

Okanogan and Wenatchee National Forest
Birds and Burning
Progress Report 2002



checking a Williamson's sapsucker nest at Finley

John Lehmkuhl, Principal Investigator
Kent Woodruff, Field Coordinator/Data Steward
Maryellen Haggard, Woodpecker Protocol Leader
John Lindsey-Juelson, Songbird Protocol Leader
Dan Harrington, Field Crew
John Jakubowski, Field Crew
Ray Robertson, Field Crew
Steven Bondi, Field Crew

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Birds and Burning Study **Progress Report 2002**

Location: Okanogan and Wenatchee National Forests, Methow Valley Ranger District, northcentral Washington.

Purpose: This study is part of a seven state investigation to determine how avifauna respond to prescribed fire treatments in ponderosa pine dominated forests. See Joint Fire Sciences Program, Proposal # 01-1-3-25: *Prescribed fire strategies to restore wildlife habitat in ponderosa pine forests of the Interior West [Saab, Kotliar, Block]* for a more detailed purpose statement.

Partners: Pacific Northwest Research Station, Wenatchee Forestry Sciences Lab, and the Okanogan & Wenatchee National Forest, Methow Valley Ranger District.

Study Area Description: The Okanogan-Wenatchee project area encompasses three paired study units for a total of six units; Ramsey (RY) and Tripod (TD), Little Buck (LK) and Finley (FY), Mills Flat (MT) and Hunter (HR)/Zwar (ZR) [noted as Hunter-Zwar (HZ) in tables below for the purpose of comparison]. All study units are located within ponderosa pine-dominated, dry, mixed-conifer forest in northcentral Washington east of the Cascade Range.

Understory vegetation is a variable mixture of grasses, forbs, and shrubs. Dominant plant species include bluebunch wheatgrass, pine grass, arnica, spirea, pachistima, arctostaphylos, bitterbrush, snowberry, rose, ceanothus, serviceberry, and chokecherry.

Topography is hilly, rather steep slopes, with rocky outcrops and incised drainages. Slope averages measured at nest sites ranged from 19-47%.

Elevation ranged from 1840 to 5600 feet across the study area. Table 1 shows the elevation extremes for each unit.

Table 1. Elevation ranges (feet) for each study unit in the Okanogan-Wenatchee study area.

Unit	Low elevation	High elevation
Ramsey	3180	5600
Tripod	3810	5420
Finley	3210	4720
Little Buck	3040	4480
Mills Flat	2200	3010
Hunter/Zwar	1840	3260

Past management has included some thinning, grazing, or fire in all the units, although none of the units were altered substantially from pre-European conditions (i.e., forest

cover and understory vegetation is similar to historic conditions). However, none of the units could be considered pristine or unmanaged.

Methods

Methods generally follow those outlined in the Joint Fire Sciences Program, Proposal #01-1-3-25: *Prescribed fire strategies to restore wildlife habitat in ponderosa pine forests of the Interior West* [Saab, Kotliar, Block]. Otherwise, see below.

Point Count Surveys

Point count surveys took place from 29 May through 2 July. Each study unit contained 20-point count stations placed approximately 250 m apart. Stations were located in open and closed canopy cover in proportion to the area of those cover strata in each unit. At each point, the observer recorded for 5 minutes all birds detected audibly or visibly within the stand. Birds were recorded within 7 distance categories (0-10m; >10-25m; >25-50m; >50-75m; >75-100m; >100m; F [flyover]). Three surveys at each station were conducted within 6 hours after the dawn chorus for a total of 360 station-visits.

Nest Surveys and Monitoring

Formal nest surveys were conducted for cavity-nesting birds from 8 May through 20 June. A complete census of cavity nests was attempted by searching 200m-wide belt transects throughout each study unit for signs of cavity-nesting bird activity. Each transect was walked once, and start and stop times for each walk were noted. Established nests were monitored according to the BBIRD field protocol, as time allowed, every 3 to 4 days to ascertain the nesting stage and nest success. We used both bird behavioral clues and a treetop-peeper (video camera) to aide in nest monitoring.

