

NORTHERN GOSHAWKS  
IN THE  
MALHEUR NATIONAL FOREST  
EASTERN OREGON  
1992 TO 2011



(PHOTO BY C. SCHELZ)

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## INTRODUCTION

This report summarizes the data generated from a long-term effort to perform continued and consistent monitoring of goshawk nest sites on the Malheur National Forest in eastern Oregon from 1992 to 2010. This compilation is the product of personal field work in which data were collected in a manner that was consistent with the methods developed in 1992, the first year in which attempts to quantify variables in territory usage, habitat selection, yearly productivity, and other behavioral attributes of Northern Goshawk (*Accipiter gentilis*) began in the drier eastern forests of Oregon.

The contents of this manuscript consist of a narrative of the history of studies and methods as envisioned by researchers from Oregon State University and various public land management agencies, and the yearly field observations subsequently carried out by the author. This information includes the tracking of movement, productivity, and yearly occurrences of goshawk in their territories, along with other observations and studies that were added by the author (see History of Studies section). The first 3 years of this project were a collaborative effort incorporated into various master's degree programs (DeStefano et al. 2006). All data collected after 1995 was obtained purely by personal effort as a volunteer supplying yearly reports to the wildlife biologists on Malheur National Forest.

Rather than viewing this as an attempt to test hypotheses, this is a presentation of a long-term monitoring project, in the mold of classic natural history observations. This manuscript contains specific data and information from insights that hopefully will be gleaned to aid further investigations in this region of eastern Oregon, and may be of interest elsewhere. My intent is to have this body of observations and data available to future researchers and land managers who may benefit from these “historical” observations. Institutional memories are short, and with rapid personnel changeover and implementation of different and new computer systems, much of this history and information was being lost and not effectively transferred. Preservation of goshawk territories depends on observing what is happening “on the ground” to ensure that conservation guidelines are still being followed. Without adequate monitoring, how are we to know if those management policies put in place are operating as they were envisioned?

There are several study areas in the western range of the North American Goshawk that have maintained a long-term monitoring basis (see review in Squires and Kennedy 2006). In particular, the area that has generated the lion's share of studies and information has occurred in the southwest in northern Arizona under the tutelage and coordination of R. T. Reynolds out of the Rocky Mountain Research Station. For a comprehensive reference listing, visit the website [www.rmrs.nau.edu/wildlife/goshawk](http://www.rmrs.nau.edu/wildlife/goshawk), titled “Developing Effective Forest Management for Northern Goshawks and Their Food Web”. Another source of extensive information that would be beneficial to resource managers is a compilation of papers in “The Northern Goshawk: A Technical Assessment of Its Status, Ecology, and Management”, Michael L. Morrison, editor, Studies in Avian Biology No. 31, a publication of the Cooper Ornithological Society.

## HISTORY OF STUDIES

Results from several research projects in the late 1980s lent support to the perceived deleterious effects of human-caused fragmentation on the health of dwindling old growth structure on the western forests of the United States, and the possible destabilization of Northern Goshawk (*Accipiter gentilis*) populations (Bloom et al. 1986; Crocker-Bedford 1990; Crocker-Bedford & Chaney 1988; Kennedy 1988). These observations were instrumental in the subsequent listing of the goshawk as a Category 2 species under the Endangered Species Act. Squires and Kennedy (2006) have laid out the history of legal and administrative actions relative to the status and management of Northern Goshawks.

In 1992, several studies were initiated to ascertain the habitat and the health of goshawk in eastern Oregon (DeStefano & Meslow 1992, 1993). One of these study areas, in the Blue Mountain Region of eastern Oregon within the Bear Valley Ranger District (BVRD), Malheur National Forest, is the subject of the present report. The initial approach to finding goshawk territories in this area depended in part on the “historical nest sites” that were recorded in the public land agency (largely USFS) records. Many goshawk studies in the early 1990s were obliged to depend on nest data that were largely unmonitored from the initial discovery, and the disposition and use of these nest sites were found to be quite variable.

A pilot study to determine the status of goshawk populations in eastside forests was initiated via a cooperative agreement between Oregon Cooperative Wildlife Research Unit (OCWRU) at Oregon State University, Oregon Department of Fish and Wildlife, U.S. Fish and Wildlife Service, U.S. Forest Service (USFS), and the Center for Analysis of Environmental Change, OSU (DeStefano and Meslow 1992, DeStefano and Meslow 1993). The major objectives were to determine the status of goshawk in eastern Oregon and to examine goshawk habitat relationships in east-side forests with what was then considered a “long-term” (five to ten years) study. However, this original plan was abandoned because of a lack of funding; research was re-focused into 3 projects, each led by a Master’s degree candidate (Daw 1997; Desimone 1997; McGrath 1997). DeStefano et al. (2006) presents a summary and discussion of the results from these studies in the 1990s. One of these projects was completed solely on the BVRD: “Forest Structure in Post-fledging Family Areas (PFA) around Goshawk Nest Sites” (Daw 1997); while data was gathered at a few territories here to include in McGrath’s thesis. Another thesis project was initiated on BVRD at the same time by Karen Haines (who was then the wildlife biologist for BVRD) out of Boise State University. She was addressing the “Effects of Insect and Disease Induced Tree Mortality on Nesting Northern Goshawk” (Haines 1995).

From 1992 to 1994, two large land areas were surveyed (see section on Study Area below) using recorded goshawk alarm calls (see section on Survey Methods below). These are represented as Density Study Areas (DSA) Bear Valley East (9046 ha) and Bear Valley west (10,519 ha) (DeStefano et al. 1994a, Daw 1997, Daw and DeStefano 2001). Haines surveyed several areas adjoining the two DSAs in 1993, also via established protocols, with data collection completed in 1994. These areas are represented by Starr (4,980 ha), Aldrich (1,945 ha), Flagtail (1,970 ha), Fall (510 ha), and Canyon Creek (200 ha) (Figure 1.).

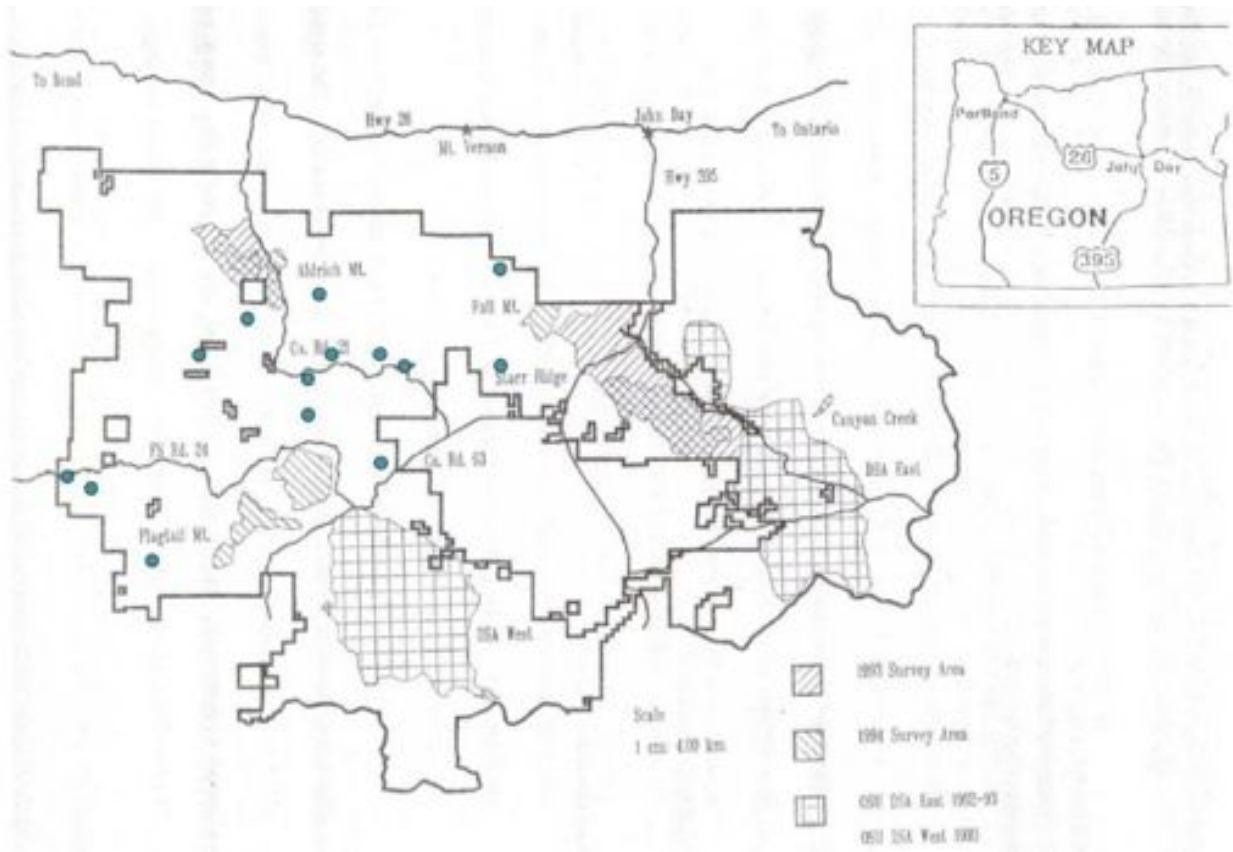
After working as a field technician on all projects from their inception, in 1995 I entered into a challenge cost-share contract (#06-95-04-064: an agreement between the Grant County Bird Club (author), the Malheur National Forest, and Oregon Cooperative Wildlife Research Unit (DeStefano)) to maintain and enhance the monitoring of goshawk territories in this area.

The initial 32 “core” territories surround Bear Valley itself have received the most consistent continuous monitoring. These being the ones discovered in 1992-1994 with initially only 50 known nest sites within these 32 territories. In subsequent years, the number of territories discovered greatly increased to over 200 nest sites within 53 territories. Many new nest sites were found by forest service personnel while doing general wildlife surveys (specifically, the eleven territories found during an environmental assessment of the Murderers Creek sub-watershed in 1996 that lie west of Bear Valley).

Since 1996, I have been conducting this monitoring work as a USFS volunteer. Because the USFS has been continually plagued by a lack of personnel and time constraints, I attempted to take on the monitoring of every one of these added sites; however, some outlying territories did not receive thorough coverage through the years as compared to those around Bear Valley proper. I have had intermittent help from a few unpaid volunteers (specifically in 1998 and 1999) with varying but largely underwhelming results. Since 2005, it is likely that not all of the nesting goshawk were located in subsequent years through 2010, especially in the western side of BVRD. My time for fieldwork diminished and field activities needed to be prioritized.

## **Study area**

The Bear Valley Ranger District (BVRD) of the Malheur National Forest is included within the Blue Mountain Bioregion in eastern Oregon, Grant County. Underlying strata reveal a complex geological history, with the derivatives of numerous Cenozoic volcanic events superposed on Mesozoic marine metasediments, resulting in highly fragmented biotic associations inhabiting the resultant soil profiles (Fremd, pers. com.). The landscape consists of predominately ponderosa pine (*Pinus ponderosa*) with about 25% of the area covered by islands of pole-sized lodgepole pine (*Pinus contorta*) and stands of mixed conifers including Douglas-fir (*Pseudotsuga menziesii*), white fir (*Abies concolor*), and western larch (*Larix occidentalis*). Small natural openings of scablands with sage and juniper and a few large wet and dry meadows are distributed throughout the area. Silviculturalists have employed partial cut timber harvest practices (e.g., over-story removal, group selection); and, clear cutting, while uncommon, was used in several areas of this forest in the past. The BVRD itself surrounds Bear Valley, a large (~23,500ha) open and relatively flat topographic feature providing abundant transition zones along its boundaries. While the overall topographic relief in the area ranges from 2,000 to 9,000 feet, within the area being monitored the elevation grades from 4790 feet along Canyon Creek to 6299 feet in the portion of the Strawberry Mountain Wilderness that forms the northern boundary.



**Figure 1:**

Systematically surveyed areas on Bear Valley Ranger District containing goshawk territories (hatch marks) and territories found since 1996 on west side of district (green circles). Modified from Haines (1995).

## SURVEY METHODS

The surveying protocols utilized were developed by Kennedy and Stahlecker (1993), and adapted to topographic conditions following Woodbridge (1992). Surveys of listening for early morning courtship vocalizations in February and March (Penteriani 1999) have established that goshawk are on site by March; however, nest searches were not initiated until the end of April-beginning of May. This was to guard against any critical disturbance during the courtship phase while ensuring the detection of the earliest nesting pairs for the year.

All extant and extinct nest sites were observed while quietly walking through the stands. Those nests occupied by incubating females were re-visited at least twice again during the breeding season to determine the success or failure of the goshawk pair, and to age the nestlings and fledglings. At those nest sites not occupied by a goshawk, the territory was searched via a “called” search, at a minimum of one more time prior to the fledging episode. This “called” search was started in mid to late May when adults are more aggressive in defense of their young (Joy et al. 1994; Kennedy & Stahlecker 1993, personal observ.). Generic taped conspecific alarm calls were broadcast through a megaphone (modified Realistic model 32-2030 coupled to a Sony walkman model WMA53) along a transect with calling stations spaced about 300m apart. In 2005, the locally recorded vocalizations recorded in 1995-1996 were utilized, broadcast at higher decibels via a large TOA megaphone (Model # ER-69W) attached to a ZEN digital mp3 player. The quality of these broadcasts was greatly improved relative to the rather garbled tape recordings used in the 1990’s. These transects incorporated the area of the nesting stands, the area between alternative nesting stands, and adjacent potential habitat attempting to survey a full Post Fledging Area (PFA) - suggested to be about ~170 ha on this study area (Daw 1997). These searches in many cases extended calling protocol up to 1km from the nest sites by searching adjacent drainages and/or potential mature forest habitats that surrounded these areas. This was specifically true in cases where the original nest site or cluster had been adversely impacted by logging activity, fire, or disease damage. While this was the procedural basis of the fieldwork, a reduced field schedule after 2004, forced some truncation of parameters while an effort to accomplish as much as possible was maintained (e.g., calling stations of the full PFA may not have occurred; a 2<sup>nd</sup> and 3<sup>rd</sup> visit to a territory may have been dropped).

Location of all nest sites found through the years has been documented with a succession of Global Positioning System (GPS) receiving units. In 1999, the “Garmin 12” proved to be a useful field tool. Successive newer generation devices were then employed, including migration to a Garmin 3+, followed by a Garmin 5 12-channel averaging unit, and so on. When first marked, a NAD-27 datum file was used, but in later years, the WGS-84 (“World Geodetic System”) was adopted and conversion routines were employed. When President Clinton directed the Department of Defense to turn off the GPS Selective Availability (SA) feature in 2000, I attempted to re-mark all nest trees to obtain a more accurate position with the greatly increased accuracy available to civilian users; however, these markers are only as good as the equipment available at the time. Due to the forest cover, it is difficult to receive satellites in some of these areas and some markers will have a wide margin of error. In any event, these data are permanently recorded in UTM or Lat/Long units in a topography-based software program (Maptech and Garmin MapSource) maintained personally and in the forest service archives, and can be corrected by future generations of investigators. These localities are separate and protected to be available only for valid research purposes.

In 2011, I re-visited and finalized all the nest tree measurements. As requested by the forest service personnel, all the trees were tagged (or noted as “no tag” if tree was gone or

locality not verifiable). These tags consist of a variety of shapes. Originally, a four-inch plastic sign was used but these all have deteriorated. A four-inch metal brown sign with a logo, that says “Wildlife Tree”, was applied to a portion of the trees and some of these still remain. The tags available in 2011 consisted of two types: a small aluminum 3”x 1” strip (like a military “dog tag”) or a circular round disc about the size of a quarter. These are more difficult to notice than the larger older signs. Personally, I have been opposed to marking “a nest tree”, in that it has an effect of limiting one’s field of perception. When entering a stand to search for nesting goshawk, one should look at *all* trees in the cluster; not just confining the search for one marked tree. That is the only way to discover all possible nests throughout the years. Goshawks seemingly are tenacious to the nest *cluster* not necessarily to *one nest* (Reynolds and Wight 1978, Speiser and Bosakowski 1987, Reynolds et al. 1994, Woodbridge and Detrich 1994, Reynolds and Joy 1998, Dewey et al. 2003).

Nests and associated territories found in survey blocks during the initial surveys of 1994 were assigned two categories- “systematically found” via unbiased calling protocol, and “non-systematically found”. “Non-systematically found” nest sites comprise nests discovered opportunistically incidental to timber cruising, or by nest searches in timber sale units, or during wildlife inventories in unique habitats (such as in designated old growth (DOG) units), or “historical” nest sites previously identified and relocated. However, differences in nest site characteristics between search methods were minor and, not surprisingly, probably unimportant biologically (Daw et al. 1998). The territories discovered after 1995 all fall into this latter category of “non-systematically found”, and in most part have received a less rigorous search pattern.

The use of “nest site” here is a subset of Postupalsky’s (1974) “breeding territory,” Steenhof’s (1987) “nesting territory,” and Reynolds et al.’s (1992) “nest area”. Some of these areas have only one nest used through the years, while others have established several alternative nests that are used in different years (“nest clusters” of Woodbridge and Detrich 1994). Terminology used describing the status of a territory corresponds to Postupalsky (1974) and Steenhof (1987) (Figure 2).

Productivity of nesting pairs was determined during two or three visits to the nests in late June and early July. Nestlings were counted immediately prior to or just post fledging. Nesting phenology dates were based on backdating from estimated weekly development of juveniles, based on plumage characteristics and fledging dates. Descriptions of goshawk development as described in Boal (1994) were the basis for determining the age of nestlings and the developmental intervals, using guidelines incorporating a 32 day incubation period and 38-40 day nestling phase (see Figure 3: Phenology charts calculated from 1994 to 2003). Productivity was calculated only for those territories with an observed and documented outcome. Due to time and personnel constraints, however, some years do not have any specific reportable productivity data.

## Figure 2: Terminology used describing the status of a territory

These terms are adapted from those of Postupalsky (1974) , Steenhof (1987), and USDI National Park Service (Alaska) raptor survey guidelines

**Uno = Unoccupied** or moved: A nesting territory where no bird was observed that showed an affinity for the territory during the breeding season. Investigators should spend a minimum of four hours at the territory during the incubation and nestling period to verify this determination.

**Occ = Occupied:** An occupied nesting territory where some evidence of breeding was observed but final breeding outcome could not be determined.

