

1999 Inventory for Northern Goshawks and Williamson's Sapsuckers, Boundary Forest District

by

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EXECUTIVE SUMMARY

1999 draft Forest Development Plans (FDPs) in Forest Licences and Woodlots were reviewed for overlap with the nesting habitat of Williamson's Sapsuckers in the Boundary Forest District. Inventory was conducted in 4 new FDP areas as well as at 16 known nest sites from previous years' inventories.

Williamson's Sapsuckers were detected in none of the newly surveyed sites in 1999 although 4 nests were found in previously used areas. In total 26 Williamson's Sapsucker nests have been found in the 4 years of inventory. Large (>70 cm dbh), live western larches with obvious defects and dead standing birch trees are most important for nesting. In the Boundary Forest District, "condominium" large larch trees need to be targeted as the centers of any proposed Wildlife Tree Patches within the IDFxh1, IDFdm1, ICHmk1 and MSdm1 between 900 and 1450 m from the western boundary of the district as far east as Boundary Creek. If condominium larches are not present, then other condominium wildlife trees, and then large, broken or dead top larches need to be targeted for WTPs. The Wildlife Tree Guidelines for Boundary Forest District need to be rewritten when they come up for review in November 1999 to take this into account in the decision keys in the Appendix.

Nesting habitat in many places even within the range where they are relatively common has already been negated by previous high-grading of large western larch. Commercial cutting of large western larches on an opportunistic basis should not be allowed in this particular area where there is a high biodiversity emphasis.

Inventory of known and suspected Williamson's Sapsucker nest sites should continue in 2000, beginning in early May when males are drumming. Williamson's Sapsucker inventory must begin in Tree Farm Licence 15 and Tree Farm Licence 8, Block 1 since this inventory only covered areas in the provincial forest outside of Tree Farm Licences. These TFL's account for 50% of the Williamson's Sapsucker nesting range, and contain large amounts of suitable habitat. Recent large-scale timber harvesting in the southern portion of TFL8 Block 1 may already be impacting Williamson's Sapsucker populations.

Inventory for Northern Goshawks was conducted at 6 sites. Only one occupied Northern Goshawk nest was found in Woodlot 1468. Timber harvest at Skeff Creek may have already prevented Northern Goshawks from using that area.

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INTRODUCTION

This project was designed to collect inventory and habitat information for Williamson's Sapsucker and Northern Goshawk within selected Forest Development Plans in the Boundary Forest Districts of the Southern Interior Region of B.C. Environment.

The specific objectives of this report were to:

- conduct inventory for Williamson's Sapsucker within identified Forest Development Plan areas,
- recheck known nest sites of Williamson's Sapsucker found in the 1996-98 inventories,
- check known or suspected Northern Goshawk nesting locations,
- produce detailed maps showing positive locations and all sampling sites or transect locations, and
- record information on other Red or Blue-listed species observed in the search areas.

Acknowledgements

This project and report was completed under contract to the Southern Interior Region of British Columbia Ministry of Environment, Lands and Parks through the Habitat Protection Section, of the Okanagan Sub-Region of B.C. Environment, Penticton, B.C. Funding was supplied by Forest Renewal B.C. through Pope and Talbot Ltd of Midway B.C., the major forest licensee in the area. Alan Peatt, B.C. Env't., Penticton, served as contract monitor. Ross Munro provided field assistance.

SUMMARY OF EXISTING INFORMATION

Williamson's Sapsucker ssp. *thyroideus* (*Sphyrapicus thyroideus thyroideus*)

Williamson's Sapsucker was the subject of a recent status report in British Columbia (Cooper 1995) as well as FDP area inventories in 1996, 1997 and 1998 (Gyug 1996, 1997, 1998). The *thyroideus* subspecies of Williamson's Sapsucker breeds in the Thompson-Okanagan Plateau, west to Manning Park and Lytton. They are common however only in a small area east of the Okanagan Valley west to Boundary Creek, and within 40 km of the U.S. border. They require stands of mature or old Douglas-fir, ponderosa pine, and/or western larch between 780 and 1463 m elevation although stands of large diameter hardwoods are occasionally used for nesting. Western larch nest sites appear to be invaluable in that part of their range where they are relatively common. The estimate for population size in B.C. is on the order of only 100 nesting pairs (Gyug 1998). Home range sizes as small as 4 ha (data from outside B.C.) indicate this species may be able to use relatively small patches of suitable habitat.