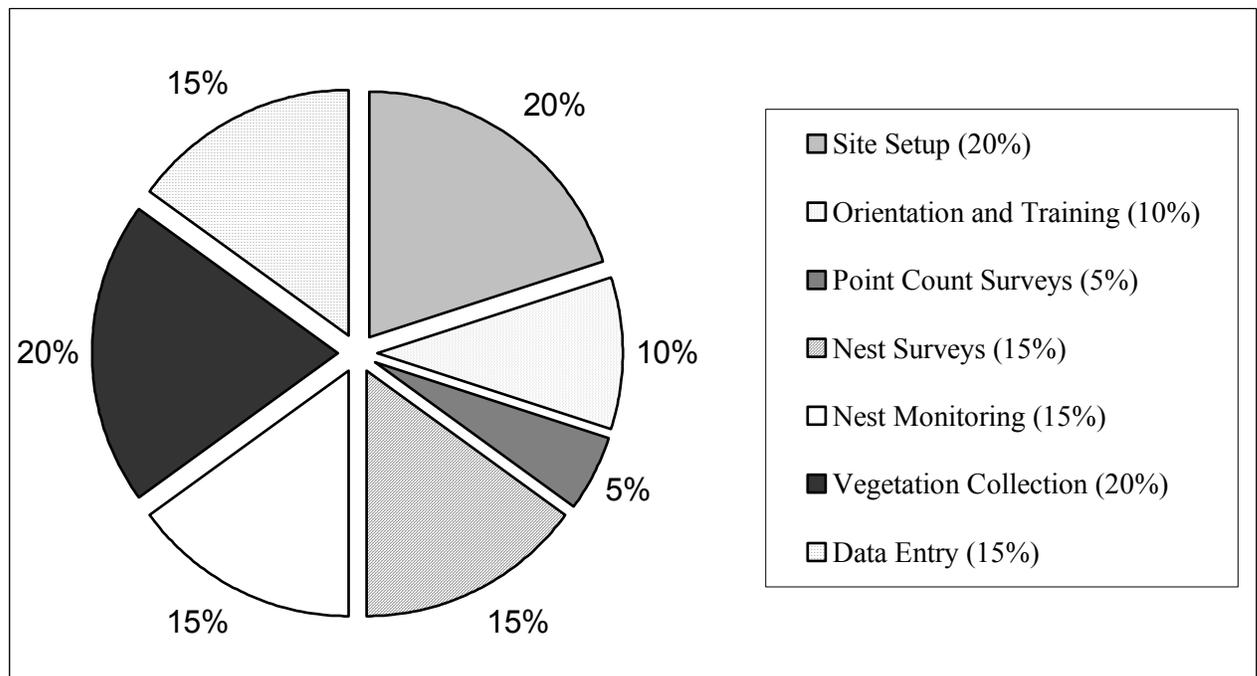
Vegetation

Vegetation data were collected from 15 July through 17 September. Vegetation measurements were taken at nest sites and random sites (point count stations). Measurements included overstory cover, ground cover, stem counts, snags, trees, and downed wood. In addition, for our units, we included a measurement of percent ground cover that was estimated at each circular plot. For percent ground cover, the major plant species were identified and then cover estimated on the Daubenmire scale (1: \leq 5%; 2: 5-25%; 3: 25-50%; 4: 50-75%; 5: 75-95%; 6: 95-100%).

Preliminary Results and Discussion

The Okanogan-Wenatchee study area featured seven very diligent crewmembers that accomplished 3600 miles driven, 1450 miles walked, and 5,000 hours spent in the field under adverse conditions (e.g. 95° F, or at time 0300). With many diverse tasks efficiency was essential (Fig. 1).

Figure 1. Time allocation for the birds and burning project on the Okanogan-Wenatchee Forest during the 1st year of pre-fire data collection.



Point Count Surveys

Prior to conducting point count surveys we used practice tapes, office review, and time in the field to familiarize the crew with local birdcalls and songs. In addition we trained for estimating bird distance through practice point counts surveys. Three point count surveys were conducted at each station between 29 May and 2 July. The dates for each visit were:

- Visit 1 between 29 May to 4 June
- Visit 2 between 10 June to 13 June
- Visit 3 between 26 June to 2 July

All surveys were done between 4:30 am and 10:30 am. Fifty-six bird species were identified during point count surveys (Table 2). The 4,078 bird detections were fairly evenly distributed among the 6 study units (Table 3). The 3 most abundant birds recorded on all study units were western tanager, red-breasted nuthatch, and chipping sparrow. Although not required in the regional protocol, we included a third point count visit. It appears that a third point count contributed to a clearer picture of the changes in territorial singing across the breeding season. Eight of the 24 most commonly detected species (33%) had the highest number of detections on the third visit (late June – early July), while nine species (38%) had significantly fewer detections by the third visit (Table 4).



