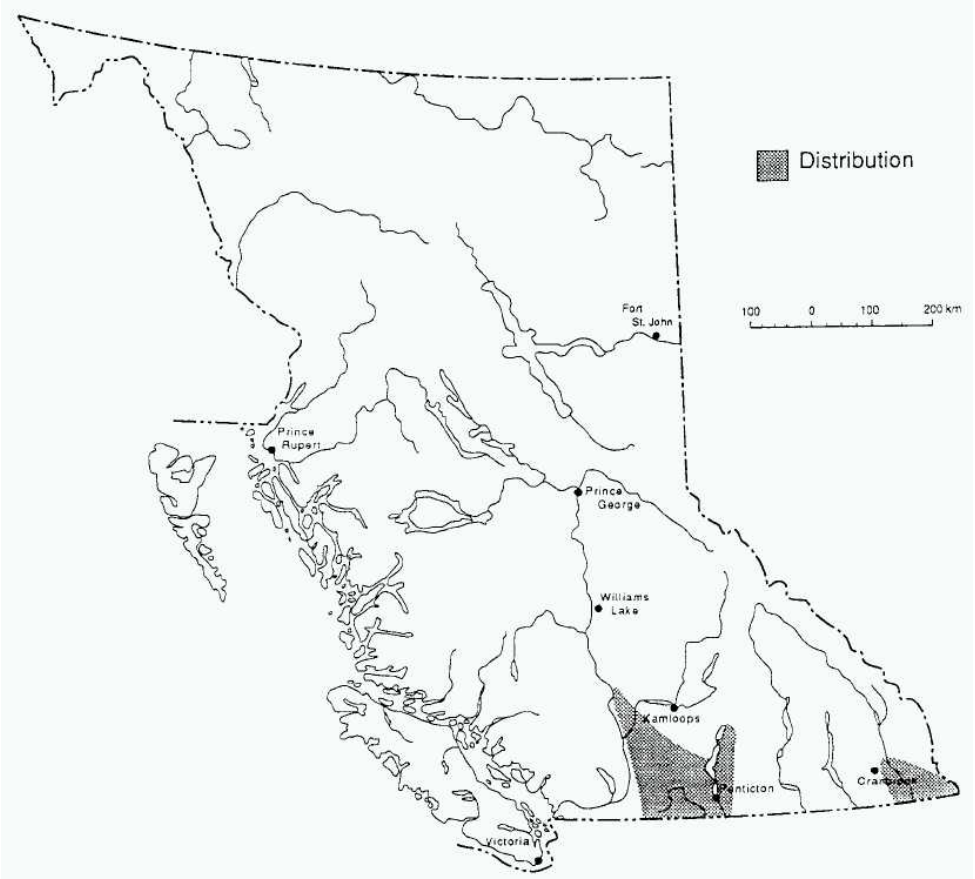
Male

Female

Photos courtesy of Stuart Healy

Distribution

In North America, the Williamson's Sapsucker breeds from the southern interior of British Columbia southward through mountainous areas to southern California, northern Baja, and northern New Mexico. In British Columbia, the *thyroideus* subspecies breeds in southern British Columbia from Lightning Lakes in Manning Provincial Park north to Botanie Creek and Hat Creek, east to Scottie Creek, Louis Creek and Greenwood[2].



Distribution of Williamson's Sapsucker in British Columbia[2]

Forest Districts[3,4]

- Arrow Boundary Forest District (DAB)
- Chilliwack Forest District (DCK)
- **Cascades Forest District (DCS)**
- **Kamloops Forest District (DKA)**
- Okanagan Shuswap Forest District (DOS)
- Rocky Mountain Forest District (DRM)

Ecoprovinces and ecosections[4]

- SIM: CCM, SCM, SFH, SPM
- SOI: GUU, NIB, NOB, NOH, OKR, PAR, SHB, SOB, SOH, STU, THB

Biogeoclimatic Units[4]