Northern Goshawk (*Accipiter gentilis atricapillus*)

The Northern Goshawk has been identified as wildlife to managed under the auspices of

the Forest Practices Code with a species account published in Volume 1 of the Managing Identified Wildlife Guidebooks (B.C. Ministry of Forests 1997, 1999). The Northern Goshawk occurs throughout mainland B.C. The nest areas are in stands of large trees with dense canopies and relatively open understories. Nesting habitat is typically on gentle slopes. The post-fledging area is characterised by a mosaic of structural stages, but goshawks will avoid open habitats.

INVENTORY SITE CHOICE

Selection of Forest Development Plan (FDP) areas in the Boundary Forest District to be inventoried for Williamson's Sapsuckers were selected firstly for occurrence within their mapped range, and secondly for nesting habitat characteristics based on BEC Zone occurrence, forest cover typing and elevation. All Forest Licensees, the Small Business Program and all Woodlots were considered. No FDPs from Tree Farm Licences were reviewed and no searches conducted within Tree Farm Licences, except for follow-up searches at Williamson's Sapsucker nest sites found in 1996 (Gyug 1996). Areas inventoried for Northern Goshawks were based on previously known or suspected nesting sites.

Besides the areas rechecked for Williamson's Sapsucker nests from previous years, new inventories were conducted in:

- Small Business TSL A49395, Ripperto Cr.,
- Small Business TSL A49377-2, Ed James Cr.,
- Pope and Talbot CP 301-2, Ripperto Cr. and
- Pope and Talbot CP 315-1, -2, Ed James Cr.

Inventory was conducted for Northern Goshawks in:

- Small Business TSL areas A42639C, Volcanic Cr., where there was a previously known nesting site,
- Small Business TSL A48486, Rock Creek, where a Northern Goshawk had taken up residence during the breeding season of 1998,
- Woodlot 1468 where there was a previously known nesting site,
- Pope and Talbot, TFL 8 Block 1, CP 5G-2, Old Camp Rd., Henderson Cr., where there was a previously known nesting site,
- Pope and Talbot CP 285, and the area where CP176 has already been harvested in 1998, Skeff Cr., where nest sites were known from 1995, 1996, and 1997, and
- Weyco CP 177-2 where there was a known hawk nest at the edge of the already harvested seedtree cut.

INVENTORY METHODS

Williamson's Sapsuckers

We searched for Williamson's Sapsuckers nests in late June by listening for the begging calls of young woodpeckers in the nest, or keying in on drumming or calling adults to find the nest. To detect nests, fairly intensive surveys covering a high proportion of the area to be sampled were required where we tried to cover every portion of an area likely to hold a nest by approaching all points within that area to within 100 m. All occurrences of woodpeckers or sapsuckers heard or seen were recorded. All young heard from a nest were investigated to determine the species of nesting woodpecker or sapsucker. Universal Transverse Mercator (UTM) locations for all woodpecker and sapsucker nests were determined using a Garmin GPS12XL handheld GPS receiver with a usual accuracy of ± 60 m. Data collected at each nest were tree species, DBH, tree height, nest height, Decay Class, BEC Zone, elevation, slope, aspect, topographic situation and Site Series.

Where no Williamson's Sapsuckers were found, but there were trees (particularly Lw) that showed evidence of past sapsucker nesting, we made recommendations for Wildlife Tree Patch placement in the proposed blocks to best serve the needs of Williamson's Sapsuckers.