 Table 2. Bird species recorded during point count surveys conducted in spring 2002, the 1st year of pre-fire data collection, on the Okanogan-Wenatchee study area.

Common Name	Scientific Name	AOU Code
American Kestrel	<i>Falco sparverius</i>	AMKE
American Robin	<i>Turdus migratorius</i>	AMRO
Black-billed Magpie	<i>Pica hudsonia</i>	BBMA
Brown-headed Cowbird	<i>Molothrus ater</i>	BHCO
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	BHGR
Brown Creeper	<i>Certhia americana</i>	BRCR
Blue Grouse	<i>Dendragapus obscurus</i>	BUGR
Cassin's Finch	<i>Carpodacus cassinii</i>	CAFI
Calliope Hummingbird	<i>Stellula calliope</i>	CAHU
Cassin's Vireo	<i>Vireo cassinii</i>	CAVI
Chipping Sparrow	<i>Spizella passerina</i>	CHSP
Clark's Nutcracker	<i>Nucifraga columbiana</i>	CLNU
Cooper's Hawk	<i>Accipiter cooperii</i>	COHA
Common Nighthawk	<i>Chordeiles minor</i>	CONI
Common Raven	<i>Corvus corax</i>	CORA
Dark-eyed Junco	<i>Junco hyemalis</i>	DEJU
Dusky Flycatcher	<i>Empidonax oberholseri</i>	DUFL
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	EVGR
Golden-crowned Kinglet	<i>Regulus satrapa</i>	GCKI
Gray Jay	<i>Perisoreus canadensis</i>	GRAJ
Gray Flycatcher	<i>Empidonax wrightii</i>	GRFL
Hammond's Flycatcher	<i>Empidonax hammondii</i>	HAFL
Hairy Woodpecker	<i>Picooides villosus</i>	HAWO
Hermit Thrush	<i>Catharus guttatus</i>	HETH
House Wren	<i>Troglodytes aedon</i>	HOWR
Lazuli Bunting	<i>Passerina amoena</i>	LAZB
Mountain Chickadee	<i>Parus gambeli</i>	MOCH
Mourning Dove	<i>Zenaida macroura</i>	MODO
Nashville Warbler	<i>Vermivora ruficapilla</i>	NAWA
Northern Flicker	<i>Colaptes auratus</i>	NOFL
Olive-sided Flycatcher	<i>Contopus borealis</i>	OSFL
Pine Siskin	<i>Carduelis pinus</i>	PISI
Pileated Woodpecker	<i>Dryocopus pileatus</i>	PIWO
Pygmy Nuthatch	<i>Sitta pygmaea</i>	PYNU
Red-breasted Nuthatch	<i>Sitta canadensis</i>	RBNU
Ruby-crowned Kinglet	<i>Regulus calendula</i>	RCKI
Red Crossbill	<i>Loxia curvirostra</i>	RECR
Rock Wren	<i>Salpinctes obsoletus</i>	ROWR
Red-tailed Hawk	<i>Buteo jamaicensis</i>	RTHA
Ruffed Grouse	<i>Bonasa umbellus</i>	RUGR

Common Name	Scientific Name	AOU Code
Rufous Hummingbird	<i>Selasphorus rufus</i>	RUHU
Spotted Towhee	<i>Pipilo maculatus</i>	SPTO
Stellar's Jay	<i>Cyanocitta stelleri</i>	STJA
Swainson's Thrush	<i>Catharus ustulatus</i>	SWTH
Townsend's Solitaire	<i>Myadestes townsendi</i>	TOSO
Townsend's Warbler	<i>Dendroica townsendi</i>	TOWA
Violet-green Swallow	<i>Tachycineta thalassina</i>	VGSW
Warbling Vireo	<i>Vireo gilvus</i>	WAVI
White-breasted Nuthatch	<i>Sitta carolinensis</i>	WBNU
Western Bluebird	<i>Sialia mexicana</i>	WEBL
Western Tanager	<i>Piranga ludoviciana</i>	WETA
Western Wood-Pewee	<i>Contopus sordidulus</i>	WEWP
White-headed Woodpecker	<i>Picoides albolarvatus</i>	WHWO
Williamson's Sapsucker	<i>Sphyrapicus thyroideus</i>	WISA
Wilson's Warbler	<i>Wilsonia pusilla</i>	WIWA
Yellow-rumped Warbler	<i>Dendroica coronata</i>	YRWA

Table 3. Total detections of bird species on each of the 6 study units on the Okanogan-Wenatchee study area during point count surveys spring 2002. Three visits were made to 20-point count stations per study unit.