**S/F =** Occupied territory being monitored in that year *having observed incubation*; but, the final check occurred too late at end of breeding season (post fledging), and thus it could not be determined if nest was **successful or had failed** in some fashion.

**A = Active:** A nesting territory where adults were observed in area; flying / perching and giving a territorial vocal or behavioral response to the observer, but where breeding outcome was not determined (no actively used nests found).

**F = Failed:** An occupied nesting territory with a known outcome where breeding was attempted (incubation observed) but where no young reached 80% of fledging age, for whatever reason (e.g.; eggs destroyed or otherwise lost, eggs failed to hatch, or young hatched but died prior to fledgling).

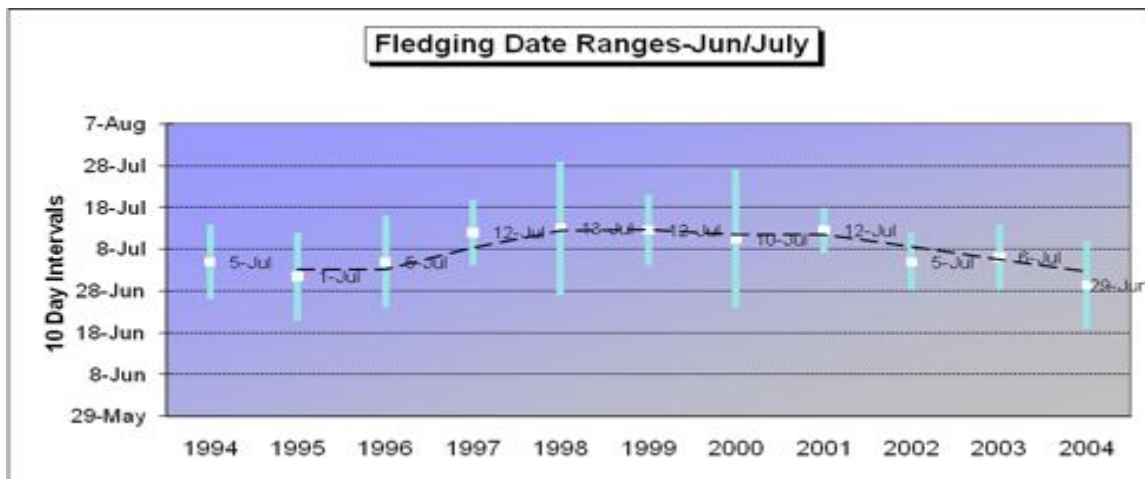
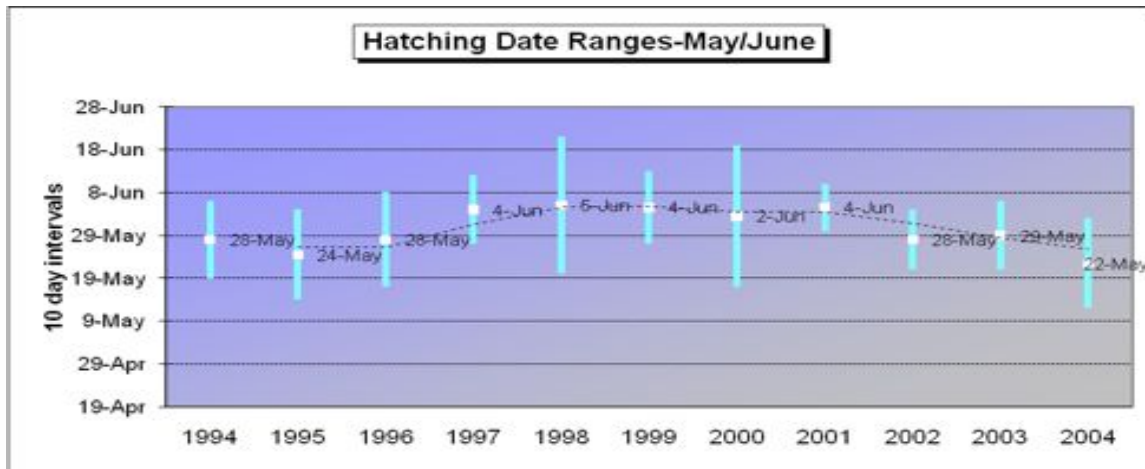
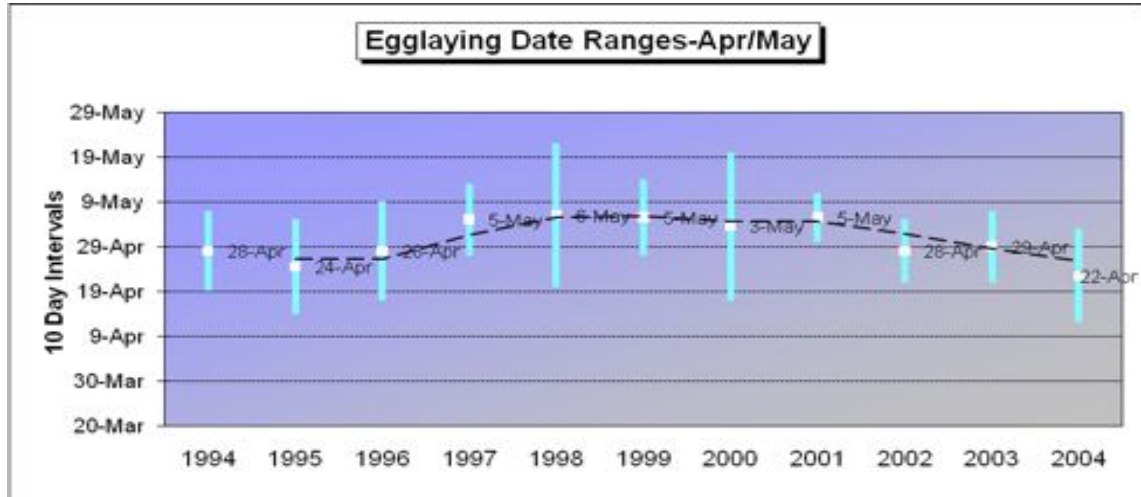
**S = Successful:** An occupied nesting territory with a known outcome where breeding was attempted (incubation observed) and where one or more young reached 80% of its fledging age.

**? = Unknown:** A nesting territory with insufficient data to categorize, possibly because it was not thoroughly searched in that year or observers spent less than four hours at the territory during the breeding season.



**Figure 3:**

**Phenology charts for egg laying, hatching, and fledging of goshawk on BVRD for 1994 through 2003.**



## BANDING INFORMATION

These data presented in this compendium are clearly population-level reports that cannot identify individuals. During 1992 and 1993, with access to field crews of 2-3 people, 16 adult goshawks were captured and color banded. The total number consisted of 11 females, 5 males. The band return rate was suboptimal. There were 3 females that returned to the BVRD in 1994 the year following their banding. Two were occupying the same territory and one had switched to an adjacent territory. The next year, 1995, there were only two band returns (one of these females was observed occupying the same territory for the next 5 years- see East Scotty Creek, Burntcabin Route). No marked birds have been seen on this study area since 1999 (Figure 4). There are 2 studies (Wiens and Reynolds 2005, Wiens et al. 2006) that have generated a great deal of information with a long-term banding effort in the southwestern region in regards to the movement, dispersal, and fitness of goshawk.



**Photos of Sonya Daw and author  
banding goshawks in 1993  
(Sonya in blue, SJR in grey)**

**Photo above with North Scotty Creek  
female 75/L**

**Photo left with East Scotty Creek  
female 62/L**

**(photos by C. Schelz)**

### Figure 4: Banding Numbers for 1992 and 1993

\*\* Nest names followed by a number (" -XX") represent alternate nests of same territory  
 Letters in red indicate the only band returns recovered on BVRD

NEST NAME**	YEAR TRAP	SEX	COLOR BANDS	YEAR RECOVERD	BAND RECOVERY
STEAGALL SPRINGS	1993	F	BLK/WHT 65/L	NEVER	
SENECA EAST -11	1993	F	BLK/WHT 63/L		
SENECA EAST -53 (female using alternate nest)				1994 @ SENE 1995 moved to Rock Springs S	BLK/WHT 63/L
NORTH SCOTTY CREEK -14	1993	F	BLK/WHT 75/L	NEVER	
JACK CREEK	1993	F	BLK/WHT 73/L	NEVER	
LARCH STOOP -17	1993	M	BLK/WHT 66/R	NEVER	
		F	BLK/WHT 66/L	NEVER	
BURNTCABIN CREEK -19	1993	F	BLK/WHT 60/L	SEE ESC-59	
STARR CAMP -32	1993	F	BKL/WHT 64/R	NEVER	
		M	BKL/WHT 64/L	NEVER	
EAST SCOTTY CREEK -33	1993	F	BKL/WHT 62/L	NEVER	
EAST SCOTTY CREEK -59 AND 33 (female was banded at Burntcabin Creek)				1994,1995, 1996, 1997? 1998	BLK/WHT 60/L
OLD GROWTH 238 -38	1993	M	BLK/WHT 68/R	NEVER	
		F	BLK/WHT 68/L		
OLD GROWTH 238 -10 (female using alternate nest)				1994	BLK/WHT 68/L
TABLE MOUNTAIN	1992	M	BLK/WHT 60/R	NEVER	
ROCK SPRINGS NORTH	1992	F	BLK/WHT 59/L	NEVER	
		M	BLK/WHT 59/R	NEVER	
WHITEWATER SPRING	1992	F	BLK/WHT 61/L	NEVER	

## RECORDING LOCAL DIALECTS

The techniques of identifying individual eagles by their vocal patterns (Eakle et al, 1989) presented an intriguing possibility for application of this technique to a goshawk population. It would be very useful for workers, especially those in the field by themselves, to be able to identify individuals by voice analysis rather than investing in the money and labor of capture and color banding goshawks. The technology in DAT recorders and software has steadily been improving to make this a realistic field tool. In the future, the digital advantages can be better exploited if so desired by field workers.

In the field, I can hear differences in vocal qualities in some individuals and between the sexes. Many field researchers familiar with a single population of goshawk as a result of several years of experience will corroborate this I suspect. To start this investigation, I performed field recordings of goshawks through the 1995 and 1996 breeding seasons. In attending the Natural Sounds Recording Workshop in California in 1995 offered by Cornell Laboratory of Ornithology, Library of Natural Sounds (LNS), I learned the correct methodology for making field recordings and gained access to the appropriate equipment. In 1995, the recording equipment, generously donated for the use in the field by LNS, consisted of a Nagra 500 reel to reel recorder with a Sennheiser ME 80 microphone. In 1996, the equipment was lent by OCWRU at Oregon State University in Corvallis. This consisted of a Marantz PMD 430 tape recorder unit and a Sennheiser ME 20 attached to a Sony parabola reflector PBR 330.

The mp3 files of these recordings are provided in the “Territory Chapters” below. I recorded 15 females, 5 males, and 6 juveniles in 1995 and 15 females, 3 males, and 3 juveniles in 1996. There are 7 territories that have recordings in both consecutive years and the only banded female (who returned to the same territory, East Scotty Creek, for 5 years) was recorded in both years. At the end of each recording session, there is a description of what was recorded (e.g., where, what, who, when, etc.). Many of these recording capture interesting interactions between male, female, and juvenile goshawk as well as interactions with the observer!

I draw attention to these recordings in the hopes that any bioacoustician with an interest and funding would be interested in following up on this research endeavor. In 1995, LNS was beta testing the Macintosh program “Canary” and, in a very brief analysis comparing some of these goshawk alarm call patterns, there appeared to be measurable individual differences. There are sophisticated software programs available now that facilitate voice pattern recognition to continue this type of investigation. The original 1995 tapes are in the inventory of LNS at Cornell for public access. All 1995 and 1996 digitally transferred recordings are hosted on a server at the University of Oregon along with the digital version of this document.

## PENTERIANI LISTENING TEST

In the early spring of 2003, I tested the methods for detecting goshawks as described by Penteriani (1999). This method takes advantage of the dawn and morning courtship vocalizations that occur near nest sites approximately 3 months prior to egg-laying. Although there are vast differences between the woodlands of France at elevations ranging in the area of 1000-1400 feet and those of this highly seasonal mountain country at 4500 to 6000 feet in the forests of eastern Oregon, this method did prove to be successful in this region.

I preliminarily tested four known territories with historically high occupancy rates by marking a "listening point" (LP) near nest clusters or a known nest (see field notes for Coal Pit, Old Growth 238, Starr (Middle Route), and Izee (Izee Route)). In two test sessions at each LP (once in February and once in March) I listened for vocalizations 30 minutes before dawn to no greater than 200 minutes after sunrise. I detected goshawk calls at 2 of the 4 territories in the March session, but no calls were ever heard in February. In the first nest check, I verified that those two territories where vocalizations were heard were indeed occupied with a female incubating on the nest. No goshawks were ever found at the other two territories even after the second and third called/search. Though this is a miniscule sample size, the 100% detection rate suggests that this method can be a useful tool for monitoring when personnel are limited. Though most of the BVRD is usually still covered in snow in March, most of the territories could still be accessed via the major roads on skis or snow machine; however, it would take quite a commitment to do this by the individual.

## WEATHER SUPPLEMENTAL

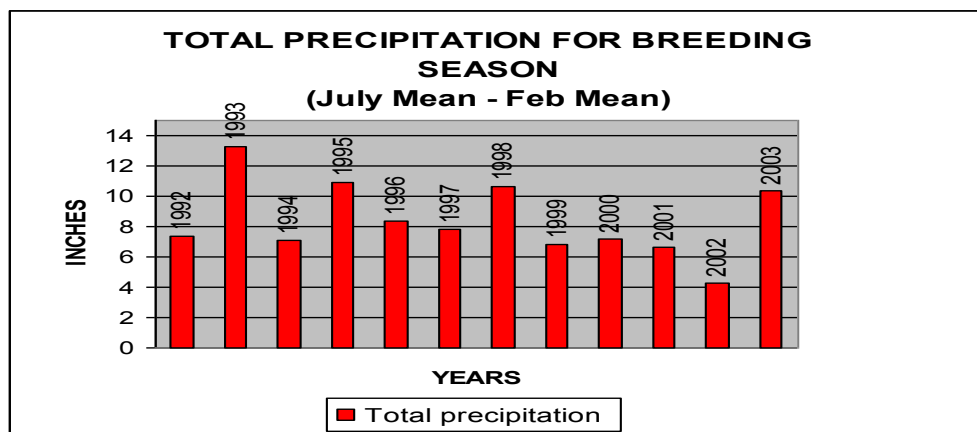
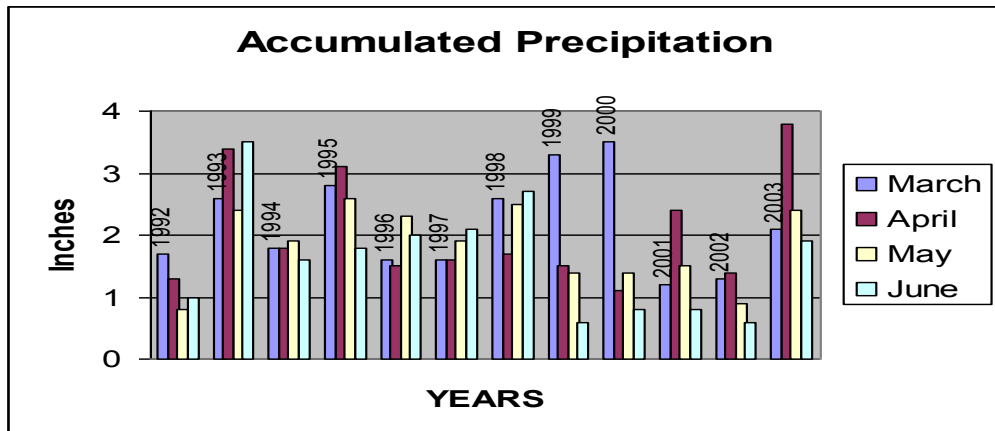
An added component to long-term tracking of this region is the accurate weather information that can be recalled from the Starr Ridge SNOTEL (SNOpack TELEmetry) station situated at an elevation of 5298 feet, opportunely located within an active goshawk territory (Starr) on the edge of Bear Valley. This site is ideally representative of the elevations and forest conditions of territories found in this study, and provided accurate "meteor burst communications technology" that collects data in "near-real-time" (see <http://www.wcc.nrcs.usda.gov> still active as of 2011).

An analysis on some of the weather parameters (during the breeding months of Mar, Apr, May, Jun) was performed for the years 1992 to 2003 which have the best record of productivity counts. This was a preliminary attempt to ascertain if any weather patterns could be correlated to the success or failure of nesting goshawk in this region. I offer these graphs, in the following tables, for anyone interested in pursuing statistical analyses of these kinds of data.

At the Snotel site, precipitation amounts are tallied starting from October 1<sup>st</sup> of each year and are reported on a daily basis, representing any form (rain, sleet, snow, hail) that is caught in the receptacle. On BVRD, this is perhaps a better representation of "precipitation", rather than the standard cited rainfall figures - especially from March to May where the weather could (presumably) have a greater impact on goshawk breeding success.

**Figure 5: Accumulated Precipitation During The Breeding Season.** Units = inches since Oct 1 of the year. Taken from the mean accumulated precipitation amounts for each month from the Starr Ridge Snotel site. Numbers in red indicate the change in the amount of precipitation received between the months. Note: Increases in precipitation at a SNOTEL site is any type of precipitation (e. g., rain, snow, hail, sleet, etc.) that is caught in the precipitation gauge.