In addition, all Williamson's Sapsucker nests found during inventories from 1996 to 1998 were rechecked in June 1999 to determine if the same nest tree was being re-used for nesting. If the nest tree was not used, the immediate area was searched to determine if another tree in the vicinity was being used for nesting. Data collected at each new nest tree was as described above. At each re-used tree, the nest height and direction of the opening were noted to determine if the same nest hole was being used.

Northern Goshawks

Only areas where previous Northern Goshawk nesting was known or suspected were inventoried from July 14 to 16, 1999. If Northern Goshawks were not immediately detected near to the known or suspected nesting location, we did juvenile begging call playback at 800m intervals along with procedures as per the RIC Manual (Resources Inventory Committee 1997). At each stop, we listened for 2 minutes. If no Northern Goshawks or other hawks were heard, we played the taped calls for 20-30 seconds and then listened for another minute, and repeated this three times in different directions. If a Northern Goshawk nest was located, nest and habitat parameters were recorded.

INVENTORY RESULTS

Williamson's Sapsucker

Six Williamson's Sapsucker nests were found in 1999, bringing the total number of nests found in these inventories to 26 from 1996 to 1999 (Figure 1). Four of these nests were in previously used nest trees while two were in new trees. These new trees were near

Figure 1. 1996 to 1999 Williamson's Sapsucker observations and search areas in or near the part of their range in B.C. where they can be considered common.

previously used nests. No Williamson's Sapsucker nests were found in areas that were searched for the first time in 1999.

One of the new nest trees found in 1999 was a live spruce only 24 m from a cottonwood nest tree used in 1997 and 1998. However, the top half of the cottonwood tree had broken off between the 1998 and 1999 nesting seasons making it unsuitable for nesting in 1999. This spruce tree had at least 19 previous sapsucker nesting holes indicating that it had also been used sometime in the past for nesting. The other new nest tree was a dead spruce about 100 m from another active Williamson's Sapsucker nest in a larch, and about 300 m from a dead birch nest tree used in 1998 that had fallen down between the 1998 and 1999 nesting seasons. Again, this spruce snag was well used in previous years with at least 13 previous sapsucker nest holes in it. Since there are no particular marks on these birds allowing us to identify them as individuals, we do not know if these are the same pairs moving their nests from tree to tree in the same area from year to year, but I suspect they are.

Despite wide-ranging surveys conducted from 1996 to 1999, Williamson's Sapsuckers were only found in a limited geographical area east of the Okanagan Valley, west of Midway and within 40 km of the U.S. border. Elevation range of the records was from 1000 m to 1463 m with the majority of the records (85%) between 1000 m and 1250 m. Sixteen of the 26 nest records were from the IDFdm1, and 10 from the IDFxh1. Williamson's Sapsuckers will also nest in the ICHmk1 where Lw is common (Gyug and Bennett 1995), but that part of their range is in TFL 8 Block 1, and was not part of these surveys.

Williamson's Sapsucker nest sites were either in western larch/Douglas-fir forests or in wet western larch/Douglas-fir/spruce/birch seepage areas and gullies. The majority (61%) of the nest were in sites wetter than mesic, with only 11% in sites drier than mesic. Other nest sites included:

- a young lodgepole pine/Douglas-fir forest with a few western larch veteran trees;
- within 15 m of the edge of the 100% tree-killed zone in the 12-year old Westbridge burn;
- a narrow ridge crest between an open south-facing dry grassy area and a north-facing Douglas-fir/western larch forest.

Slopes varied from flat to 58%, with 46% of 26 nests on slopes less than 10%, 23% on slopes from 11-20%, 8% on slopes from 21-30% and 23% on slopes from 41-58%. On slopes of less than 30%, nests were on any and all aspects. On slopes of >41%, nests were only found on north and west aspects (270 and 320 degrees). On slopes this steep in the IDFdm1 and IDFxh1, most south-facing aspects are very dry and non-forested and are poor growing sites for western larch.