Species	Unit Pairs								Grand Total
	RY ^b	TD ^c		FY ^b	LK ^c		MT ^b	HZ ^c	
Western Tanager	85	77		88	76		82	78	486
Red-breasted Nuthatch	43	56		67	154		85	44	449
Chipping Sparrow	59	48		50	61		66	94	378
Mountain Chickadee	55	52		52	65		53	69	346
Pine Siskin	60	35		27	18		72	76	288
Yellow-rumped Warbler	71	64		51	51		13	25	275
Dusky Flycatcher	35	46		30	39		20	30	200
Dark-eyed Junco	17	14		37	29		46	41	184
Townsend's Solitaire	24	11		26	48		33	19	161
Cassin's Vireo	7	17		10	18		21	34	107
Hammond's Flycatcher	39	15		13	24		7	3	101
American Robin	17	7		34	20		6	8	92
Cassin's Finch	14	5		12	10		14	24	79
Gray Flycatcher	11			7	18		22	13	71
Red Crossbill	20	9		4	6		9	21	69
White-breasted Nuthatch	8	9		12	18		10	4	61
Ruby-crowned Kinglet	8	34		2	7		1	6	58
Northern Flicker	5	3		8	8		11	17	52
Common Raven	10	12		11	12		6		51
Brown-headed Cowbird	1	8		2	3		11	24	49
Swainson's Thrush	4	23		2	17		1		47
Unknown Empidonax	15	4		1	4		11	3	38

Species	RY ^b	TD ^c		FY ^b	LK ^c		MT ^b	HZ ^c		Grand Total
Blue Grouse	5	1		5	3		5	13		32
Spotted Towhee	5						8	17		30
Hairy Woodpecker	3	1		9	5		6	3		27
Unknown Woodpecker	2	4		3	5		8	2		24
Clark's Nutcracker	2	1		5	3		6	6		23
Warbling Vireo	5	14						2		21
Williamson's Sapsucker	7	5		1	5		1	2		21
Western Wood-Pee-wee	2			1	1		4	12		20
Nashville Warbler	1			1				17		19
Brown Creeper	1			1	10		4			16
Common Nighthawk	1	9			1		3	2		16
Western Bluebird	1			6	1		2	5		15
Townsend's Warbler	2	6		2			2	2		14
Hermit Thrush	1	6		4						11
Pileated Woodpecker	1			1	1		7	1		11
Mourning Dove	4	1					1	4		10
Pygmy Nuthatch	3						4	2		9
Stellar's Jay				3	2			3		8
Unknown Hummingbird							2	6		8
House Wren				3			1	3		7
Calliope Hummingbird	3						1	2		6
Olive-sided Flycatcher	2							2		4
American Kestrel					3					3
Cooper's Hawk								3		3
Evening Grosbeak				2			1			3
Rock Wren	1			1	1					3
Wilson's Warbler				1			2			3
Gray Jay	1	1								2
Lazuli Bunting							1	1		2
Red-tailed Hawk	2									2
Ruffed Grouse		2								2
Unknown Sapsucker	1							1		2
Violet-green Swallow								2		2
Black-billed Magpie							1			1
Black-headed Grosbeak								1		1
Golden-crowned Kinglet		1								1
Rufous Hummingbird		1								1
Unknown Grouse								1		1
Unknown Thrush								1		1
White-headed Woodpecker								1		1
Grand Total	669	625		603	757		673	751		4078

^b burn units^c control units

Table 4. Total detections of the 24 most common bird species on all units per visit to the Okanogan-Wenatchee study sites during spring 2002.