- ESSF - Engelmann Spruce-Subalpine Fir - mw (very rare)
- ICH: Interior Cedar-Hemlock - dw, mk1, mk2, mw2, xw
- IDF - Interior Douglas-fir - dk1, dk1a, dk2, dm, dm1, dm2, mw1, mw2, un, xh1, xh1a, xh2, xh2a, xw

- MS - Montane Spruce - dk, dm1, dm2, xk
- PP - Ponderosa Pine - dh1, dh2, xh1, xh1a, xh2, xh2a

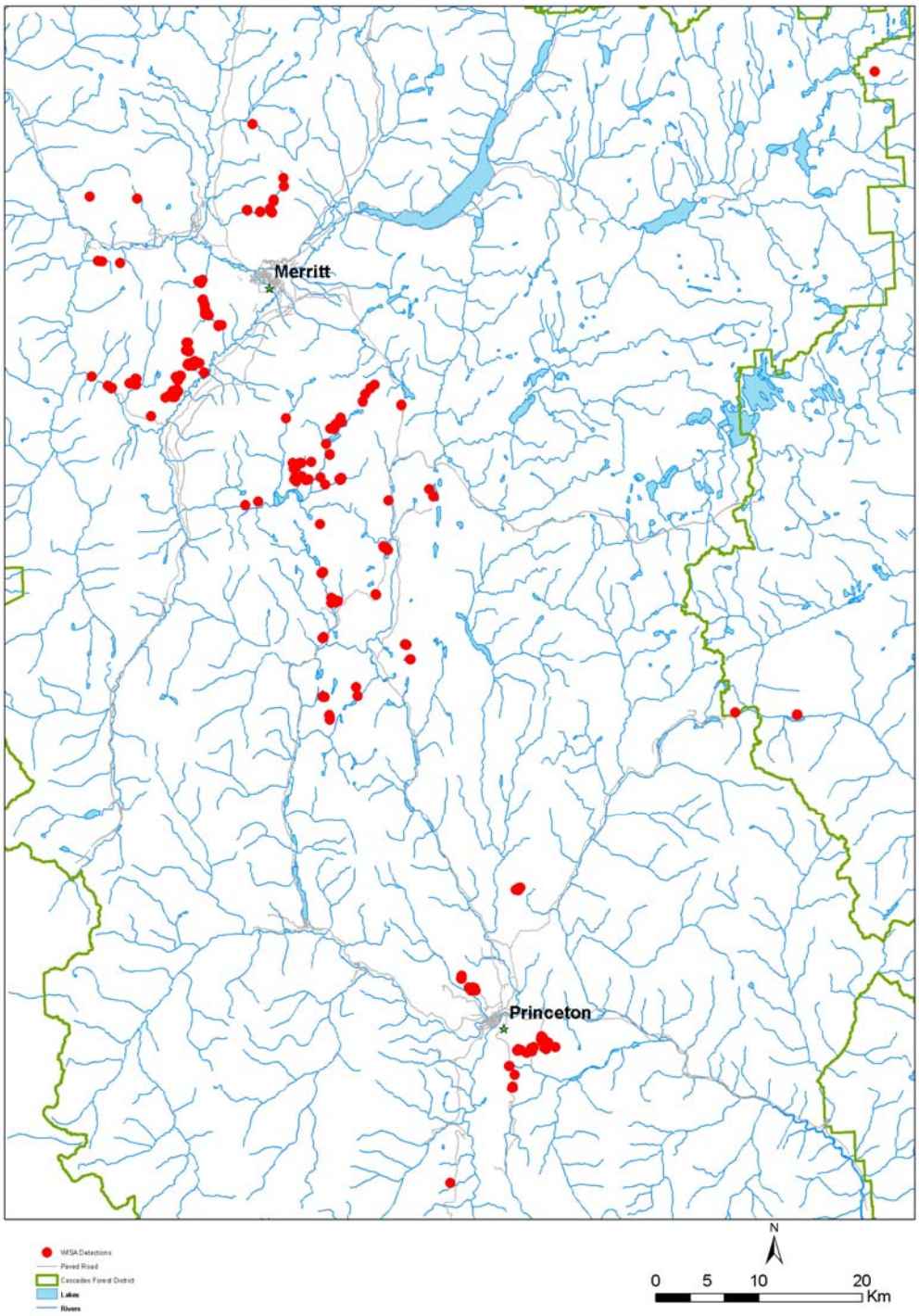
Broad ecosystem units[4]