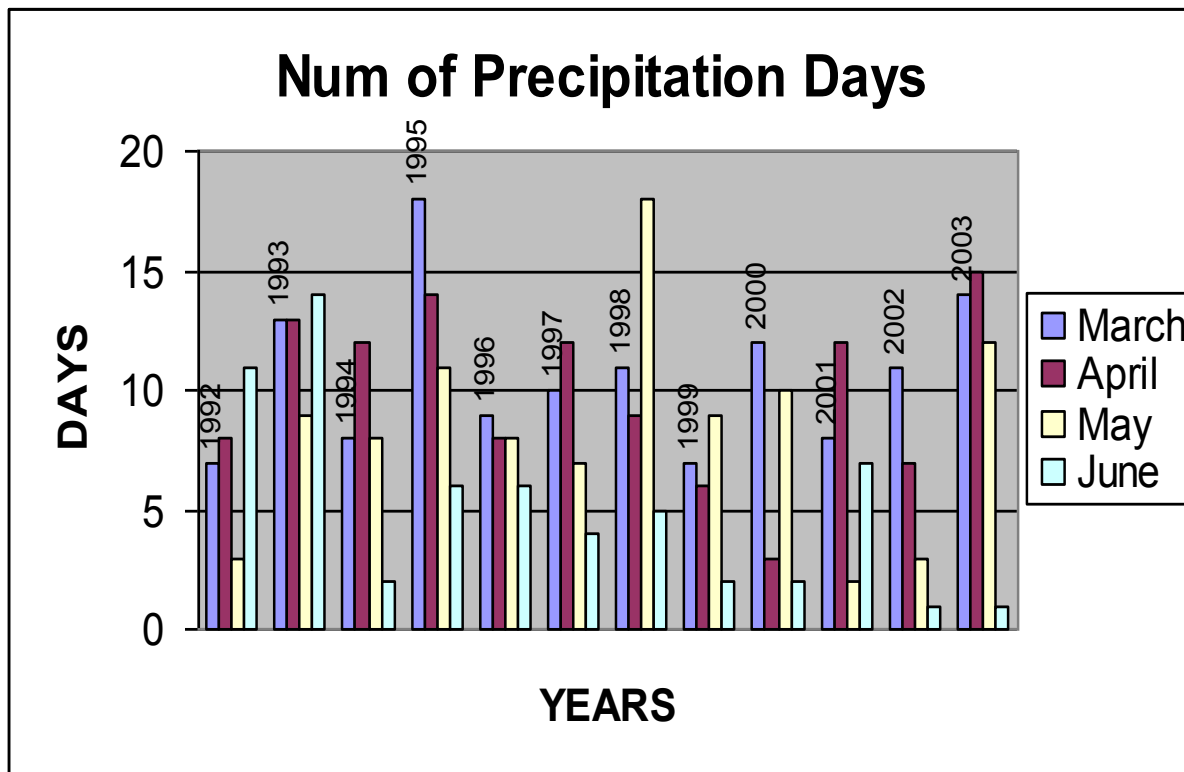
YEAR	FEB MEAN	Increase During Month Of MAR	MAR MEAN	Increase During Month Of APR	APR MEAN	Increase During Month Of MAY	MAY MEAN	Increase During Month Of June	JUNE MEAN	Increase During Month Of July	JULY MEAN	Total for Season (July mean-Feb mean)
1992	7.8	1.7	9.5	1.3	10.8	0.8	11.6	1.0	12.6	2.6	15.2	7.4
1993	12.7	2.6	15.3	3.4	18.7	2.4	21.1	3.5	24.6	1.4	26.0	13.3
1994	7.0	1.8	8.8	1.8	10.6	1.9	12.5	1.6	14.1	0	14.1	7.1
1995	11.6	2.8	14.4	3.1	17.5	2.6	20.1	1.8	21.9	0.6	22.5	10.9
1996	13.9	1.6	15.5	1.5	17.0	2.3	19.3	2.0	21.3	1.0	22.3	8.4
1997	15.0	1.6	16.6	1.6	18.2	1.9	20.1	2.1	22.2	0.6	22.8	7.8
1998	10.7	2.6	13.3	1.7	15.0	2.5	17.5	2.7	20.2	1.1	21.3	10.6
1999	12.5	3.3	15.8	1.5	17.3	1.4	18.7	0.6	19.3	0	19.3	6.8
2000	10.2	3.5	13.7	1.1	14.8	1.4	16.2	0.8	17.0	0.4	17.4	7.2
2001	7.0	1.2	8.2	2.4	10.6	1.5	12.1	0.8	12.9	0.7	13.6	6.6
2002	11.3	1.3	12.6	1.4	14.0	0.9	14.9	0.6	15.5	0.1	15.6	4.3
2003	7.5	2.1	9.6	3.8	13.4	2.4	15.8	1.9	17.7	0.2	17.9	10.4
2008	13.1	1.5	14.6	1.8	16.4	1.4	17.8	2.4	20.2	0.2	20.4	7.3
2011	14.2	2.8	17.0	3.1	20.1	2.8	22.9	4.0	26.9	0.5	27.4	13.2



**Figure 6: Monthly Precipitation Days- calculations for 1992 through 2003**

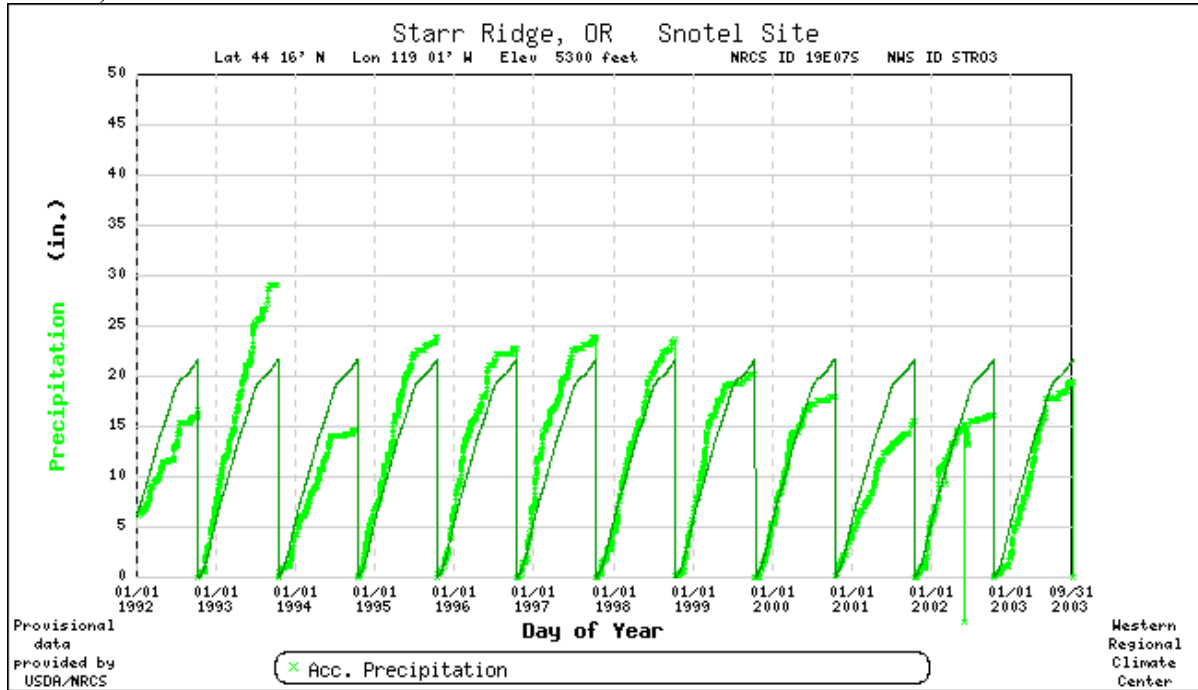
Number of precipitation DAYS in each month during the breeding season. Numbers represent each day there was an increase in the precipitation unit at the Starr Ridge Snotel site.

YEAR	MARCH	APRIL	MAY	JUNE	JULY	TOTAL # OF DAYS/SEASON
1992	7	8	3	11	7	36
1993	13	13	9	14	7	56
1994	8	12	8	2	0	29
1995	18	14	11	6	1	50
1996	9	8	8	6	1	32
1997	10	12	7	4	1	34
1998	11	9	18	5	5	48
1999	7	6	9	2	0	25
2000	12	3	10	2	2	30
2001	8	12	2	7	4	34
2002	11	7	3	1	1	23
2003	14	15	12	1	1	42

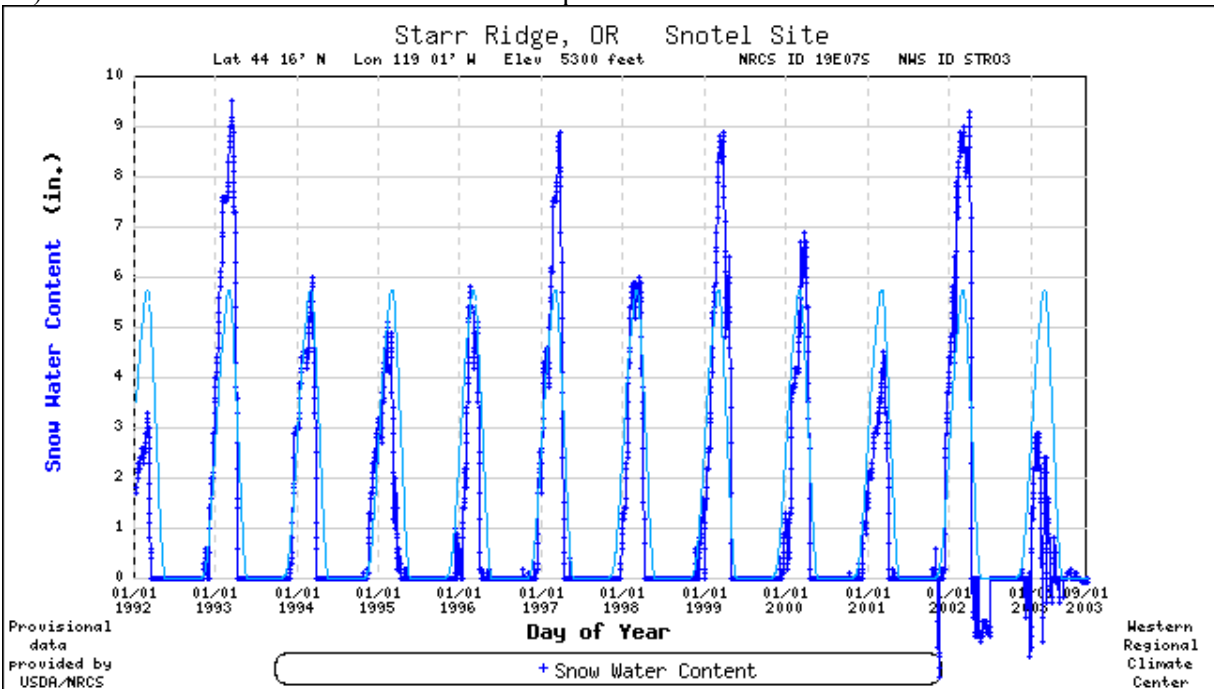




**Figure 7: Yearly Accumulated Precipitation.** (Average for Period of Record (POR) = dark green line)

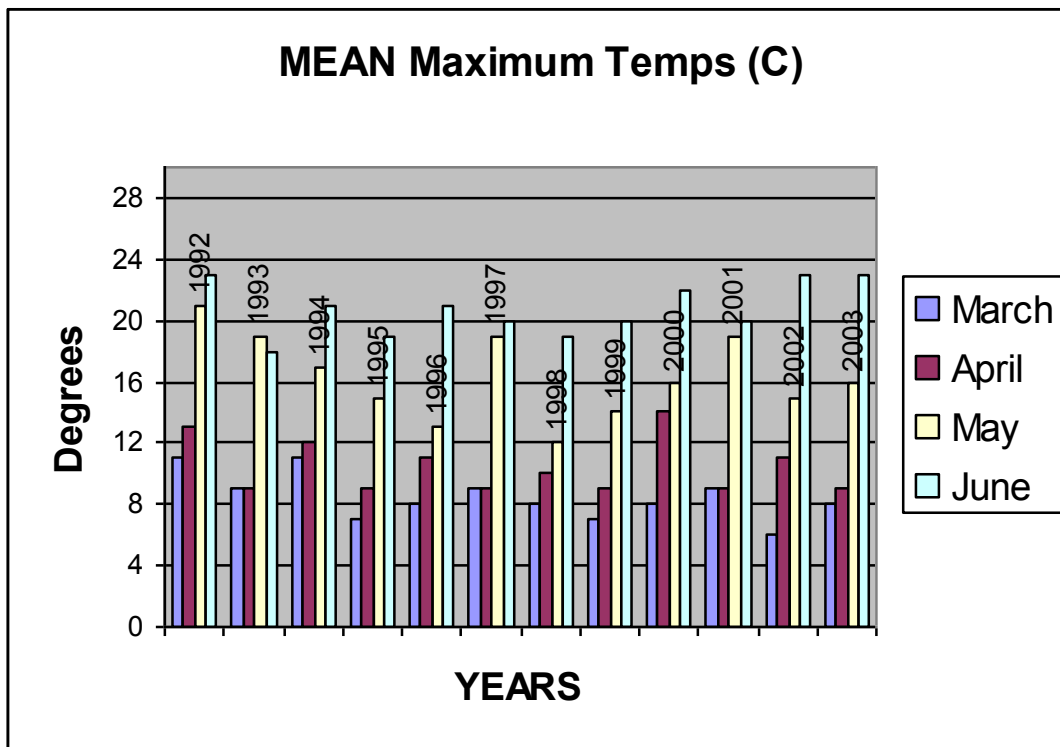
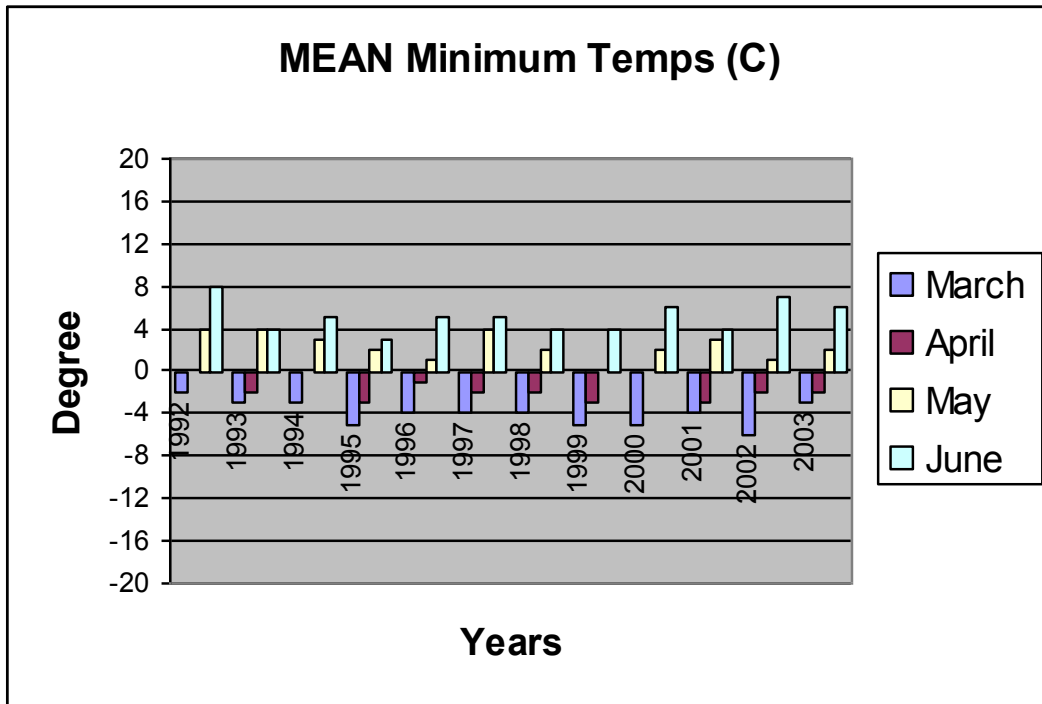


**Figure 8: Yearly Snow Water Content** (Average for Period of Record (POR) = light blue line) Snow water content is an indicator of snow pack.





**Figure 9: Mean Minimum And Maximum Temperatures for 1992-2003**



## CHAPTERS OF TERRITORIES

All of the data collected for 19 years has been grouped into “chapters” for each territory. Those that were observed more consistently will have more information than those that were not. “Field routes” were a way to group the territories in order to minimize the time and mileage necessary in visiting the territories that were in the same area of the forest (see Figure 11). Thus, the territories are arranged in alphabetical order *within* the “field routes”. These 5 routes are:

1. Strawberry Route - 16 territories
2. Burntcabin Route - 9 territories
3. Middle Route - 8 territories
4. Izee Route - 9 territories
5. Murderer’s Creek Route - 10 territories
6. Supplemental territories, briefly describing five territories outside the primary study area.

The first four routes encompass the original territories found from the beginning of this study and these chapters have abundant information. Murderer’s Creek Route contains the territories added in later years; thus, monitoring of these was not as rigorous, resulting in less data.

The first table in each chapter describes the yearly status of the territory. In the first column heading appears the abbreviation of the territory name with a superscript number. This number corresponds to the position of that territory on Figure 10: Chronological status of goshawk territories. This figure shows the year when the territory was first discovered and added to the database in comparison to all other territories. This figure is also a quick way to ascertain the status of all territories at a glance.

Following this there is a brief description of any interesting or unique issues that pertain to this territory. There is a generalized topographic and 3D map of the nest cluster. The exact localities are kept in a separate database to protect these sites, and are available to qualified investigators for research purposes.

Next is the actual nest and nest tree data, along with any added information (e.g., size of PFA established, recorded sound files, and/ or band information, if any).

Ending each chapter is a transcript of the pertinent notes, assembled for each territory, originally written in field notebooks onsite.

## LEXICON TO ABBREVIATIONS

Below are some of 4 letter acronyms devised by the forest service and other abbreviations utilized in the following chapters and field notes.

### Bird species

ACGE            -*Accipiter gentilis*  
CAGO            -Canadian goose (*Branta canadensis*)

COHA	-Cooper's Hawk ( <i>Accipiter cooperii</i> )
GHOW/GHO	-Great Horned Owl ( <i>Bubo virginianus</i> )
GRGR	-Great Grey Owl ( <i>Strix nebulosa</i> )
GRJA	-Grey Jay ( <i>Perisoreus canadensis</i> )
NOGO	-Northern goshawk
RTHA/RTH	-Red tail Hawk ( <i>Buteo jamaicensis</i> )
SSHA	-Sharp shinned Hawk ( <i>Accipiter striatus</i> )

Tree species

ABGR	- <i>Abies grandii</i> , Grand fir
LAOC	- <i>Larix occidentalis</i> , Western Larch
PIPO	- <i>Pinus ponderosa</i> , Ponderosa Pine
PSME	- <i>Pseudotsuga menziesii</i> , Douglas fir

Other

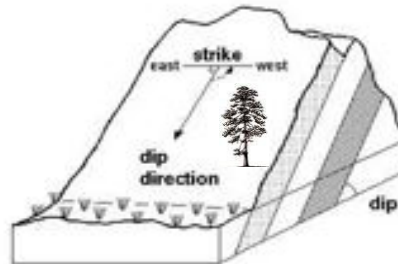
DBH	-diameter at breast height
DOG	-designated old growth area
FS	-forest service
PFA	-Post Fledging Area
TS	-timber sale
TSO	-timber sale officer
OP	-observation point (good local to see into nest)
wh/wa	-white wash on rim of nest or on ground.