Bird Spp.	Visit			Grand Total
	1	2	3	
WETA	118	171	197	486
RBNU	223	117	109	449
CHSP	122	124	132	378
MOCH	127	92	127	346
PISI	123	92	73	288
YRWA	108	88	79	275
DUFL	75	84	41	200
DEJU	53	63	68	184
TOSO	55	47	59	161
CAVI	42	47	18	107
HAFL	56	27	18	101
AMRO	38	27	27	92
CAFI	28	28	23	79
GRFL	28	25	18	71
RECR	7	24	38	69
WBNU	18	24	19	61
RCKI	30	19	9	58
NOFL	14	11	27	52
CORA	19	16	15	50
BHCO	15	15	19	49
SWTH	14	19	14	47
UNEM	8	18	12	38
BUGR	14	16	2	32
SPTO	11	9	10	30

Upon completion of the spring 2002 point count census, we noted some areas of potential improvement.

- It was difficult to determine the sex of some birds based on audible detections. For example, both male and female Red-breasted Nuthatches and Red Crossbills give call notes. Also, both sexes of many woodpecker species call and drum. If sex data is critical to the study then we must develop specific criteria for determining sex, or change the data to include song vs. call.
- We continue to question the ability of our trained birders to accurately determine distance out as far as 75 and 100+ meters consistently. Despite best efforts and substantial training and practice, our confidence in determining distance to the degree specified by the protocol is low. In order to strengthen the dataset the distance bands could be changed to 10, 25, 50, + (beyond 50).
- Finally, although every effort was made to avoid double counting individual birds, some double counting was unavoidable where birds were recorded in the 100+ m category. It seems that counting all individuals every time would be

more efficient than trying to guess on the location, or the 100+ m category could be eliminated.

Nest Surveys and Monitoring:

We covered 68,100 meters of transects within the 6 study units. Approximately 75% of the transect distance in each unit was searched; but, in practice nearly 100% of the area was searched while traversing the area for nest searches and point counts. Next year we hope to cover all units entirely by getting an earlier start and with improvements in efficiency. In our searches we gathered information on 68 nests of woodpeckers and western bluebirds. We collected supplemental information on 26 nests of secondary cavity-nesters including Mountain Chickadee (8), Red-breasted Nuthatch (6), Pygmy Nuthatch (4), European Starling (1), and White-breasted Nuthatch (7).

We monitored nests when we were able to verify nesting behavior over multiple visits. Fifty-four nests of 8 cavity-nesting species were monitored (Table 5). The most abundant cavity nester was Williamson's Sapsucker with 19 nests. This species occurred in all study units. Northern Flicker and Hairy Woodpecker were also fairly common with 11 and 10 nests, respectively. Pileated Woodpecker and White-headed Woodpeckers were rare. We documented only 1 nest for each of these species. Black-backed Woodpeckers were observed on a few occasions in the study units, but no nests were located. This species may increase following prescribed burning. Overall nest success was high with 51 out of the 54 nests fledging at least one young. Early nest attempts that failed may have been missed due to our start date for nest searching on May 8. Next year, nest searching will begin earlier in hopes of finding nesting pairs in early courtship and cavity excavation phase. Thirty-three (61%) nests monitored this year were not found until nestlings were present.

Ponderosa pine was the preferred nest tree for all cavity-nesters except Red-naped Sapsucker which nested only in quaking aspen. Aspen trees were available in draws that occurred throughout the study units. In both cases, the Red-naped Sapsucker nests were found near or at the edge of the unit boundary, low on the slope and coincidentally near roads. As noted in previous studies, the diameter breast height (dbh) of nest trees was ≥ 25 cm, ranging from 26 cm to 108 cm dbh for all species. Red-naped sapsucker nested in the smallest diameter trees (mean dbh 30) and Lewis' Woodpecker nested in the largest diameter trees (mean dbh 68). Over $\frac{1}{2}$ of nests for Williamson's Sapsucker, Northern Flicker, Hairy Woodpecker, Lewis' Woodpecker and Western Bluebird were located in live trees or live trees with dead tops. These trees proved very important as nesting sites in our study area. Williamson's Sapsucker, Red-naped Sapsucker, Hairy Woodpecker and White-headed Woodpecker were most common in newly excavated cavities while Northern Flickers, Lewis' Woodpecker, and Pileated Woodpecker nested in old cavities (Table 6).