In all, 26 Williamson's Sapsucker nests have been discovered during this inventory from 1996-1999 in 18 different nest trees as follows:

- 3 nests found in 1996,
- 8 nests found in 1997,
- 4 re-used trees and 5 newly discovered nest trees in 1998
- 4 re-used trees and 2 newly discovered nest trees in 1999.

Overall, Williamson's Sapsucker nests were most commonly (65%) found in very large (70-118 cm dbh), live western larch typically with broken or dead tops. Almost all these larch trees were veterans of multiple fire events and showed burn scars at the base. The next most common nesting tree species (11%) was dead birch (26-33 cm dbh). Two nests were found in large (45-63 cm dbh) spruce, one in a live black cottonwood (96 cm dbh) was used in successive years. There was one occurrence each of dead western larch (70 cm dbh) and dead ponderosa pine (70 cm dbh). Height of nests in live western larches was typically very high with an average tree height of 28.0 m (range 23-36 m) and average nest height of 18.5 m (range of 9.5-30 m). Height of nests in dead birch was typically much lower with snag heights of 11-20 m and nest heights of 5-7 m.

Almost all nest trees used by Williamson's Sapsuckers could be seen to have many sapsucker-sized (either Red-naped or Williamson's) nest holes in them. These are often termed "condominium trees". Three Lw were used for nesting 3 years in a row. Other nest trees were not necessarily used every year. Successive use was seen in 3 Lw for 3 years in a row. One other Lw was used in 1997, and not again until 1999. We know that 2 spruce trees used for nesting in 1999 were not used in 1997 or 1998 since we walked by these trees in both 1997 and 1998 without noting any nest use. Each of these trees had many sapsucker holes in them indicating that they had been used for many years prior to 1997.

Overall density of occupied Williamson's Sapsucker nests appears to be low even in the best habitat we have surveyed in the area. In 1997, 3 nests were found in Woodlot 411-1, another adult was drumming in the eastern part of the woodlot near Johnstone Creek, and one adult was heard drumming northeast of the woodlot in the vicinity of the nest found in 1996. This would make for five possible nesting pairs in an area of about 600 ha. In 1998, 4 nests were found in a 500-ha area including most of Woodlot 411-1 surveyed on June 23. In 1999, 3 nests were found, and one additional adult male seen and heard drumming on 2 separate days in a 414-ha area of Woodlot 411-1. This additional male did not seem to be associated with any nest in the search area, but there may have been a nest outside the search area. Nesting density was estimated at 1 per 120 ha in 1997, 1 per 125 ha in 1998, and 1 per 138 ha in 1999. Mean nest density for the 3 years was 1 per 127.7 ha or 0.78/km².

Based on woodlot cruise data, there are only 0.4 large larch (65 cm dbh and greater) per ha in Woodlot 411-1 at Johnstone Creek although density in the center of the woodlot is probably closer to 2/ha (George Delisle, pers.comm.). Many or most of these appear to be suitable nesting trees for Williamson's Sapsucker since they were left behind as cull trees when the area was originally logged in the 1950's and have been purposely retained for wildlife use under management of the area as a woodlot for the past 15 years. This appears to be some of the most suitable Williamson's Sapsucker habitat in the entire area.

Even though the density of potential nesting trees in Woodlot 411-1 appears to be very low, it still is probably higher than in most other areas that we examined. Johnstone Creek is at the center of the where this subspecies is common in Canada, and these population densities of 0.78 Williamson's Sapsucker nests/km² are probably not repeated anywhere else in Canada, excepting perhaps in portions of Tree Farm Licence 8 at Ingram Creek, and perhaps areas of Tree Farm Licence 15 that were not covered in these surveys.