Definitions

Strike and Dip were measured at the geographical site of each nest tree, and stand as a method of conveying the physical aspect of the surface in which the nest tree is rooted.

**Strike** is the geographical alignment of any horizontal line on a planar surface. Strike is not unidirectional; that is, a strike line might be read either 30 degrees or 210 degrees (the strike direction is a line running through these two points).

**Dip** is the angle of slope at right angles to strike, thus the maximum slope of the surface.



### Figure 10: Chronological Status of Goshawk Territories

? = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **\*RT, GH, GR, CG** = Following the goshawk status, this means a **Red-Tail Hawk**, **Great Horned Owl**, **Great Grey Owl**, or **Canadian Goose**, respectively, usurped a known goshawk nest or was nesting in a new nest within a goshawk stand; **Unused** = known nest sites unused, territory not thoroughly searched in 2011.

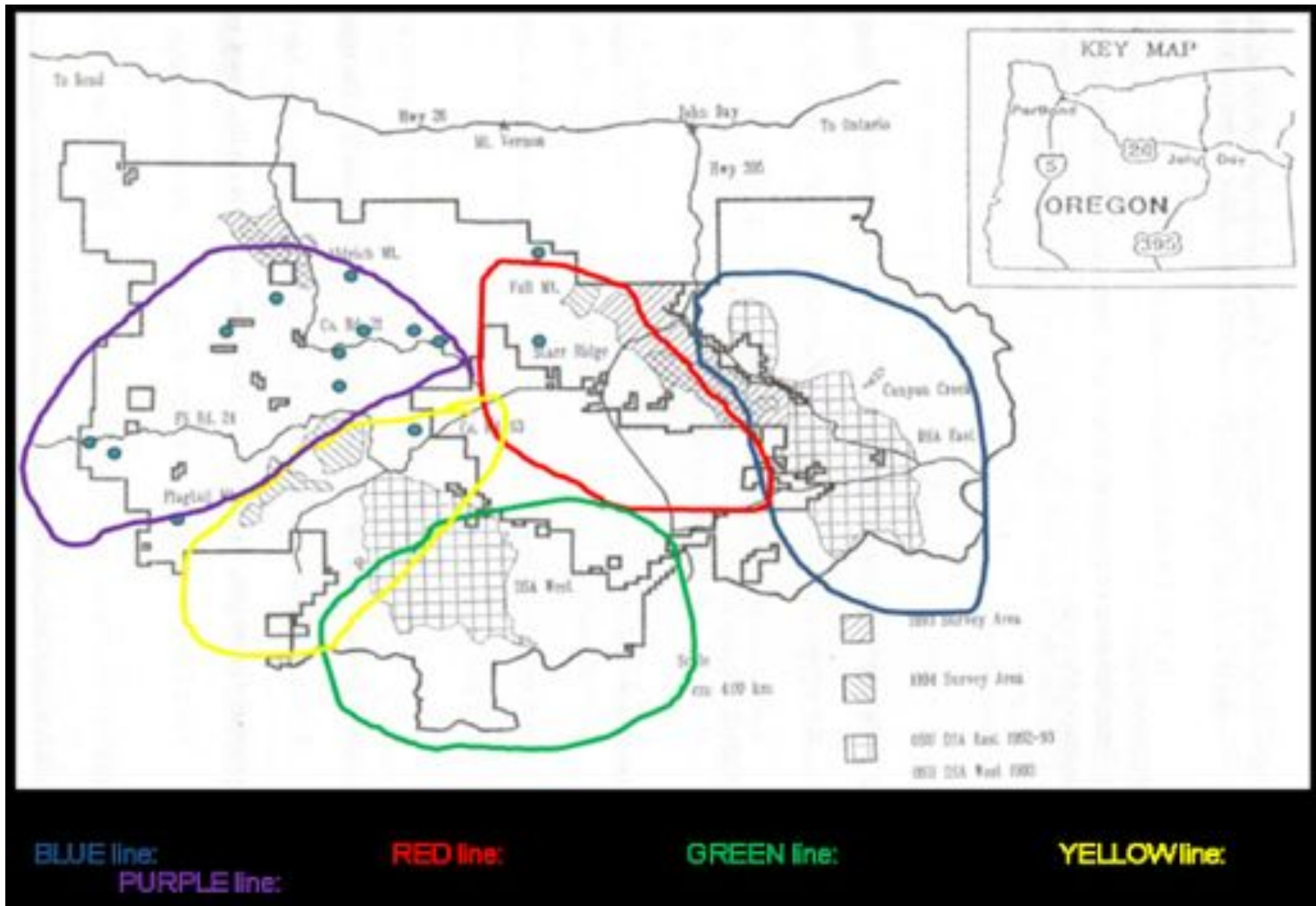
NAME	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
1 RSS	S	F	UNO	S	S	S/F	UNO*GH	UNO	UNO	S/F	UNO	F	S	S	S	S	UNO	S/F	S	Unused	
2 STE	S	S	UNO	F	S	S/F	UNO	A	S	UNO	S	S	A	UNO	GR/GH?	UNO	?	?	?	Unused	
3 TBL	S	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	UNO	?	?	?	?	?	?	?	?	Unused	
4 RSN	S	F	S	S	S	S	UNO	S	S	S/F	S	F	F	S	S	A	UNO	UNO	A	Unused	
5 POL	S	F	S	A	S	UNO	S	S	S	S/F	S	UNO	S	S	S	S	UNO	S/F	S	S/F	
6 DV	S	F	S	S	A	F	S	S	A	S/F	UNO	Burned	Logged								
7 SEN	S	UNO	UNO*RT	OCC*RT	S*RT	S*RT	S	S*RT	UNO	UNO*RT/GH	S*RT	A	S	UNO	UNO	S	UNO	UNO	S	Unused	
8 FSK	S	F	S	S	A	UNO	UNO	A	UNO	A	UNO	F	A	S	UNO	UNO	UNO	UNO	UNO	Unused	
9 BCC	S	OCC/F?	UNO*GH	UNO	S	A*GH	UNO	S	S	UNO	S	UNO	UNO	S/F	UNO	S/F	?	S/F	?	Unused	
10 OG	A	S*CG	S	UNO	A	OCC*GH	UNO	UNO*GH	UNO*CG	OCC*CG	S	UNO	S	S*GR	S	A	UNO	S/F	S/F	GR?	
11 SENE	S	S	S	UNO	UNO	UNO	UNO	S	F	UNO	UNO*GH	UNO*GH	UNO	UNO	UNO	UNO	UNO	UNO	?	?	Unused
12 WWS	S	F	S	S	S	S	A	UNO	UNO*RT	UNO	UNO*RT	UNO*RT	UNO*RT	?	?	UNO	?	?	?	Unused	
13 NSC		S	A	S	UNO	UNO	A	UNO	A?	A?	S	UNO	UNO	UNO	?	?	?	?	?	Unused	
14 JAC		S	UNO	UNO	S	UNO	S	S	S	S/F	UNO	A-Burned	S	S*GR	S*GR	S	?	A?	UNO	Unused	
15 LAR		S	S	S	S	A	S*GH	F*GH	A	UNO	S	UNO	UNO	UNO	S	A	?	UNO	S/F	S/F	
16 IZ		S	S	S	S	S/F	UNO	F	UNO	UNO	A?	UNO	A	S	F	UNO	?	UNO	UNO	Unused	
17 PEA		F	UNO	S	S	UNO	UNO	S	S	S/F	S	UNO	UNO*GH	UNO	UNO	A	UNO	UNO	S	OCC/S	
18 BSC		S	S	S	S	S	S	S	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	?	Unused	
19 STR		S	S	S	S	S	S	S	S	UNO	S	S	S	A	UNO	UNO	UNO	S/F	UNO	A	
20 ESC		S	S	S	F	S/F	S	F	UNO	UNO	UNO	A	UNO	UNO	A	UNO	?	?	?	Unused	
21 DAM		F	UNO	UNO	UNO	UNO	S	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	UNO	UNO	?	UNO	Unused	
22 BCS		S	A	UNO	UNO	UNO	UNO	UNO	UNO	UNO	S	UNO	UNO	UNO	UNO	UNO	?	?	?	A	
23 BC		UNO	S	S	UNO	S	UNO	A	UNO	UNO	UNO	UNO	S	UNO	GR/GH?	S	?	S/F	S	S/F	
NAME	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	

NAME	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
24 LSC		S	S	UNO	A	UNO	UNO	UNO	UNO	UNO	UNO	A	A	UNO	S	UNO	A?	?	UNO	OCC/S
25 FLA	OCC	?	S	UNO	UNO	A	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	?	?	OCC/S
26 POW		S	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	?	?	?	Unused
27 LP		?	S	S/F	A	S/F	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	?	?	?	Unused
28 FAW			F	A	UNO	S	S	S	UNO	UNO	S	S	UNO	S/F	S	UNO	UNO	UNO	S/F	Unused
29 SNO			S	S	UNO	OCC	A	S	UNO	UNO	UNO	A	S	S	UNO*GR	S*GR	?	OCC	A	Unused
30 RD651			S	S	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO*RT	UNO	?	?	?	A?	?	UNO	Unused
31 RCB			S	S	F	UNO	S	S	UNO	UNO	UNO	UNO	UNO	S	S/F	A	A?	A?	UNO	Unused
32 VAN			S/F	S	A	UNO	UNO	A	UNO	UNO	UNO	UNO	UNO	UNO	?	?	UNO	?	?	Unused
33 GEA				S/F	UNO	UNO	OCC*GR	S	A	F*GR	UNO*GR	S	S*GR	F*GR	UNO	S	?	UNO*GR	S/F*GR	S/F*GR
34 OK				S	S	A	S	S	S	S/F	A	UNO	S	A	UNO	UNO	?	?	?	Unused
35 LC				S/F	UNO	UNO	?	?	?	?	UNO	UNO	?	?	?	?	?	?	?	DNC
36 MS		A?		UNO	S	A	UNO	UNO	UNO	UNO	UNO	UNO	A	UNO	?	UNO	?	?	?	Unused
37 WHT					OCC	UNO	S	UNO	S	UNO	UNO	S	S	UNO	?	S/F	?	?	?	OCC/S
38 BUC					S	S	A	S	UNO	UNO	S	UNO	S	S/F	?	UNO	UNO	?	?	Unused
39 DEW					OCC	A	S	UNO	S/F	UNO	UNO	UNO	UNO	S/F	?	S/F	?	?	?	OCC/S?
40 SWM					OCC	UNO*GH	A	UNO*RT	UNO*RT	UNO	UNO	Burned	Logged							
41 LEM					S	UNO	UNO	UNO	UNO	UNO	A	UNO	UNO	UNO	?	?	?	?	?	Unused
42 ALK					OCC	A	UNO	UNO	UNO	UNO	S	S	UNO	S/F	?	UNO	?	?	?	Unused
43 NSW					S	UNO	F	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	?	?	A?
44 BB					S	UNO	UNO	?	UNO	UNO	UNO	UNO	UNO	?	?	?	?	?	?	Unused
45 LUC					S	S/F	UNO*GH	S	S	S/F	UNO*GR	UNO*GR	UNO	UNO*GR*CG	?	A	?	?	UNO	UNO*GR
46 CC					S	UNO	UNO	S	UNO	?	UNO	UNO	UNO	A	?	?	?	?	?	Unused
47 STW		UNO	?	UNO	?	S/F	UNO	UNO	UNO	UNO	UNO	UNO	UNO	UNO	?	UNO	?	?	?	OCC
48 CP						S/F	S	S/F	S	S	S	F	S	A	S	UNO	UNO	UNO	S/F	S/F
49 OM						S	A	F	UNO	UNO	UNO	UNO	UNO	UNO	?	?	?	?	?	Unused
50 WSW							S	S	F	UNO	UNO	A	S	UNO	S	RT	?	?	?	GH?
51 HS							OCC	UNO*RT	S	OCC/A*GR	UNO	UNO	S	S	UNO	GR	?	UNO	UNO	Unused
52 BS								S	S	A	UNO	UNO	UNO	UNO	?	?	?	?	?	Unused
53 BEA									OCC	UNO	UNO	UNO	UNO	?	?	?	?	?	?	Unused
NAME	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011

NAME	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
54 SUR									UNO	UNO	UNO	?	?	?	?	?	?	?	?	Unused
55 SHTT													UNO							A
56 LMALRIV													S							DNC
57 DUN CK																S/F				DNC
NAME	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011

? = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **\*RT, GH, GR, CG** = Following the goshawk status, this means a **Red-Tail Hawk**, **Great Horned Owl**, **Great Grey Owl**, or **Canadian Goose**, respectively, usurped a known goshawk nest or was nesting in a new nest within a goshawk stand; **Unused** = known nest sites unused, territory not thoroughly searched in 2011.

Figure 11: The Field Routes used in survey - Color-coded



## **Strawberry Route**

**Big Bend (BB)**

**Big Canyon (BC)**

**Blowfly Springs (BS)**

**Fawn (FAW)**

**LP Dog (LP)**

**OK Truck Barn (OK)**

**Pole Creek (POL)**

**Powell Meadows (POW)**

**Rock Springs North (RSN)**

**Rock Springs South (RSS)**

**Seneca 701 (SEN)**

**Seneca East (SENE)**

**Steagall Springs (STE)**

**Table Mountain (TBL)**

**Whitewater Springs West (WSW)**

**Whitewater Springs (WWS)**



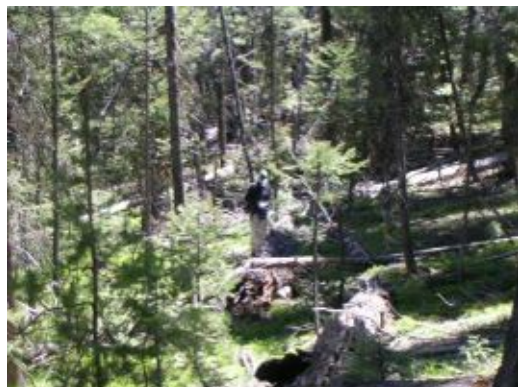
## BIG BEND

BB <sup>44</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	87	?		S		Found by FS personnel
1997		5/8/97		UNO		
1998		5/10/98		UNO		
1999				DNC		
2000		5/5/00		UNO		
2001		?		UNO		
2002		5/7/02		UNO		
2003		5/27/03		UNO		
2004		5/13/04		UNO		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

FS personnel discovered this territory during routine set up of logging units for a timber sale. The nest stand itself was maintained; yet it was not in perfect health at the time. There seemed to be a fair amount of dead and dying clumps of trees in the area when I first entered it. I presume that the condition of most of the forest in this area was the initial silvicultural reasoning for a timber sale.

The nest tree itself was a mature dead PSME that had already been broken and was a standing snag. Visiting the stand in 2011 showed that this nest tree is now completely down (*photo is me standing on nest tree*). The stand itself is not as deteriorated as I was expecting, probably owing to more moisture in the last few years and a very wet 2011 spring (see Figure 5).



I had concentrated my extended searches to the WNW of the nest stand contouring around the ridge. This presented some of the only suitable habitat in this area and had not been heavily damaged yet. Most of the forest down slope from this stand, NE down to the Bear Creek drainage, has had several logging entries in the past and is heavily fragmented.



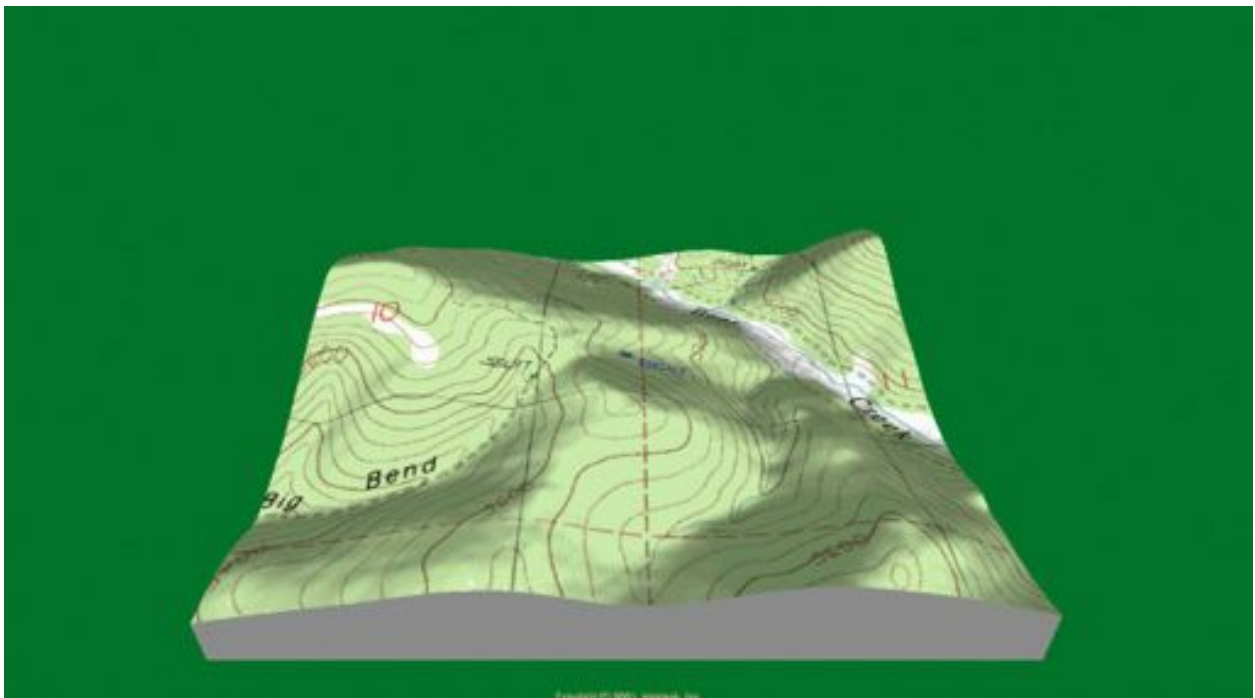
Both photos represent stand condition as of 2011 and nest tree is on the ground







*North up*



BIG BEND

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BIG BEND -87	NO TAG *	5509	PSME	15	N	25	130	13 to NE

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
87					A	I	I		X	

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
87				DNC	DNC	DNC	DNC	DNC	DNC	tree down

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check

**\*No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = 440 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### **BIG BEND**

#### **1997**

8 MAY: 1100 First check on nest, new one for me found by BVRD last year. Nest is unused and the tree itself has broken off right above the nest - old dead PSME. Searched this stand but no goshawk. As sitting at the truck, saw a large bird flying low thru woods below the road, down drainage moving N. Walked this area and contoured back S into drainage that I drove by entering this area, up to rd. 858 and along #857 back to truck. All this has been logged and is rather open. The stand of the nest is about the only seemingly good habitat, except for the area below the road as you first start up rd 857. Will check this out on drive out.