Hairy Woodpeckers, Lewis' Woodpeckers, and Western Bluebirds nested only in trees positioned in the upper and middle slope. Similarly, the majority of nest trees for Williamson's Sapsuckers and Northern Flickers were located in the upper and mid-slope (Table 7).

Table 5. Species and number of nests monitored in 2002, the 1st year of pre-fire data on the Okanogan-Wenatchee study area (c) = control, (b) = burn.

Species	Number of Nests ^a						Total Nests	Total Successful _b
	Tripod (c)	Ramsey (b)	Little Buck (c)	Finley (b)	Hunter-Zwar (c)	Mills Flat (b)		
Williamson's Sapsucker	5	4	4	1	3 (1)	2	19	18
Northern Flicker	1	0	2	2	4 (1)	2	11	10
Hairy Woodpecker	1	3	0	2	3	1	10	10
Western Bluebird	0	0	0	1	1	4 (1)	6	5
Lewis' Woodpecker	0	0	0	0	3	1	4	4
Red-naped Sapsucker	0	1	1	0	0	0	2	2
Pileated Woodpecker	0	0	0	0	0	1	1	1
White-headed Woodpecker	0	0	0	0	1	0	1	1
Total	7	8	7	6	15	11	54	51

^a All nests successful except for nest failures noted in parenthesis

^b Nest fledged at least one young

Table 6. Tree characteristics of nests monitored in 2002, the 1st year of pre-fire data on the Okanogan-Wenatchee study sites.

Species	Total Nests	Tree Species(%)			DBH(cm)		Decay Class(%) ^b				Tree Top Condition(%)			Tree Height(%)		Nest Height(%)		Cavity Orientation(%)				Cavity Age(%)		
		PIPO	PSME	Other ^a	Mean	Range	1	2	3	Live	Dead Top	I	F	BB	Mean	Range	Mean	Range	N	E	S	W	New	Old
Williamson's Sapsucker	19	84	11	5	66	31 to 108	16	32	5	47	53	15	32	26	15 to 35	16.3	4.5 to 30	28	11	39	22	95	5	
Northern Flicker	11	91	9		66	50 to 93	9	9	18	27	37	70	0	30	20.1	5 to 40	13.3	4 to 22		20	50	30	27	73
Hairy Woodpecker	10	80	10	10	49	27 to 66	20	10	20	50	60	10	30	18.1	1.9 to 22	12.5	1.3 to 19	20	30	50		90	10	
Western Bluebird	6	100			48	41 to 63			33	17	50	67	33	19	2.7 to 27	12.3	1.9 to 17	50	17	33			100	
Lewis' Woodpecker	4	100			68	41 to 91			25		75		25	75	22.4	17 to 29.5	16.3	10 to 20		25	25	50		100
Red-naped Sapsucker	2			100	30	26 to 32			50	50		50	50	15	10 to 20	10	6 to 14			50	50		100	
White-headed Woodpecker	1	100			58				100				100	9		5					100			100
Pileated Woodpecker	1	100			84				100			100		40		15					100			100

^a Other tree species include a Williamson's Sapsucker nest in a Scouler's Willow and a Hairy Woodpecker and Red-naped Sapsucker nests in Quaking Aspen trees.

^b Decay class characteristics described in Bull et al. 1997

Table 7. Nest-site characteristics of nests monitored in 2002, the 1st year of pre-fire data on the Okanogan-Wenatchee study sites.

Species	Nests	Aspect(%)				Slope (% slope)		Position(%)		
		N	E	S	W	Mean	Range	U	M	L
Williamson's Sapsucker	19	11	21	42	26	30	0 to 60	37	42	21
Northern Flicker	11	18	36	18	27	47	12 to 90	45	27	27
Hairy Woodpecker	10	20	20	30	30	39	20 to 68	50	50	
Western Bluebird	6	50	17	33		30	0 to 48	67	33	
Lewis' Woodpecker	4	50			50	46	40 to 50	100		
Red-naped Sapsucker	2	50			50	19	5 to 32			100
White-headed Woodpecker	1	100				25				100
Pileated Woodpecker	1	100				45				100
Overall	54	23	17	41	19	35	0 to 90	46	37	17

Nest searching in 2002 was very successful as the entire field crew developed a search image for prime woodpecker nesting habitat. Next season we anticipate finding more nests based on our expanded knowledge of woodpeckers and added time for nest searching. In addition to nest searching and monitoring, we foresee an opportunity next field season to incorporate a study of the pathology of trees/snags that woodpeckers are choosing as nesting sites versus what is available on the landscape (Paul Hessburg, Wenatchee FSL).