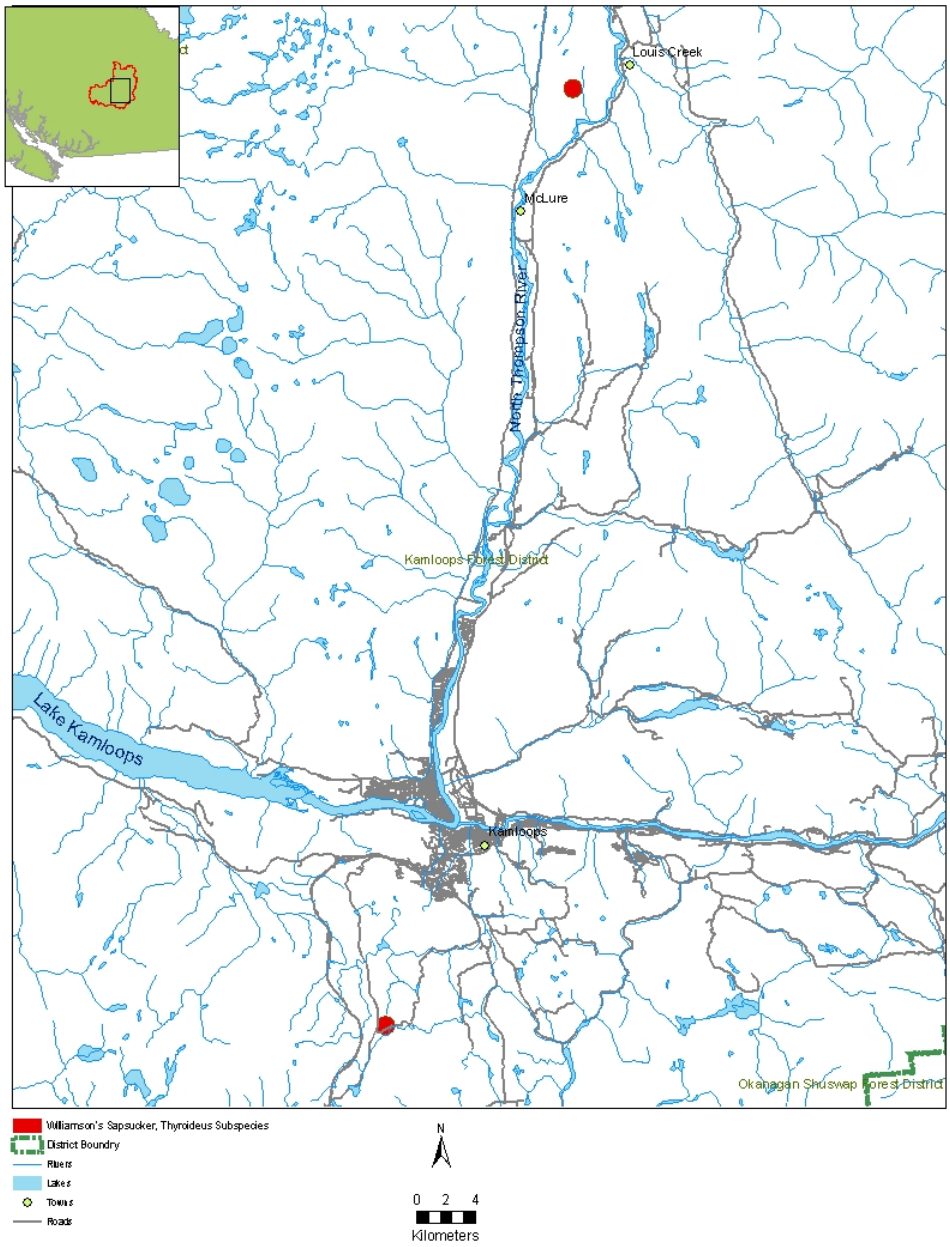
- CR, DF, DL, DP, IG, IS, OV, PP, SD, WR