Woodpecker Nests

Eight other species of woodpeckers and sapsuckers were found in the areas searched from 1996 to 1999 with some nests found for each species except Downy Woodpeckers. Nineteen woodpecker nests were found in 1999 bringing the total to 105 nests for which we have collected data from 1996 to 1999. Twenty-six of these nests were Williamson's Sapsucker nests. Red-naped Sapsucker has been the most common nesting species found with 59 nests, followed by Three-toed Woodpecker (6 nests), Northern Flicker (5 nests), Hairy Woodpecker (4 nests), Pileated Woodpecker (3 nests), and Black-backed Woodpecker and Lewis' Woodpecker (1 nest each). The Lewis' Woodpecker nest was found in 1997 in the Westbridge Burn of 1986, and was described in Gyug (1997). A pair of Lewis' Woodpecker were seen again in this same area in 1999 although they were absent from that site in 1998.

Red-naped Sapsuckers preferred aspen and birch as nesting trees (47 of 59 nests). The majority of the aspen used for nesting were live trees (26 of 32 nests) with a mean dbh of 38 cm (range 18.5-60 cm). The majority of birch used for nesting were dead (11 of 15 nests) with a mean dbh of 33 cm (range 22-49 cm). Other trees used were live western larch (5), dead Douglas-fir (3), dead western larch (1), dead ponderosa pine (1), live alder (1), and live spruce (1).

Nineteen nests of woodpeckers other than sapsuckers were found: 5 were found in live aspen, 4 in dead aspen, 5 in live western larch, 3 in dead western larch, 2 in dead Douglas-fir, and 1 in a dead ponderosa pine. No woodpecker or sapsucker nests were found in lodgepole pine trees, even though these were among the common trees in many of the areas sampled.

Northern Goshawk

Northern Goshawks were only found in 2 of the 6 areas surveyed in 1999. The nest from previous years in Woodlot 1468 (Nicholson Cr.) was used again in 1999 where we found 2 fledged young and 1 adult in the vicinity of the nest on July 14th, 1999. We could not find the nest in the vicinity of A42639C (Volcanic Creek) but did hear one goshawk call from north of the areas of the proposed blocks. We could not locate the bird on subsequent searching.

The location of the nest in Woodlot 1468 is already known to B.C. Env't. and the woodlot operator. The nest was 9 m up on a branch beside the trunk in an apparently healthy Douglas-fir of 41.5 cm dbh. It was on a mesic site (Site Series 01) at 975 m elevation in the IDFxh1 on a gentle (14%) north-facing slope. The forest cover label for the area was FL 6306-18, although the canopy closure seemed to be considerably below 60% because of more recent thinning in the area.

No goshawks were found in the vicinity of CP117-2, Mohr Cr. where a Red-tailed Hawk nest was found. No goshawks were found in the vicinity of Small Business TSL A48486-1, CP 5G-2 in TFL 8, or in the vicinity of Skeff Creek (CP 285 and the already-harvested CP 176). Timber harvesting of CP176 at Skeff Creek included the areas where goshawk nests were found in 1995 and 1996 and was adjacent to the area where they were found in 1997. Goshawks may have left the area because of timber harvesting.

SPECIFIC AREA RECOMMENDATIONS

Pope and Talbot

CP 285 and CP 176 Skeff Cr.

The Northern Goshawks that nested in the area from 1995 to 1997 were not found in 1999, and based on discussions with layout crews in the field, were probably not there in 1998 either. CP176 was logged in 1998, in the areas used for nesting in the three previous years. This logging may have contributed to the abandonment of the area by Northern Goshawks.

CP 269-4 Sidley Mt.

The Williamson's Sapsucker nest tree found in 1997 was used again in 1998 and 1999. This tree has been placed within a Wildlife Tree Patch in the proposed cutblock.

CP 301-2 Ripperto Cr.

No Williamson's Sapsuckers found. The entire area was searched. There were no Williamson's Sapsucker nesting trees found.

CP 315-1, -2 Ed James Cr. (Figure 2)

No Williamson's Sapsuckers found, however there were likely nest trees that could have been used in the past, and may again be used in the future.