*Did not visit again this year.*

#### **1998**

10 May: In for initial nest check. Nest is still up but unused and ½ gone. Walked the stand but no sight/sound of goshawk.

*Did not visit again this year.*

#### **1999**

*Did not visit/check again this year.*

#### **2000**

5 MAY: In for initial nest check. A large snow storm blew through JD valley in AM, was cold all day. Drove up to stand from Canyon Ck side this year, up rd #1530 to #673 to junction with #960. Better side to search stand for you come in on the top of ridge and can hear into the good habitat to the W. Nest tree itself is gone now and no sight/sound of goshawk. Searched the surround a little, but had left my lights on in Geo and the battery was dead when I got back to the car. So, Jade (*German shepherd dog*) and I had to walk out down to the 15 road and walked 7 miles before we saw a Forest Service truck, with guys I knew, to take us back to car and jump start it. That's all that got done today!

*Did not visit again this year.*

#### **2001**

I did not check this out at all this year, but the FS volunteer, Farr, came for a few weeks and I had him go in to call this territory. He did not report hearing or seeing anything in response to his called search. The quality and quantity of his search is unknown to me.

#### **2002**

7 MAY: In for initial nest check. No new structures seen nor sight/sound of goshawk. The stand is still intact, but only searched this area. There is a cold front coming through today with snow showers and cold wind on and off, so not a good day for searching. Will try to come back in Jun to call total area.

*Did not visit/check again this year.*

#### **2003**

27 MAY: In for initial nest check. Drove in from the S again and a little beyond the 960 junction. I searched this area coming into nest stand from W and on around stand. No new structures seen and no sight/sound of goshawk. Marked track as "27 MAY 03 BB"

*Did not visit/check again this year.*

**2004**

13 MAY: In for initial nest check. Unused and nest and the snag it was in is gone now. Spent 1 hour walking stand and no sight/sound of goshawk.

*Did not have time to return here this year*

**2005-2010**

*Did not visit/check again these years.*

**2011**

24 JUN: in for final measure. Tree down and have a photo of me standing on this tree. But even though there is a lot more PSME dead and down in here, still a viable looking habitat as well as the surrounding area that I have called in the past.

## BIG CANYON

BC <sup>23</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993				UNO		Historical area just checked this year
1994	45	5/25/94	Y	S	2	
1995	62	4/24/95	Y	S	2	
1996		4/30/96		UNO		
1997	106	5/8/97	Y	S	1	
1998		5/3/98		UNO		
1999		5/1/99		A		Active- goshawk in area
2000		4/26/00		UNO		
2001		5/8/01		UNO		
2002		5/1/02		UNO		
2003		4/28/03		UNO		
2004	62	4/26/04	Y	S	1	
2005		4/23/05		UNO		
2006	(186)	5/8/06		Usurped		No good ID on owl-GHOW or GRGR
2007	62	4/13/07	Y	S	3	
2008				DNC		
2009	62	5/26/09	Y	S/F		No final status data this year
2010	62	5/13/10	Y	S	3	FS crew had found this nest occupied earlier than my visit
2011	NEW 2011	6/22/11	N	S/F		@ least 2 chicks in nest, female aggressive

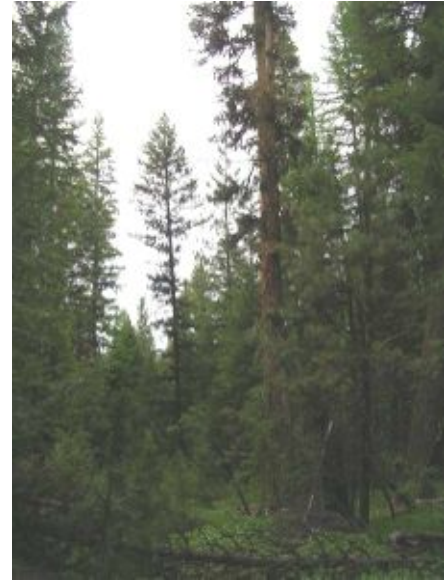
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The nests in this territory are in a relatively steep draw compared to most of the other nest sites in this region. The habitat has maintained its complexity without degenerating much through the years and there has been no management activity *directly* in the nesting draw.

However, this is another one of the territories that has had a rather disruptive logging activity occurring around it in some years. In 1995, there were helicopter-based logging operations on-going through the breeding season. The activity started on April 4<sup>th</sup> lasting through May 7<sup>th</sup>. The disturbance was very loud with activity occurring only about ½ mile from nest area. Even with all this, the goshawk pair was successful that year in fledgling 2 young. In 2007, the Spion Burn had several units close to this draw, but again the goshawks nested and were successful. In this latter case, the timing restrictions during breeding season were enforced. These examples illustrate a positive breeding outcome for goshawk even with disruptions; however, it might be worth considering the geographical aspect of this steeper draw that provided a level of protection for the nest site.

I have yet to find an alternative site close by. In 2002, I did long surveys from Big Canyon to Wendell Meadow and including Powell Meadow in hopes of finding an alternate nest site for these areas, but found nothing. In 2003, I spent time in searching to the north (toward

area of the abandoned Table Mountain territory) and northeast of FS road #15 picking up hunting goshawks, but never pinning down an alternative nest site.

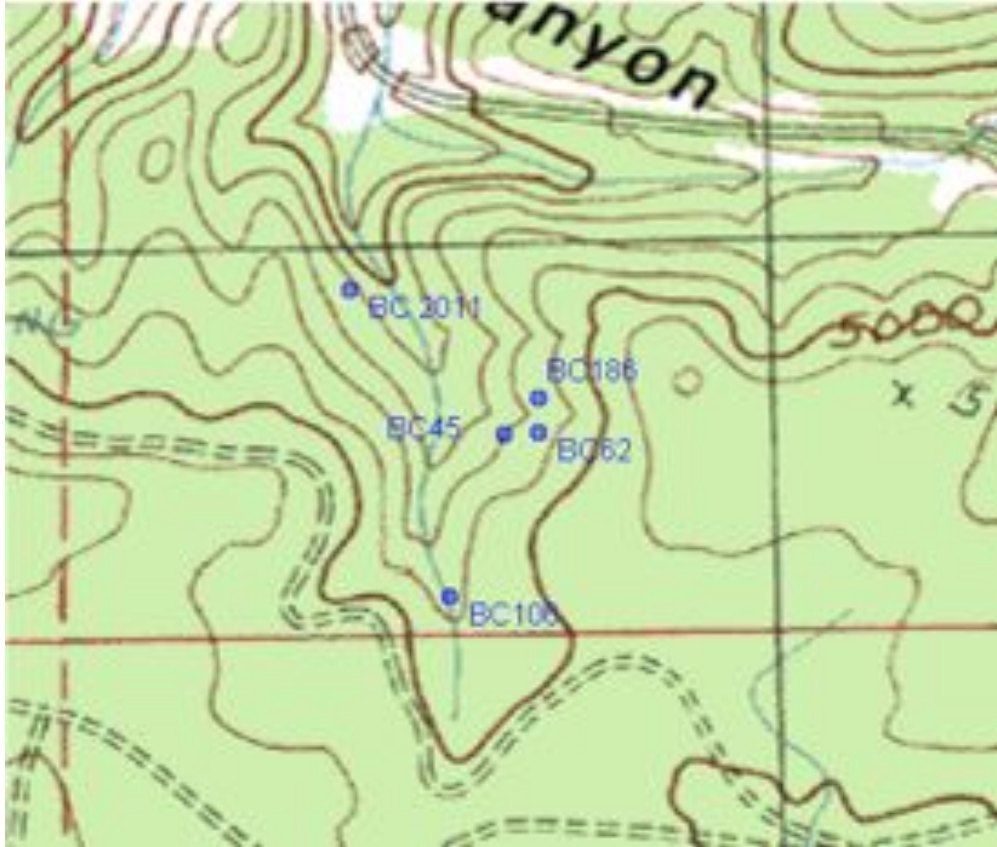


Photos above is nest area of #106.  
Photo to left is looking into nest area of #45 and 62.  
These represent the conditions of the nest stands as of 2011.

Photo to right is view of the road leading into stands showing valid re-growth as of 2011 (road was bare in 1994 but a road closure was established in 1997).







*North up*



BIG CANYON TERRITORY

## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BIG CANYON - 45	TAG	4919	LAOC	23	NW	68	180	20 to W
BIG CANYON – 62**	TAG	4955	LAOC	19	E	60	200	20 to NW
BIG CANYON -106	TAG	4954	LAOC	12	S	40	218	15 to NW
BIG CANYON -186	TAG	4947	PIPO	37	366	70	150	24 to SW
BIG CANYON 2011	NO TAG *	4824	LAOC	20?	NE	60	nd	nd

## NEST USAGE AND LONGEVITY THROUGH THE YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
45		I	A	X						
62				A	X					
106						A	I	I	I	I
186										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
45					X	X				X
62			A / R	I	I	A	A		A	I
106	X				X	X				X
186					U	I				I
2011										A

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag = In this case, there was an active goshawk with nestlings, aggressive, and I did not stay to tag tree so as not to disturb her further.

\*\* Tag on tree reads #45 which is incorrect-field assistants marked this tree with the wrong number.

**Post Fledging Area (PFA)** = 478 acres established according to FS records. Most of these are in small parcels, unknown if these are continuous and adjacent to each other.

### Recordings

In 1995- female adult vocalizations

*big canyon 95 Jun16.mp3 and big canyon 95 Jun30.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BIG CANYON

#### 1993

Historical area checked but unoccupied

#### 1994

25-May-94: 1618: Walk-in to nest#45 , 1 Adult Incubating

19-Jun-94: 1100-1130:Nestling check- 2 in nest @17-19 days. Heard 1 Adult wail as walking in, but it never came to nest while we were there.

05-Jul-94: 0950-0955: Fledgling check- 2 still at nest @ 34-36 days. No sign of adults. Nestlings with full crops.

#### 1995

First visit 24 Apr 95. Walked into nest site and found that a new nest is occupied with an incubating adult on nest. The new nest is almost adjacent to the #45 tree, up drainage. This will be a good experiment because helicopter logging is going on less than a 1/2 mile to the west. The noise is tremendous and you can see the activity on the ground. The date that the helicopter started was 4 Apr 95 and will continue till approx 7 May 95. The logging activity started around mid-March; thus, all this disturbance was going on while the goshawk were courting and laying. The adult on the nest was very stationary as we walked

(Added note: This will be an interesting site this year because helicopter logging is occurring right now on next ridge over to west. Very loud noise from saws and copter and can see the men working on hill. Goshawk must have laid early and been established in area before this noise started(?). Need to get name of sale and date helicopter started. Goshawk did not move off nest while I was watching. Will this noise cause a failure???)

16 June: In to do first nestling check and try to record. As I got to the OP site on the road, female was at the nest feeding 2 chicks @ 14-17 days. She left nest and I walked down to tree to record. Before I got off road, she flew by and landed in a fir ~70ft up near nest tree. She was watching silently and I had to get to within 40ft of tree before she called. She is non-aggressive and only gave 3-4 calls and then was silent. She did not stoop or come off perch. When I first drove up, I could hear her beg calling, at about 0730. So perhaps for recording interactions, I would need to get to nest sites prior to 0700.

30 June: In for fledgling check. Two nestlings in nest 1@ 30-32 days, and 1@32-34 days. When walking in I could hear their chirping and saw that adult was @ nest feeding them. She finally noticed me and flew off. She only came out with a mild stoop when I was within 10m of tree. She perched over me, up 10-15m, and I got second recording of her alarm calls. Chicks were silent all this time. Did not collect pellets at this time because she seemed hassled. Couldn't see if she was banded or not.

17 July: In to do measurements. Did not see or hear any goshawk. Very few pellets left to collect. New #62 is about 15m due east of nest #45. It looks like #45 blew down this year already.

#### 1996

30 Apr: In for initial check. Both nests are gone now. Walked length of stand and no new structures seen. No sight/sound of goshawk.

8 May: In to do search with caller. Called 5 stations down the road that runs along this drainage. Went along rd#414 calling and down the next drainage to NW calling stations. No sight/sound of goshawk. Saw an accipiter fly across road as I was traveling west, but it had a reddish tinge to it. It was most likely a Coopers. I got out and called here, but got no response. I spent two+ hours in this area searching and calling and found nothing.

4 June: In to do second search using caller, searching the PFA area. Spent about 1.5 hours calling the best areas around the nest and in the PFA supposed area. No sight/sound of goshawk. I will have to call this territory Unocc this year.

## 1997

24 Apr: In for initial check. The road has a closure on it at the Y-junction with rd#3925 now - good. Walked in to check on known nest sites - no new structures seen in stand. No sight/sound of goshawk.

8 May: In to search stand silently. Found new nest that is occupied. I had not walked this way at all on my first visit in. Female incubating on nest. Followed fence line down to beginning of drainage from the y-junction with road#414 and #403. Go about 70 paces @ 280 degrees to where it opens out into a spring area. Good Op along this fence line. Looking down drainage from fence there is a small diameter LAOC with the nest near crotch at top. The tree and surrounding ones all have dead looking clumps in them.

5 July: In for final check. Appears successful- saw one chick branched by nest @ 38-40 days. Could have been others already gone, because I didn't get here to do a chick earlier - or there was only 1 chick this year (?). Put sign on tree and no response from the fledgling and no other goshawk seen or heard.

## 1998

3 May: In for initial check. Nest #106 is still up but unused. No other new structures seen. Walked the stand, but no sight/sound of goshawk.

30 May: In for second search, but trying my "crepuscular" search. Walked drainage in late afternoon till about 1730 but no goshawk seen or heard. Went and sat on ridge above drainage to watch and listen until sundown. Was in camper and then left to go to RSN to do AM search. I had the GPS12 this time and tried to mark route and tree.

*Never went back to this territory again this year.*

## 1999

1 May: In for initial check. Only the one nest good, but unused. Searched stand but no sight/sound of goshawk. Pileated woodpecker called and flew by me while in the stand.

8 June: In to do second search with the caller. Appears it is Active, but could not find the goshawk. I called stations down drainage along west side, all the way down to the Hwy and along it to intersect with the road that comes back up drainage along the east side. When I got just to the area that #45 and #62 used to be, an adult goshawk flew low over me - no vocals- checking me out and then flew off NE direction. I thoroughly searched this area again, but nothing found. I drove over to the draw NE of here, across the Hwy to the north. I have a hunch that this might be their other place perhaps. But, my hunch was wrong. This drainage has been logged. I also searched the draw that begins directly across Hwy from the junction of rd#3925. There are some good PIPO habitat areas here but no sight/sound of goshawk, either.

*Never went back to this territory again this year.*

## 2000

26 Apr: In for initial check. Still one nest up but unused. Walked stand but no sight/sound of goshawk.

*This territory was not well covered this year because I never got in to do any other searches here.*

## 2001

8 May: In for initial check. Walked the stand where nest sites are, no new structures and no sight/sound of goshawk.

*This territory was not well covered this year because I never got in to do any other searches here.*

## 2002

1 MAY: In for initial nest check. All nests are gone now and no sight/sound of goshawk when searched stand. Will come back in Jun to call this in conjunction with the area of Powell Meadow and the meadow area between these two territories.

5 JUN: In for second called search. Ran a 6 mile track around Wendell Meadow to Powell Meadow up road 3925 to Big Canyon and around this drainage. No sight/sound of goshawk at all.

## 2003

28 APR: In for initial nest check. All nests gone and no new structures. Searched just the stand and no sight/sound of goshawk.

26 JUN: In for second called search. Called a long survey mostly between this and toward Table area track "26 JUN 03 BC". Still unoccupied at BC, called all down the drainage to the highway and across. This draw across #15 is cut mostly and I won't bother with it anymore. When I got up into the upper part of the nice drainage that runs up from the junction of 15 and #3925, I got a male response. I walked in the direction to the top of the ridge that borders East fork? Canyon Creek drainage. I continued contouring around on this ridge calling down into each draw of Canyon CK over to the top of HAB X that I had marked last year, where Curly (*German shepherd dog*) sprained his foot. No response at all. I walked down back to the good drainage that comes out at #3925 then across the highway, parallel to the road back to truck. This flat area between #15 and 3925 is nice with some large trees but it has been logged heavily in past. So, no sight/sound of goshawk, but I did pick up a hunting goshawk in vicinity. This has happened in other years but I have yet to find the alternative nesting site for this area.

## 2004

26APR: In for initial check. OCCUP in N62. Spent 1:11 hr @ 1.14 mi. All nests were gone 2 years ago, but they are rebuilding 62 in the exact same place. I had walked all down drainage and heard COOP call at end near hwy. As walking back up to check on other nests, it appeared that N62 was rebuilt a bit. Found a feather on trail that leads down to nest tree. I circled around along the road to get a better look into nest when I heard got a gentle alarm call off to my left in the stand. There is greenery on nest, but no down or female that I could see. They are probably just in the process of laying I bet. I will come back in Mid-May to make sure.

13MAY: In for nest check, to make sure the nest was being used and rebuilt. Yes OCCUP, down on nest 62. Did not stay long, just enough to know that she was there where I thought and that I had not disturbed her on 1<sup>st</sup> visit.

NOTE: in GPS sites 62 and 45 were reversed. Renamed them to correct position and need to make sure that computer copy is corrected also.

17JUN: In for nest check. Very interesting- this appears to be an immature female, only 1<sup>st</sup> year bird still brown spotted. She was staying on the nest until I got to within eyesight scrambling down the slope below road. She flushed off and started calling. She came to perch right over me and that is when I saw her brown streaking on breast and light eyes. The chicks were too small to see at all so apparently these are behind the nest ages of other goshawk nests. Chicks are probably 17d or less.