Elevation

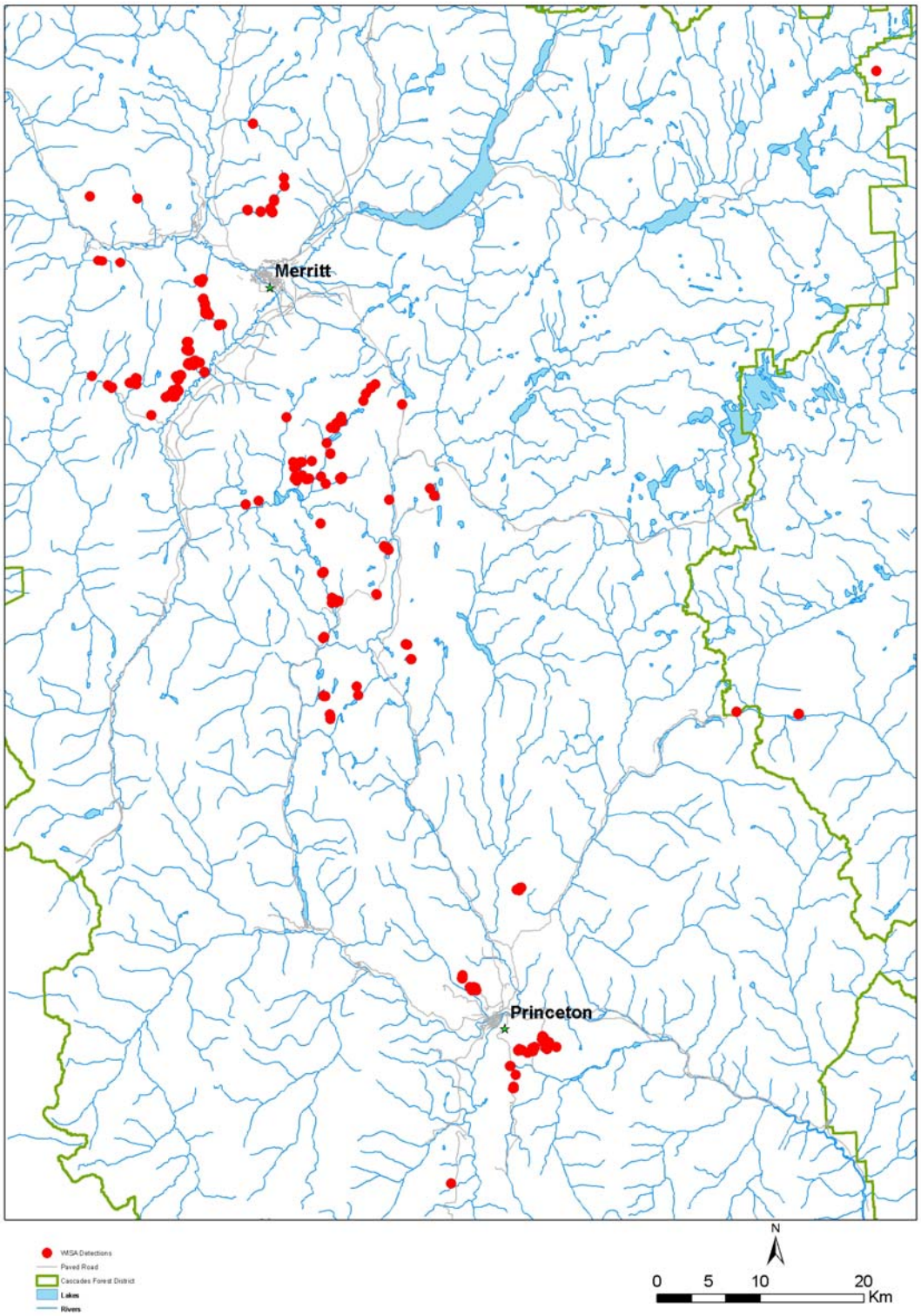
The Williamson's Sapsucker generally breeds at elevations between 850 and1490m. In the Okanagan, breeding occurs between 1050 m and 1200 m elevation. West of Cache Creek and near Merritt, nests have been found between 850 m and 1100 m elevation[4,5].