Block 315-1 has many options for Wildlife Tree Patches, particularly in the northern part of the proposed block where there are a number of veteran Lw trees. Any WTPs here need to be established around condominium trees with sapsucker-sized nest holes (3-5 cm diameter), and next around groups of veteran Lw if there is any remaining WTP area to be designated.

The recommended WTP in 315-2 is around a group of 4 Lw vets (77-89 cm dbh) at NAD83 348700 5446330 (Fig.2). The trees have been flagged with orange "Wildlife" flagging. They are unique in the block because they appear to be some of the very few vets that survived the last fire event. They are in a fairly tight grouping (20-m diameter includes the 4 trees) sandwiched by a shallow-soiled rock outcropping to both the north and the south and would form an ideal WTP. Other candidate Lw wildlife trees in the block are nearer the stream at the south end of the block, and may be considered for individual retention.

Tree Farm Licence 8, CP 5G-2 Old Camp Road

No Northern Goshawks were found in the vicinity.

Weyerhaeuser

CP 117-2 Mohr Cr.

The raptor nesting in a seedtree in the already-harvested block was a Red-tailed Hawk with 2 still flightless young sitting out on a branch on July 14th 1999.

Figure 2. Wildlife Tree Patch recommendations for Pope and Talbot CP315-2 and SBFEP TSL A49377-2, Ed James Cr.

Small Business Forest Enterprise Program

A42639C Volcanic Creek

There has been a known Northern Goshawk nest in this area in the past. There were no goshawks in the proposed blocks on July 14th or 15th 1999. However, one call was heard to the north of the blocks, so that goshawks may still be nesting in this general area.

A48486-1, Rock Creek

The Williamson's Sapsucker nest tree used in 1997 was not used in 1998 or 1999 but a Wildlife Tree Patch has been placed around it.

The Northern Goshawk that was in residence in 1998 was not found on 2 separate visits in 1999.

A58927-1 and -2 Rock Creek

The Williamson's Sapsucker nest found near the blocks in 1998 was not used in 1999, and is not in an area that is likely to be harvested, anyway. No Williamson's Sapsuckers were found in a thorough search of the two blocks. This stand still has a large portion of it with a fine legacy of Lw veteran trees, and the potential for Williamson's Sapsucker nesting is high. Any harvest should take the existence of these vets into account and find ways to save most from harvest. WTPs need to be placed around any condominium Lw trees found within the blocks.

A49395-1 and -2 Ripperto Creek

No Williamson's Sapsuckers found. The entire area was searched. There were no nesting trees found that would likely be presently used by Williamson's Sapsucker.

A49377-2 (Figure 2)

No Williamson's Sapsuckers were found.

There is an Lw snag condominium tree in the Northeast Corner of the Block north of the road and only 20m from the boundary (UTM NAD83 approx 345200 5548700). It is a dead Lw, broken off at 23m ht with at least 27 woodpecker and sapsucker nest holes in it. The minimum necessary WTP no work zone needs to be put around this snag. If total WTP area is an issue, then the WTP in the middle of the southern boundary of the block should be dropped since it has already been high-graded in the past and is of much less value than this WTP would be.

Woodlots

Woodlot 478

The Williamson's Sapsuckers nest tree found in 1997 was used again in 1998 but the top of the Cottonwood tree had fallen off before the 1999 nesting season. The pair appear to have moved to another much used condominium spruce wildlife tree 24m to the Northeast. This wildlife tree is on a hummock in a streamside marsh, and is not likely to be logged. However, if logging is to be done in the area, this should be part of a riparian management zone and included in a Wildlife Tree Patch.

Woodlot 411-1

Eleven Williamson's Sapsuckers nests have been found in or immediately adjacent to this woodlot over a 4-year period. This woodlot probably has one of the highest densities of nesting Williamson's Sapsuckers in the province with one pair per 128 ha (see Williamson's Sapsucker Results). The Woodlot operator should be encouraged to continue the practices of identifying and marking high value wildlife trees to avoid harvesting them.