28JUN: In for nest check. Again interesting! They have already fledged! I did hear at least 1 begging down in the draw but nobody was in nest or tree that I could see. I misread this earlier in thinking that this nest was so far behind the others. Perhaps the one chick had been branched on last visit, and I did not see it or look for it really. The bird that flushed off the nest was immature, but flying well and alarm calling at me. It is hard for me to believe that this was possibly a 40+ day chick this early!! So, I'll say 1 fledged here as the most parsimonious conclusion, but this is still a question in my mind of how early they were here. OR, did a GHOW take a chick here. On the roadway into nest I found a owl feather and when last in, was the immature goshawk adult still just protective with a chick gone... Who knows!

## 2005

23 APR: In for first check. Walked the nest stand- last year's nest unused and no sight or sound of goshawk.

6 JUN: stopped to do 2 short call stations at top of draw and at nest sites to test out sound. No response but good sound system. A fierce brief storm came in and I will quit for today.

*Did not visit/check again this year.*

## 2006

8 MAY: Occupied by someone, but no good ID in a new nest "BCX-06" (*now #186*). This is right by the others #45 and 62- a large PIPO at top. Not a lot of down on nest and no adult seen, but there is an area of white/gray fluffy down in nest- I bet it is a GRGR (looks like the one at Steagall). No other structures seen and no sight or sound of goshawk. Walked all rest of nest stand, will have to come back at end of month.

20 JUN: In to recheck new nest. Nest is now empty and no activity. So will say that GRGR was using this- maybe successful or not- but did not get out here at right time to ID owl or such.

## 2007

13 APR: In for first check. Was going to check RSS, but that territory is not as effected by the "Spion Burn unit" for this spring. OCCUPIED nest #62 is rebuilt again. Saw down on nest and fresh green. The nest is oriented away from the OP trail, but it feels

like goshawk. I remember this nest being used by RTHA 4-3 years ago?(but didn't write it down in notes for some reason!), but if RTHA on nest I think she would have called at us (with TJF)(=Ted Fremd). So will consider it occupied so that the FS spring burns be placed with 1/2mile restrictions on area. It may yet prove to be GRGR and/or other raptor but it is no matter- nest site still needs protection. Had nice picnic at road junction of BC in snow banks.

18 JUN: nest check-successful with 3 chicks @ 30-34 days. Female at tree and she flew out to investigate me, but no calling, she was silent. Chicks were begging with faint calls, up and hopping around nest.

## 2008

*Did not visit/check this year.*

## 2009

26 MAY: In for first check. Occupied in nest #62 again. Lots of down on nest rim. Didn't check this site last year, so don't know if they were here in '08 or not.

Did not visit/check again this year. So don't have any sure data on final status of nest- successful or failed???? Final status=Occupied

## 2010

13 MAY: Rechecked on nest used that FS crew said was occupied . As I thought, the nest number was wrong. Nest #62 is used, female on nest incubating (NOT #186) .

Date???: FS crew did final check on this site sometime. Successful with 3 fledged.

## 2011

22 JUN: In to measure unless it is occupied. Found new nest and it is OCCUPIED. Marked it as BC 2011. Measured all other trees and have to note that the tree sign on 62 says 45. These got reversed somehow. While there, I heard beg call below nest sites down drainage. It was adult sounding and it was moving- presumed it to be a female that was after the male with prey. Walked down and finally saw her fly over to check me out right at tree. Nest tree is approx. 20?dbh LAOC in a rather open area on a steep slope. The tree is on the west side of creek. I followed the old skid trail, heavily grown in now, that runs right along creek in drainage bottom. Can see the LAOC across the draw easily. Nest was heavy with down and wh/wa on rim and she called at me while I marked tree. Did not stay to tag or get a good look (OP) into nest which could be done by climbing uphill from nest tree. But a T-storm was on us and I left so not to disturb her further. So Occ/ S/F, female present and calling.

## BLOWFLY SPRINGS

BS <sup>52</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999	139	7/7/99	N	S	2	
2000	140	4/27/00	Y	S	2	
2001		5/16/01		A		
2002		5/1/02		UNO		
2003		4/28/03		UNO		
2004		5/3/04		UNO		
2005		6/8/05		UNO		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

In 1999, a complaint of an angry goshawk was reported to the FS wildlife biologist by a contractor cutting on this unit and I was asked to go verify this sighting. This one stand has good complex cover but is not a typical mature stand in the manner of old growth. Logging units have been sold and cut in most of the surrounding area, except for some of the land that borders Little Bear Creek itself.

Since this was farther out of the boundaries of the initial surveyed areas, I have spent less time searching this region. However, loggers have reported hearing goshawk in the area when I could not pin down their nest clusters. In 2004, I performed a more extensive called search in the draw and surrounding area, but still without any luck of finding any other nest localities. Thus, the area is being continually used, yet exactly where they choose to nest has remained elusive.



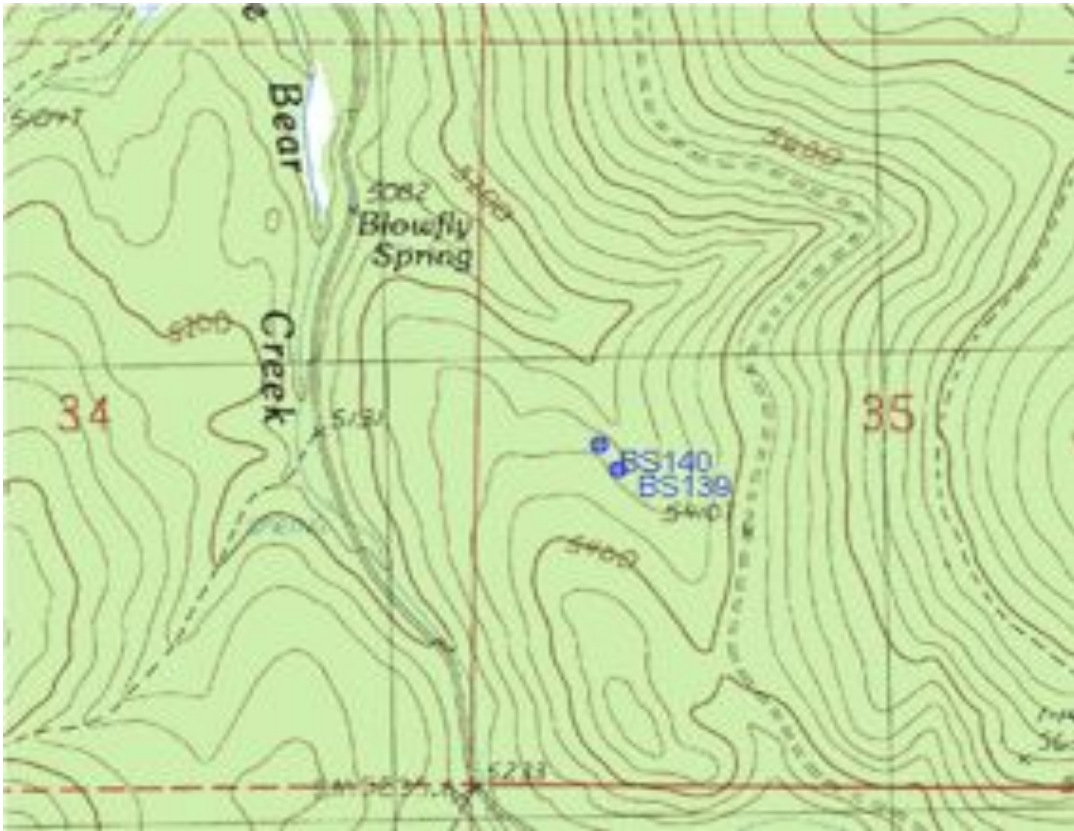


Photo above of downed Nest tree #139.

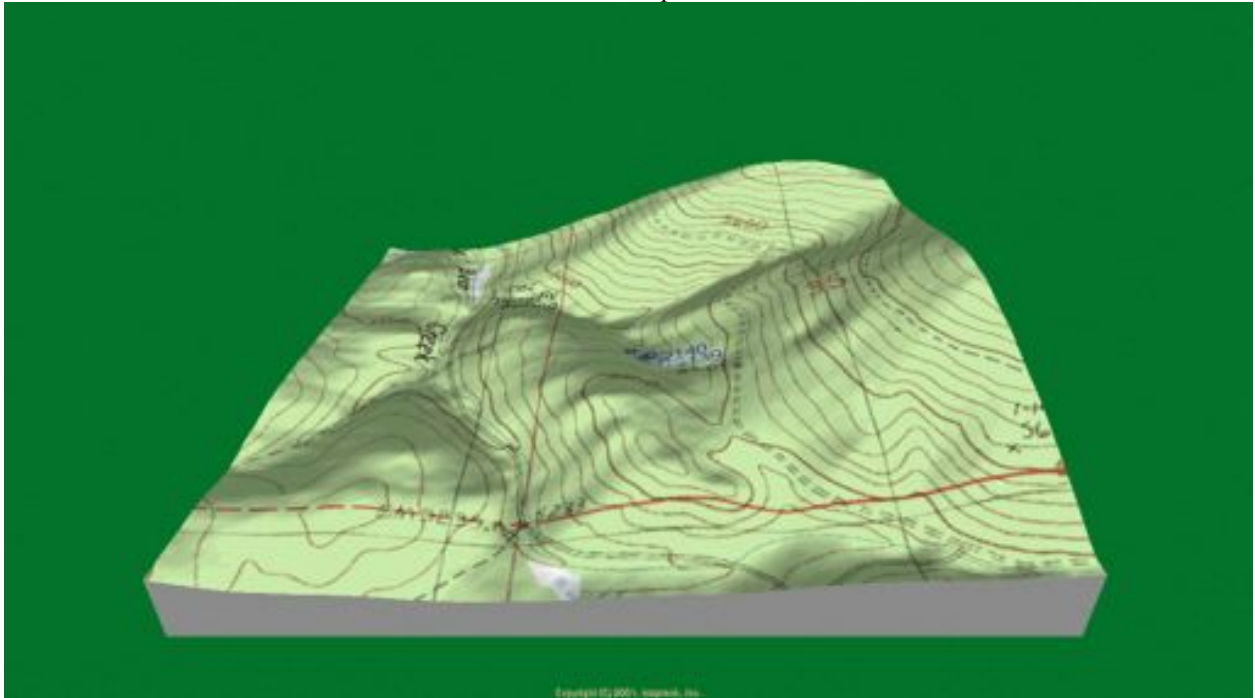
Photo below of Nest tree #140







North up



BLOWFLY SPRINGS

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BLOWFLY SPRINGS -139	NO TAG *	5292	PSME	35-38	nd	nd	270	8 to N
BLOWFLY SPRINGS -140	TAG	5270	PIPO	15	95	50	260	4 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
139								A	I	I
140									A	X

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
139	I	I	I	P	DNC	DNC	DNC	DNC	DNC	tree down
140				X						X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = No acres established for a PFA according to FS records to which I have access as of 2011.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BLOWFLY SPRINGS

#### 1999

7 JUL: This is a new territory found late this year because it is in an active cutting unit #33 that the loggers reported an angry bird in the tree. Forest Service bio (Libby) checked it out and asked me to go verify it. Found new nest in large PSME at top of the draw with 2 chicks in nest @ 36-39 days. Female was in stand and calling as I was at nest marking it.

#### 2000

27 APR: In for initial nest check. Found a new nest that is about 300 ft away, lower down in to draw, from the PSME. Tree is a small PIPO with female in nest incubating. As walking up the trail to PSME, there is a large stump on the right side. Going uphill from this a ways and looking back into the draw you can see well into the nest.

28 JUN: In for nest check. 2 chicks about 32-34 days one slightly older. Out with Sarah Herve taking pictures. Female was standing on the nest and stayed calm while we took pictures. She is more immature than other birds, bold streaking on breast and brown eyes. Sarah took 8 photos from both sides of nest. One chick was hidden for a long time by the bole of the tree, so it teaches you patience and the need to really look. This was the final check.

#### 2001

16 MAY: In for initial nest check. N139 in the PSME is still up but unused, and N140 is gone. I had missed 139 last year and said it was gone, but the marker was off so I now have re-GPSd the tree. The dead fall in this stand has increased a lot and opened up this stand. No sight/sound of goshawk.

18 JUN: In for second called search. The logging contractors have reported that they have heard a goshawk in here again this year. Out with Sarah Herve again. We searched the draw and rechecked the nest sites. We then extended the search up to the end of draw where it meets a 2 track, along where they are logging. Circled back down by stand but no new structures seen nor sight/sound of goshawk. This is active at least by other peoples account, but I did not find where they were this year.

#### 2002

1 MAY: In for initial nest check. The original nest still good but unused and no new structures seen. I searched the draw up the hill to where the road comes in from the top. No sight/sound of goshawk. There is no change in the stand structure really.

*Did not have time to search any further this territory this year.*

#### 2003

28 APR: In for initial nest check. Original nest still up but unused. I just had time to walk up drainage to check these nest sites before a hail/snow storm started with 3 close lightning bolts near me. Came back to truck ! Drove out and down main road toward Van and saw that the drainage along this area looks decent habitat and I should extend the search out to this area next time. This could be the area that they nested in last year where the loggers heard them.

*Did not get back here this year to do any other searches. I had to spend more time this year on totally re-surveying the burned territories in the Flagtail region.*

#### 2004

3 MAY: In for initial nest check. Unused- N139 is still up but newer one #140 is gone. No sight/sound of goshawk . I contoured around into the draw that runs to N of nest stand and it has some good habitat at the top, but nothing new seen. Saved track as "5-3-04 BS"

11 JUN: In for second called search. Used photo 301-79. Called and searched along the upper road that runs through the stand into and along the draw to NE. No sight/sound of goshawk. Territory is unoccupied.

## **2005**

8 JUN: In for first check. Called at bottom of stand at trail that leads up to nest. And again at the nest sites. No sight or sound of goshawk. It is eerily quiet here now for some reason. Old nest is still up but deteriorating. Unoccupied

*Did not visit/check again this year.*

## **2006-2010**

*Did not visit/check these years.*

## **2011**

24 JUN: In for final measurements. Rd # 306 is well grown in now. The large PSME is on the ground now, possibly just fell this year it looks like- still fresh green leaves. The gps mark is good but no sight or sound of goshawk. The draw still has a viable complex structure with a predominance of LAOC. I have never seen the small stream running along this draw with water in it before. The usually dry bed has water running in a rather pound stream this year. It has been a very wet year!

## FAWN

FAW <sup>28</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994	34	5/25/94		F		2 nestlings
1995		5/16/95		A		
1996		4/24/96		UNO		
1997	95	4/29/97	Y	S	2	
1998	127	6/14/98	Y	S	2	
1999	138	6/17/99	N	S	1	2 nestlings
2000		4/20/00		UNO		
2001		5/8/01		UNO		
2002	138	5/1/02		S	2	3 nestlings
2003	159	4/28/03	Y	S	1	
2004		4/26/04		UNO		
2005	176	5/9/05	Y	S/F		22 June-already fledged -adult still aggressive in stand
2006	138	5/7/06	Y	S	2	
2007		5/3/07		UNO		
2008		5/27/08		UNO		
2009		5/26/09		UNO		
2010	176	5/13/10	Y	S/F		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The Fawn nest cluster is predominately located within a draw that dips from an east to west direction. The forest structure is dominated by large PIPO with smaller fir clumps mixed in. This has been a consistently used territory with a usage rate through the years of about 59% (used 10 out of 17 years monitored).

It is a subject of concern that there are some management issues that have and will impact this territory. In 1997, through miscommunication or neglect, the TSO of a sale was not aware that goshawk seasonal restrictions were in place. It became necessary to personally inform FS personnel in order to stop logging activity in adjacent stands. In 2004, I noted that the large PIPO on the upper slopes around nest #138 were dying off. This condition has progressed through the years to where in 2008 this die off started creeping down into the main nest draw. As of last entry in 2011, I noted a large amount of firewood harvesting into the stand and specifically around nest #138. I don't know if this is a permitted wood cutting or just random, but it will impact the forest cover in this area of the territory.





Left: Nest tree#34

Right: Area of  
Nest #95

Below: Area of  
Nest #127

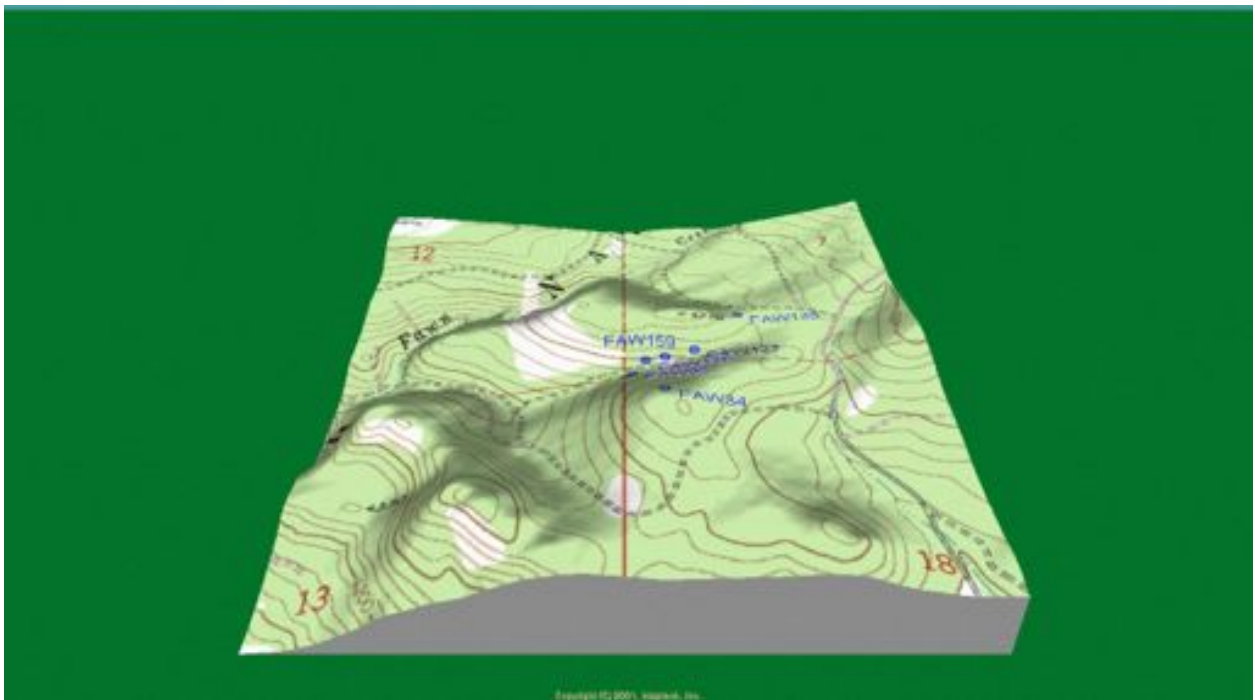


Photos Below:  
Left: Nest tree#138, Center: Nest tree #159, Right: Nest tree #176





*North up*



FAWN

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
FAWN -34	TAG	4702	PIPO	22	NW	20	240	5 to NW
FAWN -95	TAG	4580	PSME	20	SW	40	270	20 to N
FAWN -127	TAG	4622	PIPO	31	254	45	96	16 to S
FAWN -138	TAG	4684	PIPO	19	70	30	320	6 to NE
FAWN -159	TAG	4601	PIPO	29	60	60	50	16 to SE
FAWN -176	TAG	4597	PIPO	27	188	50	210	2 to NW

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
34			A	I	I	I	I	X		
95				P	P	A/R	I	X		
127							A	I	I	I
138								A	I	I
159										
176										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
34						X	X			X
95						X	X			X
127	I	X				X	X			X
138	A	I	I	I	A	I	I	I		I
159		A	I	I	I	P	I	I		I
176				A	I	I	I	I	A	I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 496 acres established according to FS records.



## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### FAWN

#### 1994

25-May-94: Nest #34 found by BV bio. 1 Adult in area very defensive and 2 nestlings in nest. Nest is in marginal habitat and very low to ground.

23-Jun-94: 1200-1300:1 dead nestling found near nest (< 3 wks) Nest had wh/wa and some sign of use. Heard goshawk beg & alarm in distance- no visuals to confirm if goshawk or mimic. Due to timing of fledging, poor habitat, dead bird, lack of goshawk presence-suspect failure

27-Jun-94: Failed nest confirmed. BV bio. spent 3 hrs. in area- no sight or sound of goshawk. She did find another old stick nest with some type of bird dead carcass near.

#### 1995

24 Apr 95: Walked into nest which appears unoccupied. As walking out to road slowly looking for other nests, an adult goshawk flew in from the south to check us out. Flew close over us (*Ted Fremd was with me*) and towards the nest site. Territory is presumed occupied at this point and will come back to find nest. At the car parked on rd#825, saw a white-headed woodpecker on large PIPO. This may be a territory 0.2 miles up rd #825 just right (W) of this road.

16 MAY: In to do stand search. Spent 3.5 hours walking the stand along rd# 827 up the drainage. I found the other nest structure (*now #95*) in a stand of DF about 10 m just south and west of the geo-section marker. This nest appears unused, but found 2 plucked breast feathers with down at base of tree. As I continued up the drainage I saw what appeared to be a goshawk, with a snake, fly near me thru the trees and head back down into the stand I had just come from. I searched back to this nest – nothing- then thoroughly searched this stand again back down to where I parked the truck. Nothing! I got the scope out of truck, went back to nest (*#95*) and really scoped it out and saw nothing. I continued searching to top of drainage circling to west and back south toward N#34. This nest is inactive as well . I thought as I was up near here I heard a faint beg call, but no luck of finding any goshawk having spent all day in this territory.

At the top of rd#827, saw RTH with 4 Ravens buzzing each other and 2 Accipiters (goshawk? Cooper?) flying very high – going off 45\* to north, toward Fawn Springs. Also saw TV and RTH again as walked back to truck. I think they are in the area, but can't find them.

After lunch, I drove to rd#828, and searched up Fawn Creek. Found a GHOW nest with both adults there. Nest was in a mistletoe clump and could not see into it, but female? was sitting on branch above it, quiet. The male was perched in a tree across from it and gave a low call when I approached. As I was walking around this tree, the male would give a one note call that sounded like a goose really – “yamp” honk type note. Only once did he give a soft “ who,who etc” call they give. They both were rather still and quiet while I was there. I only noticed the nest because of all the wh/wa on the ground as I walked by.

16 JUN: In to call area. Called 14-15 stations but no response. I did get a response from RTH 2 times to SW of nest #34 and down by junction of the two roads where I parked the truck. So a RTH nest is nearby, so perhaps a goshawk did not take this territory due to RTH. Final visit: Adult goshawk seen flying over area, but no nest found. Some covert feathers found underneath the alternate nest may have been RTH, very brownish. Status is unknown for this season's productivity but Active.

#### 1996

24 APR: in to do 1st nest ck. Nest #34 is unused and the #95 in drainage is also unused and deteriorating. No sign of goshawk. K Haines told me FS people had seen a goshawk out here earlier, so again they are in the area and I hope I can find them.

18 MAY: Used caller along drainages and PFA area. Spent approx 4 hrs in area. Did see a goshawk in distance circling and checking me out, but did not get a response when I called in that area. Also got good GRJA mimics in drainage by nest#95. It was overcast and storms passed through, only had to stop 2 times due to storm passing. Spent 4 hours calling and searching stands within the PFA drainages. Will not spend any more time here until maybe later to look for juv. perhaps.

#### 1997

29 APR: 0800 Walked into nest check. The original one #34 is unused. Walked over into the drainage and the old un-numbered nest is rebuilt – now #95. There was adult goshawk standing on limb a foot from nest watching me. She? did not flushed yet she was not on the nest either. Could be still just laying eggs or could be an adult just utilizing the area. Will know when I return.

27 MAY: In to check on nest. She is still on nest, but there is active logging going on in Unit #87 as drive in. I went in to office early (was out with John Shaeffer, volunteer and he was tired). I talked with Bob Miles and Lou Provenchur to ascertain why the timing restrictions were not in place with this unit. That did they know there was an active goshawk nest in this area! Jim Johnson- sale admin- was not doing his job, so Lou had to call the loggers (it turned out to be a unit the Tom Partin was involved in) to stop the activity till after fledgling. Libby in wildlife was contacted to write up a memo on this for Lou's files. We'll see how this all turns out in end.

5 JUL: Success- with 2 chicks in nest @ 24-26 days. The female was perched by nest and did not respond to me or Jade (*dog*) at all. So the earlier logging activity did not hurt them.

## 1998

22 APR: In for initial check. Out with Dorman and Phyllis Gregory for training. Both nest still up but in poor condition. No goshawk seen/heard. Found old wildlife sign on a tree in the draw at top of rd#827 up from N#95, but there is no nest in this tree. I was told that Anne Frost had seen a nest here many yrs ago. Phyllis said she saw a bird fly up and over us, but could not ID it. We walked along drainage and around nests in silent search briefly.

14 JUN: In to do a called search. Found new nest and it is occupied. Nest #127 is near #95 but up the draw along last of rd#827. It is at the top of the stand where the old wildlife sign is. Female responded to caller briefly, and she watched me while I GPS'd nest #95, then I looked for her. She went and perched near nest on a tree near the road, and after 15 min. she went to the nest and started incubating. It made me feel good that she felt comfortable enough with me watching and marking tree and an OP site. Will not need to come back till July, for the checks must be very young still, with her behavior. As I was searching a SSHA started calling and took off fast down the drainage. It didn't seem to be alarming at me really, so don't know if it has a territory here, or was just passing through.

It's funny and goes to show, that this new nest was right in our search pattern on first trip in. We walked right by here and didn't see it or her at all.

5 JUL: In for nest check. 2 nestlings still young @ 28 days, one slightly older. No adults seen this time. I GPS'd and signed all the nest trees also.

## 1999

1 MAY: In for initial check. Known nests are unused, only #127 is still in good shape, others mainly gone. No other activity seen – go sight/sound of goshawk.

17 JUN: in to do 2<sup>nd</sup> search and calling. When called @ nest #34 area up on top, I got a response down by N127 drainage. Searched here again, then kept walking up drainage to the park-like area with big PIPO. Called one time up here and a female flew, perched and watched. I walked over to where she came from and found new nest- #138. She did not vocalize again. This nest is low in a PIPO and there are 2 chicks in nest @ 12-14 days – very white and downy. To get to the nest would be better to come in on the closed rd#842 and walk in at green/black flagging (marked on map and GPS).

7 JUL: In for final check. The chicks were already fledged and I only saw 1 branched in a tree nearby. Female watched from perch nearby and only called once. Directions to nest – drive up #6510 about 2 miles to rd#842. Park at the closure and walk almost 0.2 mi to where road starts to curve. Green/black flagging on log pile here on left side. Walk into stand here for about 50 paces. There is a large standing dead PIPO next to tree and a leaning PIPO pole leaning out from the base of the nest tree.

## 2000

20 APR: In for initial check. Walked in from upper rd#842. No nests used, or new, but possibly at #127. This nest looked a little built up- more substantial than I recall. Will check later.

13 JUN: In for 2<sup>nd</sup> search and caller. Walked and called by and around all the know nest areas. No sight/sound of goshawk. Re-GPS'd all trees for greater accuracy.

*Did not do any other searches at this territory.*

## 2001

8 MAY: In for initial search. Walked all around, between, and through known nesting area. No sight/sound of goshawk.

*Did not do any other searches at this territory this summer.*

## 2002

1 MAY: In for initial check. Occupied at nest #138, female on nest incubating. A huge herd of elk crossed into this stand while I was driving out- passed right in front of me.

14JUN: First nest check. 3 chicks in nest 2 @ 21 days and 1 smaller or younger one. Another great viewing experience. Female was silent as I walked in to set up scope. As I did this I heard the male give a guk call a few times in stand a bit off. The female started wailing and flew off to the male for a food exchange that was vocal. Then the female came back to the nest with all the chicks sitting up. She wailed a few more times while on the nest. The male also flew in and perched in line-of-sight of the nest so I had all the family in my field of vision for a time. The male then flew over me off into the stand after awhile. I then watched the female feed the chicks for a long time. She would tear a bit off and the chicks would peck and fight for it. It was a fairly even division of food/chick even the smallest one would win a tug-of-war. When she finished, she hopped to a branch at the edge of nest and looked directly at me- a long stare down! She then flew right at me, a semi-stoop, silently perched above me. Her disengagement queue!! I thanked her with a heart-salute for letting me watch her feed her brood. It was great.

28 JUN: In for 2<sup>nd</sup> check. Only 2 chicks in nest @ 28-30 days. I guess the smallest didn't make it- either out competed for food, or eaten by sibs or predator. As I walked in, one adult was perched away from nest and called and stooped as I arrived. After checking nest, I heard a wail call way off to the NW. I went that way searching thinking possibly that it might be an early fledgling?, but as I got about 300m from nest I saw the other adult flying in a beeline, wailing, toward the nest. It was the other adult out hunting, that had heard the calls at me, and came back to protect the nest, wailing all the time while flying.

## 2003

28 APR: In for initial nest check. Found a new nest with female on nest incubating. She stayed quiet and hunkered down as I was walking around. This new one is down in the drainage where old historical nest was and near N127. I made a track "18-APR-03 FAWN" that starts at N138 area and goes over the top of hill here to a juniper = "trl-jun". This is the beginning of the game trail that goes to the hillside above the nest to get a good look into nest. The nest is hard to see into and I had to walk around some to find a good OP.

16 JUN: In for nest check. 1 chick @ 17-19 days. I marked the tree as "FAW 03". I got lost going in and had to go right to the tree to see nest again. Female was quiet and perched on branch by nest, watching me the whole time. She did not move or call at me. When I finally got a good OP again, she was still watching me and the chick alert and active. I watched her watch the male as he flew into trees around me. The only response from them was a soft guk coming from the male. It was all very calm and peaceful. This was an older female with grey chest to compare the RSS female too.

1 JUL: Final check. Out with K Schuetz for last of nest checks. He has never had the chance to see goshawk so he finally had a time he could come out with me. Successful with only the 1 chick @ 32-34 days. No adults seen or heard, marked a better OP site. Walked around the base of tree to see if any bodies or other tragedies were evident.

## 2004

26 APR: In for initial check. Spent 1:51 hr @ 1.9 mi. All nest unused, only 2 up still. Walked stand but no sight/sound of goshawk. Lots of woodpeckers and nuthatches. Many of the large PIPO around N138 are dying or dead.

31 MAY: Out with T Fremd (TJF) on Memorial Day to call area. Using good 2001 aerial photos. Called draw along road to N of Fawn Spgs while TJF drove down the road. Called and search the draw that comes S from springs along the road. It looks good on aerial photo # 401-226 (outlined in yellow) but it is mostly older 2<sup>nd</sup> growth all even age trees. The only large PIPO up here are along the draw and road. Actually all the large ones you can make out on the aerial photo. No goshawk response, but as TJF was sitting at the road closure, he observed a great display of STJA -3 groups- reacting to my caller. I could not see or hear them but, only when I got closer to the parked car and they had flown out to find what I was. Saved track of all my route. I walked and called all the good habitat on the photo. No sight/sound of goshawk. All nests that are up still unused. The rd. 828 of draw along Fawn Ck that I called many years ago, looks a lot better now that all the roads are closed into this area. Fawn UNOCCP this year.

## 2005

9 MAY: In for first check. Occupied on a new nest down by #159 along the 2-track that runs through this draw. Can see well into nest. Female incubating on nest that is a little exposed at the end of a branch of large PIPO. OP is right along the track where green/black flag is right by a blue-lined PSME.

22 JUN: Weather: clear and sunny. This will probably be my last day this year. Seems all are fledging early relatively this year and I can't really do a whole lot more. Nest check. Assuming successful- but nest was empty. By dawn and white wash on nest it appears that chicks were reared to fledgling age. Also female still calling and aggressive when I walked into the stand of small firs about 50 feet from nest tree. I did not ever see or hear any juveniles on searching, but her behavior is consistent with protecting young. So again another early fledged nest, number of young unknown.

## 2006

7 MAY: In for first check. Occupied in nest #138, female incubating. Temp still about 48 deg, light rain, but she stayed on nest.

20 JUN: Have been working a lot at BMH (*hospital*) also gone to many DG (*disc golf*) tournaments, so not as much field time. Successful with 2 ? @ about 28 days. I think 2, but one was tucked in low behind the one I saw. Female called and stooped at me- so didn't stay too long to disturb them.

## 2007

3 MAY: In for first check. Unoccupied, no sight or sound of goshawk. No known nests used and did not see any sign of goshawk. Did take measurements on all nest trees for FS and entered them into GPS unit.

*Did not visit/check again this year.*

## 2008

27 MAY: In for first check. No sight or sound of goshawk. Few nests still up, but no new usage. The big PIPOs are dying off in upper area, between #138 and #127. Lots of change in the forest here noted.

*Did not visit/check again this year.*

## 2009

26 MAY: In for first check. Note the road block on rd 842 is now down. Was this done by FS or vandals? Wood cutting recently and ongoing of the large PIPO around nest #138. Unoccupied at old homestead nest stand.

*Did not visit/check again this year.*

## 2010

13 MAY: In for first check. Occupied female incubating on nest #176. Used caller 2 times and got a fly over from male but no vocals from either bird. Female stayed tight on nest. TJJ found her first and she didn't move. Lots of dead/downfall of the larger PIPO now down here also. Lots of wood cutters in here also. Road closure is still down, and if there is a contract to cut dead wood this needs to be stopped for nesting season.

Neither FS crew nor I got back into area to check final status of this territory. SO considered occupied for this year.

## 2011

26 MAY: 44 degrees at home! Really a long cold rain/snow Spring. Even this last week of May, cannot get into field with this continued cold weather and snow showers at higher elevation. Was going to get out to Dixie/Davis Ck trail to check on the 3 goshawk territory that FS contracted out to me this year, but big snowstorm last night. Today still cool and possibly continuing snow.

At FAW to measure and it is 40\* at noon. There is snow on ground here from last night's storm, melting off but snow skiffs at this elevation! No nests used and no sight or sound of goshawk while here. Have photos of some of the dead/down large PIPO in area now. 3 nests still up and the gps markers are pretty good in here.

## LP DOG

LP <sup>27</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						#22 nest used in 1991 not checked in 1992 or 1993
1993						
1994	47	5/31/94	Y	S	3	
1995	75	7/8/95	N	S/F	?	Found late in season in logging unit by FS-Observed 1 fledgling
1996		4/30/96		A		
1997	105	5/14/97	Y	S/F		No productivity count done
1998		5/3/98		UNO		
1999		5/1/99		UNO		
2000		5/23/00		UNO		
2001		5/8/01		UNO		
2002		6/5/02		UNO		
2003		5/27/03		UNO		
2004		5/13/04		UNO		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010		5/17/10		DNC		Training for FS crew on goshawk calling stations

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory is a story of extirpating goshawk within the time span that it has been monitored. I essentially made a decision after 2003 that this would not be thoroughly monitored every year. Any goshawk habitat (in what we assume and observe to be) was totally compromised and no nesting goshawk have been observed in this area since 1997.

The first nest #22 (*shown in photo to left as it looks in 2011*) was found while planning a timber sale sometime in the 1980's, and the nest tree stand itself was saved. Later, during the era of designating old growth areas on the forest, this stand became part of "Lodge Pole DOG" (LP DOG). When first being monitored, the lodge pole in this territory were starting to show some diseased and dying clumps; and, in 1994, the forest service was already planning cutting units along the ridge which contained the nest cluster. Some of the planned and marked cutting units had to be rearranged to accommodate the known nests at the time. This was done to an extent and a PFA was set up that included Powell Meadow territory and a patch work of marginal habitats to the north of nest #47, but did not include any of the good possible habitat to the south of #47 along this ridge.



Nest area of #47 with nest tree on ground in burned area



Unfortunately, in 1995, a new nest (#75) was established outside the southern boundary of the PFA in a sold cutting unit. Since this was a sold timber sale, there was little effort in trying to renegotiate this contract and the area was cut totally eliminating habitat on the south portion of this ridge. The contractors were held to a timing restriction on not cutting during the breeding season, however, this cutting drastically changed the structure of this habitat becoming a drier open area with brushy understory with a few large trees left. In addition, this area was machine piled in 2001 and “mac-

tracked” in 2002 (a procedure that chips and mulches the brush piles left from logging). Goshawk did establish nest sites in the northern part of the ridge in 1996 and 1997, but now even this part of the ridge is deteriorating with a lot of dead and down small lodge pole littering the understory with a few large PIPO standing. In 2011, pictures of the southern side of this PFA

exhibit a healthier aspect in not any down and dead understory; however, it is a monoculture of single age trees, with little multistory structure to it.