Map of Known Locations


Merritt
Princeton
WSA Detections
Paved Road
Cascades Forest District
Lakes
Rivers
N
0 5 10 20
Km



Known locations for Williamson's Sapsucker (*Sphyrapicus thyroideus thyroideus*), in the Kamloops Forest District as of September 2005 (data source: Conservation Data Centre).



Known locations for Williamson's Sapsucker (*Sphyrapicus thyroideus thyroideus*), in the Cascades Forest District as of September 2005 (data source: Conservation Data Centre).

Biology

The Williamson's Sapsucker is a primary cavity nester with a limited distribution and small population size compared to other species of sapsuckers. This species has the most restricted distribution and lowest abundance of the four species of sapsuckers occurring in British Columbia[4,5].

Reproduction

The males establish territories when they arrive on the breeding grounds in March; females arrive 1-2 weeks later[4,5]. Excavation of a nest cavity in a standing tree or snag begins shortly after pair formation and lasts 3-4 weeks. There is only one brood per season[2]. Four to six eggs are laid between late April to mid-June and incubation lasts for approximately 12 to 14 days. In British Columbia, nests with eggs or young can be found between 23 April and15 July. The young birds fledge after 26-33 days (early August); after which the young and adults disperse from the nesting area[3,4,5].

Foraging

Williamson's Sapsuckers, like all sapsuckers, are highly specialized foragers. It feeds exclusively on conifer sap and phloem during the pre-nestling period. After nestlings are present the diet shifts to mainly carpenter ants[4,5]. Foraging occurs primarily in live coniferous trees, mainly Douglas-fir (*Pseudotsuga menziesii*) and Western Larch (*Larix occidentalis*). There are no data on food habits or foraging ecology in British Columbia[5].

Habitat

Williamson's Sapsuckers are found in coniferous mountain forests throughout their breeding range, usually at middle to high elevations in montane spruce-fir (*Picea-Abies*), Douglas-fir, Lodgepole Pine (*Pinus contorta*), and Ponderosa Pine (*Pinus ponderosa*) forests[9]. Mixed coniferous-deciduous forests are also used where Trembling Aspen (*Populus tremuloides*) can also be an important nesting tree[6].

Breeding home range sizes in Canada in Western Larch habitats are on the order of 17-54 ha, much larger than those reported from Ponderosa Pine and Trembling Aspen habitats in Colorado and Arizona, which were 4-11 ha in size[2]. In British Columbia home range is likely greater than 20 ha but information is limited[4].

Structural stage[4]
Nesting: 6–7
Foraging: 4–7

Important Habitats and Habitat Features

Essential breeding habitat elements for Williamson's Sapsucker include[2,4]:

- Trees suitable for nest cavity excavation, or existing tree cavities;
- Live coniferous trees for sap well creation; and
- Standing live and/or dead trees for gleaning ants (particularly carpenter ants, *Camponotus* sp.) from the bark surface to feed adults and nestlings in summer.

Nesting

Stands used for nesting can vary from densely forested stands to very open stands with only occasional scattered trees. However, in the Okanagan-Greenwood population of the subspecies, stands containing old Western Larch appear to be disproportionately important to nesting Williamson's Sapsuckers. One study found that Williamson's Sapsucker nest and/or breeding pair density was proportional to the amount of old-growth forest, or old Western Larch trees, within the areas. It appears that observed densities were the result of habitat quality,

where the highest quality habitat is old-growth Western Larch forest because it contains old Western Larch for nesting and that contains carpenter ants for feeding on, and the stands are typically multi-storied with numerous smaller trees for sap well creation[2].