Density of cavity-nesting birds in general also seems to be very high in this woodlot. Nests of Pileated Woodpeckers, Red-naped Sapsuckers, Hairy Woodpeckers, Three-toed Woodpeckers and Northern Flickers were also found. Other cavity-nesters that probably nest there based on our observations include Northern Pygmy-Owl, Brown Creeper, Mountain Chickadee, and Red-breasted Nuthatch.

Most of the woodlot seems to have been high graded in the past, and some of it has been more recently logged. However, the high-grading in the past seems to have left a lot of the highest value wildlife trees--particularly the large live western larch with obvious defects (broken top, dead top, basal scars, conks and/or multiple woodpecker holes). These large western larches are usually veteran trees of multiple fire events. One cut larch stump showed fire scars from four past fires at intervals of about 70 yrs, 24 yrs and 17 yrs.

Woodlot 1468

One Northern Goshawk nest was found, in the same tree as previous years. The Woodlot Operator is aware of this nest and has marked the tree as a Wildlife Tree. He has been able to do some understorey thinning of snow-pressed Fd in the area in the non-breeding season without apparently unduly affecting the use of this nest.

MANAGEMENT CONCERNS and RECOMMENDATIONS

Williamson's Sapsucker appears deserving of its blue-listed status because of their very limited geographic range in Canada, their low estimated numbers even within that range, and their apparent dependence on very large western larch in this area (this study, Cannings et al. 1987, Gyug 1996, Gyug 1997, Gyug 1998, Gyug and Bennett 1995).

Large, live broken-top western larch appear relatively common only in those areas where Williamson's Sapsuckers have been found nesting even within their range as mapped on Figure 1. For management purposes, this range should be enlarged slightly, and large defective larch need to be targeted as the centers of any proposed Wildlife Tree Patches in this area. Any timber harvest proposals in this area must target "condominium" larch trees for Wildlife Tree Patches first. If condominium larches are not present, then the most likely candidates for this status (live broken or dead top larches) will be the target for WTPs. The Wildlife Tree Guidelines for Boundary Forest District for the IDFxh1, IDFdm1, ICHmk1 and MSdm1 need to be rewritten when they come up for review in November 1999 to take this into account in the decision keys in the Appendix.

Nesting habitat in many places even within the range where they are relatively common has already been negated by previous high-grading of large western larch. Commercial cutting of large western larches on an opportunistic basis should not be allowed in this particular area. Cutting for firewood should be discouraged. Some of the area is unsuitable because they are immature forest types with no remaining veteran trees. On sites where large western larch are not

found in this area, sites with birch or large cottonwood should be targeted for Wildlife Tree Patches.

Williamson's Sapsucker inventory must begin in Tree Farm Licence 15 and Tree Farm Licence 8, Block 1 since this inventory only covered areas in the provincial forest outside of Tree Farm Licences. These TFL's account for 50% of the Williamson's Sapsucker nesting range, and contain large amounts of suitable habitat. Recent, large-scale timber harvesting in the southern portion of TFL8 Block 1 may already be impacting Williamson's Sapsucker populations.

In 2000, the 15 remaining Williamson's Sapsucker nest trees should be checked for re-nesting. All the most likely Woodlots and planned Cutting Permits in Forest Licence areas were inventoried in 1996-99 so that there is no backlog of areas to be checked. Rechecking nests and inventorying any new Cutting Permit areas within the Williamson's Sapsucker range in Boundary Forest District should require 8 field days by a crew of two. Any inventory to be undertaken within Tree Farm Licences or Penticton Forest District would be additional to this. Based on the number of present proposals within Williamson's Sapsucker range in these TFL's, inventory would require about 6 field days by a crew of two in TFL 15 and another 6 days in TFL 8.

Northern Goshawk inventories would be in addition to these estimates. Since no basic inventory of Northern Goshawks has been started done in these areas, the amount devoted to Northern Goshawk inventory, even on a reconnaissance level, could take an entire field season. At a minimum, the 5 areas known to hold goshawks in the past would require 5 crew field days to revisit.

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