Vegetation Measurements

Vegetation measurements were completed at all 54 nest sites and at twelve of 120 random or point count station sites. Thirty-five woody species were recorded in stem counts or percent cover measurements (Table 8).

 Table 8. Woody vegetation recorded within the Okanogan-Wenatchee study area 2002, the 1st year of pre-fire data.

Common name ^a	Scientific name	Alpha Code ^b
Subalpine fir ^c	<i>Abies lasiocarpa</i>	ABLA
Douglas Maple ^c	<i>Acer glabrum douglasii</i>	ACGLD2
Mountain alder ^c	<i>Alnus incana</i>	ALIN2
Western Serviceberry ^c	<i>Amelanchier alnifolia</i>	AMAL2
Big Sagebrush ^c	<i>Artemisia tridentate</i>	ARTR2
Oregon Grape	<i>Berberis aquifolium</i>	BEAQ
Snowbrush Ceanothus ^c	<i>Ceanothus velutinus</i>	CEVE
Common Rabbit-brush	<i>Chrysothamnus nauseosus</i>	CHNA2
Red-Osier Dogwood ^c	<i>Cornus stolonifera</i>	COST4
Oceanspray ^c	<i>Holodiscus discolor</i>	HODI
Common Juniper ^c	<i>Juniperus communis</i>	JUCO6
Tamarack ^c	<i>Larix occidentalis</i>	LAOC
Oregon Boxwood ^c	<i>Paxistima myrsinites</i>	PAMY
Mock Orange ^c	<i>Philadelphus lewisii</i>	PHLE4
Shrubby Penstemon ^d	<i>Penstemon friuticosus</i>	PEFR3
Lodgepole Pine ^c	<i>Pinus contorta</i>	PICO
Ponderosa Pine ^c	<i>Pinus ponderosa</i>	PIPO
Quaking Aspen ^c	<i>Populus tremuloides</i>	POTR5
Black Cottonwood ^c	<i>Populus trichocarpa</i>	POTR15
Douglas-fir ^c	<i>Pseudotsuga menziesii</i>	PSME
Common Chokecherry	<i>Prunus virginiana</i>	PRVI
Bitterbrush ^c	<i>Purshia tridentata</i>	PUTR2
Greenflowered Wintergreen ^d	<i>Pyrola chlorantha</i>	PYCH
Squaw Current ^c	<i>Ribes cereum</i>	RICE
Prickly Current ^c	<i>Ribes lacustre</i>	RILA
Current ^c	<i>Ribes spp.</i>	RIsp
Woods' Rose ^c	<i>Rosa woodsii</i>	ROWO
American Red Raspberry ^c	<i>Rubus idaeus</i>	RUID
Thimbleberry ^c	<i>Rubus parviflora</i>	RUPA
Elderberry ^c	<i>Sambucus cerulea</i>	SACE3
Scouler's Willow ^c	<i>Salix scouleriana</i>	SASC
Buffaloberry ^c	<i>Shepherdia canadensis</i>	SHCA
White Spirea	<i>Spirea betulifolia</i>	SPBE2
Common Snowberry ^c	<i>Symphoricarpos albus</i>	SYAL
Huckleberry	<i>Vaccinium Spp.</i>	VAsp

^a We used the progress report from Saab and Dudley Jan 2002 and/or Hitchcock for common names

^b Refer to NRCS plants database from Montana FireMonWOFE for plant species Alpha codes

^c Plants tallied in stem counts

^d Subshrubs

Field season 2003 will require close coordination with fire planners to complete the NEPA analysis and field preparation necessary for burn implementation in 2004. We also plan to further focus efforts this year on collecting vegetation data at the remaining random sites and at new nest sites so that we may have a complete vegetation data set before prescribed burning begins.

The rate of progress doing the vegetation work was slower than anticipated, and we may not be able to complete all pre-treatment vegetation measurements during the 2003 field season before burning in spring 2004. We might have to eliminate some vegetation measurements at some or all the nest or random points in order to accomplish the pre-treatment work within time and budget constraints.

Figure 2. Peeping on the Methow Valley Ranger District.