In general, most nests in British Columbia were in coniferous trees, with Western Larch accounting for the majority[3]. Ponderosa pine (especially near Princeton), Douglas-fir, Lodgepole Pine (*Pinus contorta*), Engelmann spruce (*Picea engelmannii*), white spruce (*Picea glauca*), paper birch (*Betula papyrifera*), and black cottonwood (*Populus balsamifera*) are also used for nesting. In the western part of its range in British Columbia, trembling aspen (*Populus tremuloides*) appears to be the preferred nest tree species (e.g., 4 of 5 nests south of Merritt and 5 of 5 nests west of Cache Creek)[4,5].

North of Greenwood, nest trees were on south-facing slopes; none were found on north-facing slopes. However, nest trees near Rock Creek and Midway occurred on any and all aspects if slopes were <30%; but if slopes were >41%, all nest trees were on north- or west-facing slopes[4].

Williamson's Sapsuckers may occasionally re-use the same nest tree although new cavities are usually excavated each year[4]. This species generally require larger trees for nesting (i.e., >30 cm dbh but coniferous nest trees are usually >50 cm dbh). In the Arrow Boundary forest district (Northern Okanagan Highland and Selkirk Foothills ecosections), the Williamson's Sapsuckers clearly select larger diameter (>60 cm dbh) western larch as nest trees. No nest trees have been recorded as single trees standing alone in an opening, but are usually found within an open stand or within a patch of larger trees[4,5].

Because Williamson's Sapsuckers are moderately weak excavators, they require live or recently dead trees with advanced heartwood decay (wildlife tree classes 2-5)[4,7]. Stands of +200- year-old western larch are the best nesting habitat available in British Columbia, but not all such stands have the veteran larch needed as nest trees. Veteran larch needed for nest trees are usually much older than the "stands" they occur in, and have survived one or two stand maintaining fires[4].

Williamson's Sapsucker nest tree. Photo courtesy of Chris Gill

Foraging

Little information is available on Williamson's Sapsucker foraging habitat in British Columbia. Live trees, in open to semi-open (<75% canopy cover) mixed coniferous forests that include western larch, Douglas-fir, grand fir, and trembling aspen are important foraging habitat. North of Greenwood, Williamson's Sapsuckers preferentially fed in pole/sapling stage (20–40 years age) Douglas fir and western larch stands. The average dbh of trees used for sap wells in these stands was 27.6 cm (Douglas fir) and 44.2 cm (western larch)[4,5].

Average dbh is the best measurement for predicting which trees were used as foraging sites. The high average foraging height of 10m apparently allows birds to reach phloem through a relatively thin layer of bark as the trees were thick-barked and larger at the base[8]. Four or five sap trees are used by each pair. Sap trees are smaller compared to the average size of available trees[9].

During the nestling period, ants are gleaned from the branches and trunks of conifer trees[10].

Roosting

This sapsucker roosts in natural or excavated cavities in trees, probably similar in size and species composition to those used for nesting[4].

Conservation and Management

Status[3]

Provincial Rank: S2B (Provincially Imperiled, breeding population)
BC Rank: Blue (Special concern)
COSEWIC Status: E (May 2005) (Endangered)

Threats

The principal limiting factor to Williamson's Sapsucker populations in Canada appears to be limitations of amount of suitable breeding habitat. In the Okanagan-Greenwood population (89% of the *thyroideus* subspecies total population) primary habitat consists of old-growth stands with large veteran Western Larch nesting trees with heartrot, smaller (20-40 cm dbh) Douglas-fir and Western Larch for sap well creation, and older trees with abundant carpenter ants for feeding nestlings. All three habitat components must be present to create suitable habitat. Most (88%) of the Williamson's Sapsucker nests found in this population were associated with stands >170 years old, or with Western Larch trees >170 years old in multi-aged stands[2].

The primary habitat threat to these old-growth Western Larch stands is timber harvesting on Crown Land, and land clearing on private land. Clearcuts usually remove habitat while selection logging often removes large trees that are needed for recruitment as future nest trees[4]. Removal of snags or danger trees also reduces nesting habitat, particularly in western larch forests where Williamson's Sapsuckers seem to nest most often in coniferous snags[4].

Potential impacts of aerial spraying for forest insect pests are of greater concern, but remain to be investigated[4].

Management Recommendations

Consult with a Registered Professional Biologist prior to implementing the following management recommendations because certain situations may require custom solutions based on specific site characteristics.

- Budget permitting, develop a habitat model to help identify high value habitat found within your areas of interest. The complexity of the model, and therefore its accuracy, will be dependent on budgetary constraints.

- Identify locations where this species is known to occur: obtain occurrence data from the Conservation Data Centre (http://srmwww.gov.bc.ca/cdc/) and if necessary conduct ground surveys.

Forest harvesting activities near Williamson's Sapsucker territories or nest sites should follow the management guidelines that are currently being developed by the Williamson's Sapsucker Recovery Team. These guidelines should be available by the end of 2008 (L. Gyug pers comm.). In the interim, the following strategies are recommended:

- Do not disturb active nests during the breeding season (April 1 to August 30). Establish a 100 m no harvest zone around nest sites.

- In general, avoid harvesting, salvage, blasting (within 1km), road construction, helicopter activity (within 500m) or other prolonged disturbance.

- Avoid the use of aerial spraying for forest insects in Williamson's Sapsucker habitat, especially during the breeding season (April 1 to August 30).

- Do not construct roads unless there is not other practicable option.

- Increase retention of veteran stands with mixed western larch, Douglas-fir, and lodgepole pine on south-facing slopes in the ICH, MS, and on north-facing slopes in the IDFxh1 and IDFdm1. Increase retention of large diameter ponderosa pine in the IDFdk[4].

- Also retain some mature western larch, ponderosa pine, or Douglas-fir >60 cm dbh, especially if these trees have broken or dead tops, evidence of heart rot decay (fungal conks, large stem scars), or evidence of wildlife use (e.g., nest cavities). In the western parts of the sapsuckers' range, retain patches of live trembling aspen >30 cm dbh with broken tops, stem scars, canker faces, fungal conks, or nest cavities[4].

- Leave advance regeneration, pole-saplings, and deciduous vegetation around wildlife trees to enhance their habitat quality[4].

- Snags should be left in clumps instead of evenly spaced; this will help to create ideal habitat for many woodpeckers. Groups of snags present in drainage bottoms or other low-lying areas should be especially maintained[11].

- Use partial cutting silvicultural systems to maintain habitat attributes suitable for Williamson's Sapsuckers in areas scheduled for harvesting. These can include silvicultural systems that employ some type of patch retention (e.g., WTR areas and RMAs), or other partial cutting system that retains scattered trees with suitable habitat attributes[4].

- Employ silvicultural stand tending practices to promote semi-open stands (<75% canopy crown closure) containing trees with suitable habitat attributes for Williamson's Sapsucker. Variable density planting and spacing treatments, and prescribed understorey burning can produce open stands of this description[4].

- Blocks should be assessed to identify potentially suitable WTP areas. Listed below are preferred WTP considerations for Williamson's Sapsuckers[4]:

Attribute	Characteristics
Size (ha)	At least 0.25ha; preferably larger
Location	See Biogeoclimatic Units (above)
Tree features	signs of woodpecker use (i.e., cavities); structural defects such as dead or broken tops, or presence of fungal conks and other evidence of internal tree decay
Tree species	veteran larch preferred when available, but also ponderosa pine, Douglas-fir, and grand fir; trembling aspen in the western part of the range
Tree size (dbh)	70–96 cm or larger (after Bull et al. 1986); in the absence of trees with the preferred dbh, deciduous trees ≥30 cm dbh and ≥50 cm dbh for coniferous species should be retained for recruitment
Wildlife tree class	class 2–6, especially with soft dead or broken tops, or fungal conks

- Report new sightings to the Ministry of Environment Kamloops office (John Surgenor. Ph: (250) 371-6306).

References

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