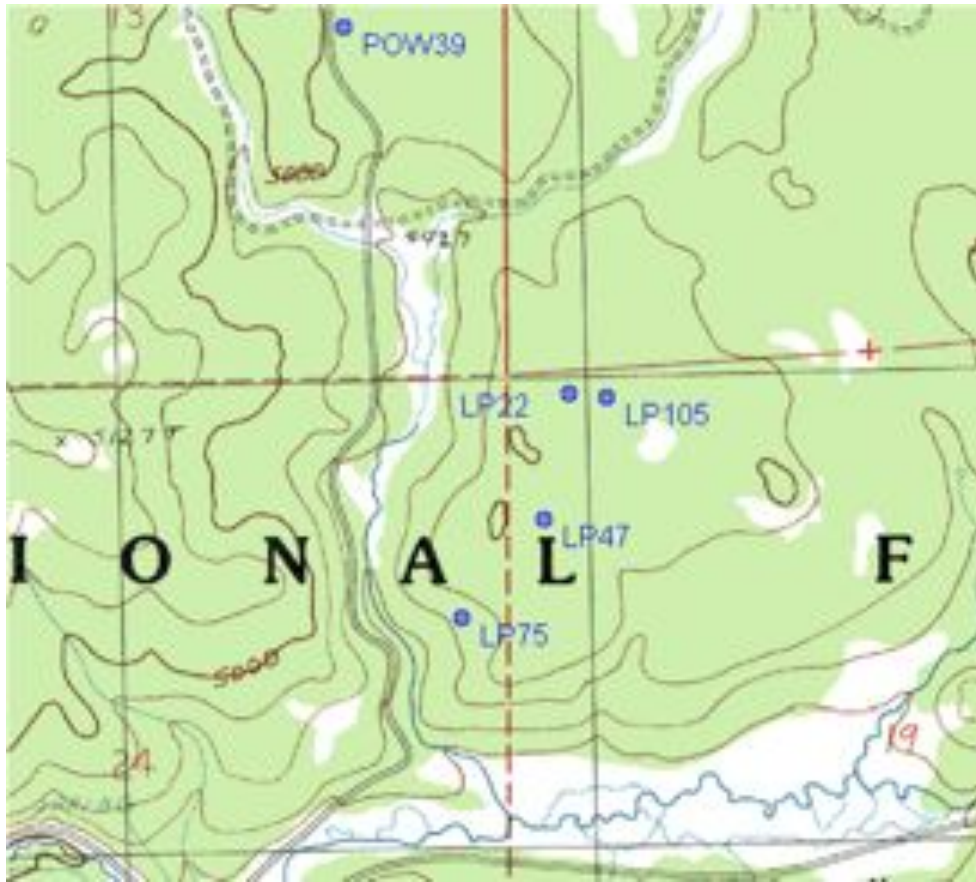


Photo above: Nest tree #75 as of 2011. Surrounding forest and nest stand was cut in 1995.

Photo to right: Area of Nest tree #105







North up



LP DOG TERRITORY

## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
L P DOG -22	TAG	4969	PIPO	32	nd	35	flat	flat
L P DOG -47	NO TAG *	4977	PIPO	25	SE	50	28	22 to SE
L P DOG -75	TAG	4931	PIPO	29	SE	40	120	18 to SW
LP DOG -105	TAG	4958	LOD POL	10	W	30	flat	flat

## NEST USAGE AND LONGEVITY

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
22		I	X							
47			A	I	I	I	I	X		
75				A	I	I	I	I	I	X
105						A	I	I	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
22				DNC	DNC	DNC	DNC	DNC	DNC	X
47										tree down
75										X
105	I	P	P							X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = 381 acres established according to FS records; however, I sincerely doubt that any of these parcels are in a healthy and effective condition to be called a PFA. As of 2011, the stands on the northern side of this ridge (around nests #22 and #105), the down, dead lodge pole have greatly increased since 1994. But, the southern side of this area (around #75) which has been subjected to timber cuts has a healthier aspect to it yet it is a uniform structure of single age trees now. There is now a mosaic of forest structure all along this ridge, more variety than when first being monitored; however, I would not expect goshawk to nest here in the near future.



## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### LP DOG

#### 1994

31-May-94: 1145-1245: Walked into historical nest sites. Nest #22 is down on ground with eggshell fragments- the #22 nest used last in '91 and not checked in 1992 or 1993. Alternate nest#47 to S is occupied- 1 Adult on nest incubating/brooding. Marked location on map. Appears this territory moves -down the ridge, or still possibly alternatives for Powell Meadow area.

8-Jun-94: Nest check with M Penniger, wildlife biologist. Flagged way into tree and marked on photo, hard one to find otherwise. One adult was at nest. After awhile, she flushed off and kekked at us. 2 nestlings 9-12 days old. Lots of blue line in this area, it is part of a sale. He will work to protect nest from harvest unit it is in.

1-Jul-94: Nest check at #47.1145-1200:Fledgling check- 3 nestling still at nest , 1 @ 34-36 and 2 @ 36-38 days. 1 Adult vocal and defensive (female?)- no bands on this bird.

#### 1995

PFA: 30 ac. protected at nest site, 477 ac (300 ac in high CC) established in '94. This pfa also encompassed Nest # 39 (Powell Meadow)

24 Apr: Initial check at Nest #47. Still in good shape, but nest unused. Need to come back and check all of ridge to north going to old nest site.

26Apr: Walked ridge along between the nests, up through#22, no sight/sound of goshawk.

13 July: Found out that one of the bios for FS was taken to a new nest that was SW of the known goshawk sites. The logging units had been marked to be cut this season. I went out early to check to see if any of the known sites were occupied thus we could tell the loggers that they needed to follow the time limit if goshawk in the area. I went north of the cut units, where nests were, and did not bother checking the whole ridge. The goshawk had taken a new nest site in the middle of the cut unit to SW. Loggers took Libby Knotts (*FS biologist*) out to check nest on 8 July when goshawk were supposedly in the nest. She took me out to show nest, they had saved a small area around the nest tree, we collected pellets, but no goshawk in evidence. I will go out on Sat. to try to find juveniles, if in area still.

17 July: Went into check on the nest I missed! Collected more pellets at #75. I did see one fledgling near nest #47 though. So the #75 was successful but don't know how many chicks produced. Marked new route to #22 which is outside of the logging units. There are blue-lined trees all around #47 and #75 and they will log this area sometime this year now. There still is a timing restriction placed on the cutting because of the goshawk.

#### 1996

30 APR: in to do 1st nest ck. All nests unused and original one in lg PIPO to N is still gone. Logging occurred here late last summer/fall. The whole stand is very different now. More open and canopy closure is lower. A few large trees left, but it doesn't have the same flavor as it did. The stand around #47, dead PIPO, is very open and hot now. They thinned out the smaller firs surrounding this small depression and the shade component is gone.

30 Apr: In for initial check. This area is now newly logged. The nest from last year. #75 was a little protected, but they did not start cutting till after fledgling period. The territory looks completely different, the cuts are all around the lower part of this ridge, around #47 and #74. The stand is rather open now and less shady for sure. The old large PIPO of nest #22 area is still uncut, but is looking rattier each year. No goshawk seen as walked the stand and nests unused.

29 May: Second search and using caller. I started at LP#75 and worked my way up north along the ridge through the meadow and up to Powell #39 (see map). When I was by old #22, a goshawk popped up and responded with alarm call. A large bird with

fluffy splayed out tail coverts, and by voice I thought it was female. She flew off to the NE. I followed and searched but this leads into a small size LP stand and then over ridge to the tree plantation. As I walked back toward #22, I heard several beg calls to north of #22. I searched along edge of ridge to where it meets the clear-cut, but found no nest or goshawk. I came back to the #22 stand and while sitting taking a break, I saw the goshawk perched watching me. She silently flew off north again, and then the series of beg calls faded off to the NE again. (*Note: I believe that the next year's nest that I will find in 1997, was being used this year- I just didn't see it at this time*). I did not see any new structures in this stand. Appears that this goshawk may be a hunting male or a non-breeder perhaps. Will go start search at Powell #39 and work my way down from the NE into this stand to see if I can pick them up. (see map of area covered)

4 June: Spent 2.5 hours calling area within a PFA range of nest #22 and Nest#39 (Powell Mea.). No sight/sound of goshawk this time. Called the area to west of #39, where an old structure was at a road junction, but no nest nor goshawk. So LP Dog was utilized by goshawk this year- probably hunting male? (but there were beg calls that indicates differently). The goshawk responded to the alarm call but no real territorial display and no structure found. This whole area is very chopped up - just thin strips of habitat between clear cuts and lodgepole plantations.

### 1997

24 Apr: In for initial check. Parked at first turnout on the two track and can walk right up to #75 now, very open and lots of brush on ground. Nest #75 and #47 unused. Nest #22 is gone now. As I was walking toward #22 area I heard a good GRJA mimic or possibly a goshawk in area. Nothing seen though. Need to try calling the large PIPO stand that is across the main road from here to west. It looks like suitable habitat.

14 May: Unexpectedly, I found new nest site. Was walking in toward #22 area (looking for a good BFL Cornell study plot) when I heard a beg call. I walked through the lodgepole stand due east of #22 into the open area where a lot of dead fall is crisscrossing the ground. Marked a game trail to follow out into the opening where another tree with flagging is the OP for the nest. At OP, look to the north and a small diameter lodgepole has the nest right on the bole facing east. Female was on the nest incubating. On my first search, I did not walk directly by this nest, I was screened by the LP dense stand. This is the same place that I got the response from the goshawk last year. I guess I did not come out into the opening far enough last year in my search. That is if this was the nest used last year (?).

5 July: IN for nestling check. Possibly fledged very early, or it failed. No goshawk seen here. Seemingly very little wh/wa or down on the rim nor on the ground. Occupied for sure, but can't really determine for sure if status S/F?

### 1998

3 May: In for initial check. Checked on the 3 nests still up, but all unused. Walked stand between these, but no sight/sound of goshawk.

*Never went back to this territory this year to do any further search.*

### 1999

1 May: In for initial check. Only 2 of the 4 structures are up now. Walked stand but no sight/sound of goshawk.

24 June: In to do search with the caller. Called in the stand and in area (see map with the GPS route marked). Remarkd ,GPS'd nest tree #22 and #105. No sight/sound of goshawk.

### 2000

23 May: In for initial check and used the caller also. Walked the stand and ridge of nest sites, no sight/sound of goshawk. Two nest still up, #75 and #105. I have given up on this territory, it just is trashed!

### 2001

8 May: In for initial check. Unoccupied and pretty much an extirpated territory now. The nest sites in the south end of the ridge, where the last logging was done, is now done for. There has been a massive thinning action done in this stand that has really opened up the stand, lots of down brush on ground. The 2 northern sites, #22 and #105, are still in unlogged stands, but so much downfall and dead in this area that it also has opened up. I seriously doubt that this would be suitable habitat for goshawk now, but who can say!

I will have to assess if I will even keep monitoring this territory now. The best plan would be to totally recall the region of LP Dog-Powell Meadow-Big Canyon to try to re-find any goshawk that might be using any of these stands. I have sightings of goshawk in between these territories, but have never had the time or effort to find the alternative sites, if any.

## 2002

5 JUN: (see notes of this date for Powell Meadow). After calling the 6 miles, went by to check nest sites themselves. There was a crew machine piling brush down in the lower section of LP territory where most recent logging occurred. So I drove up to the top going in by old N22 to search stand, but did little calling- would be too noticeable. Nest #105 is still up, only one left, but unused. The 2 nests that are in the area where they were mac-tracking were gone 1-2 years ago, so I will leave this area off for this year. I talked to the guys working on my way out, asking if they had been stooped by or noticed any raptors, and the answer was negative.

*Did not do any other searches at this nest site or immediate stand this summer.*

## 2003

27 MAY: In for initial check. No sight/sound of goshawk. Walked through the stand and no new structures seen. K Schuetz (*FS wildlife biologist*) said there might be another thinning unit that was close to this, but I don't think it matters anymore. It has already been impacted. The whole lower section is not suitable habitat – the nest here are all gone and it has been Mac-Trak and it is open and dry. The only possible nesting sites would be on the top part, where the original nest was found, however that is even more open with down fall now. I will not be coming back to the lower sections to check anymore, I will on the top.

*Did not do any other searches at this nest site or immediate stand this summer.*

## 2004

13 MAY: In for initial nest check. I am only checking the end of stand that has the only suitable habitat left. No new nest and unused. Even the area around the large original PIPO is getting ratty. Lots of deadfall and thick seedlings surrounded by open area. It does not have a good goshawk feel to it now. Did not spend much time here at all this year but a brief recon around the area – see note on POW for this year.

## 2005, 2006, 2007, 2008, 2009

*Did not visit/check these years.*

## 2010

17 MAY: Out with FS crew on goshawk training day. Drove into stand by original nest tree #22 to demonstrate broadcast calling technique. This whole area is now very much dead and dying dog-hair stand. The large PIPO is still up surrounded by a dense thicket of standing dead. It has even deteriorated more than last seen in 2004. Called briefly but didn't spend much quality time searching here.

## 2011

22JUN: In for final measurement. This is the least-most place I wish to see again, but this will be my last witness of this stand. The old 2-track that runs along stream is growing in which is good, but blocked by blow-down and ruts, so will enter at lower south end by the cut units. Actually, it was good to walk this out again to see how it has changed into a mosaic on this ridge. Took several photos of the cut unit (looking healthier!), the burn area around nest #47, the dead and dying in growth around #22 and #107, and a photo of a relatively healthier multistory part that has rehabilitated and is reminiscent of what it use to look like in here. No sight or sound of goshawk. But with these more recent seeming non-drought years, the forest is coming back. And I have to admit, that the southern side where the logging occurred is in a "healthier" condition than that of the dead stands that were left around the northern nests. Although healthier- it is still a monoculture single age stand with not much complexity--- I would not expect that goshawk to nest here in the near future.

## OK TRUCK BARN

OK <sup>34</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995	72	6/11/95		S	1	FS personnel reported nest sighting
1996	90	4/30/96		S	2	
1997		4/29/97		A		
1998	72	5/10/98	Y	S	3	
1999	136	5/13/99	Y	S	3	
2000	90	4/27/00	Y	S	2	
2001	72	5/16/01	Y	S/F		2 nestlings
2002		5/11/02		A		
2003		5/2/03		UNO		
2004	162	5/3/04	Y	S	2	
2005		5/9/05		A		
2006		5/8/06		UNO		
2007		5/3/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The odd name for this territory comes from the closest geographical name on the FS map to an original report of goshawk sighted in this area in 1991. This area was just outside of the initially surveyed area of 1993, so was not discovered until 1995 through a random survey for management planning. This is also one of the more highly used territories during these monitored years (usage of 77%).



Nest tree #72 and surrounding forest as of 2011. Author standing at base of tree.

This is a mature mixed old growth structure that covers the north-facing slope of the ridge interspersed with shallow swells. It has maintained its structure and health through the years but again is bordered, especially to the east, by heavily cut over land units. In 2004, when the management directive was to thin and log units in the name of forest health, the acting wildlife biologist for the district, Ken Schuetz, searched the stand with me to access the validity of thinning this unit. Trained as a silviculturist, his recommendation was to





“leave it alone.” “Thinning in a stand like this does not make that much of a difference one way or another to the “health/fire issues.... If it burns, it will completely burn, but in its present condition with the mature mix of the structure, it may not burn for many years.” He was also unaware that the goshawk found here in 1995 was the reason that this area had been removed from the timber sale being planned at that time.

Photo to Left: Area of nest tree #90.

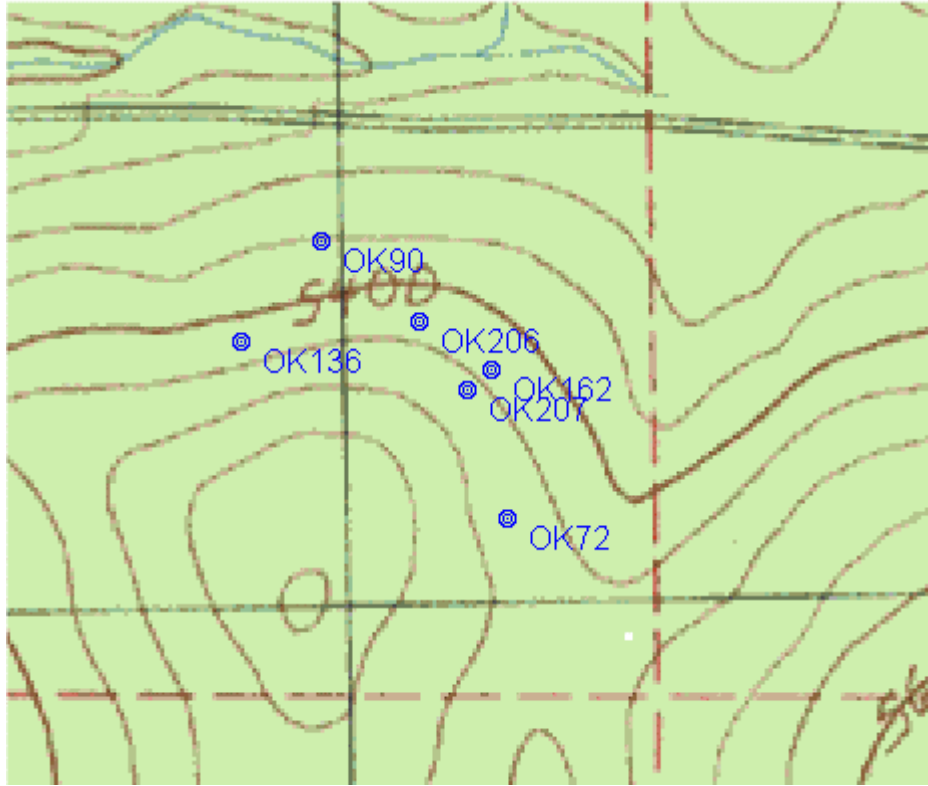


Photo Left: Nest tree #136

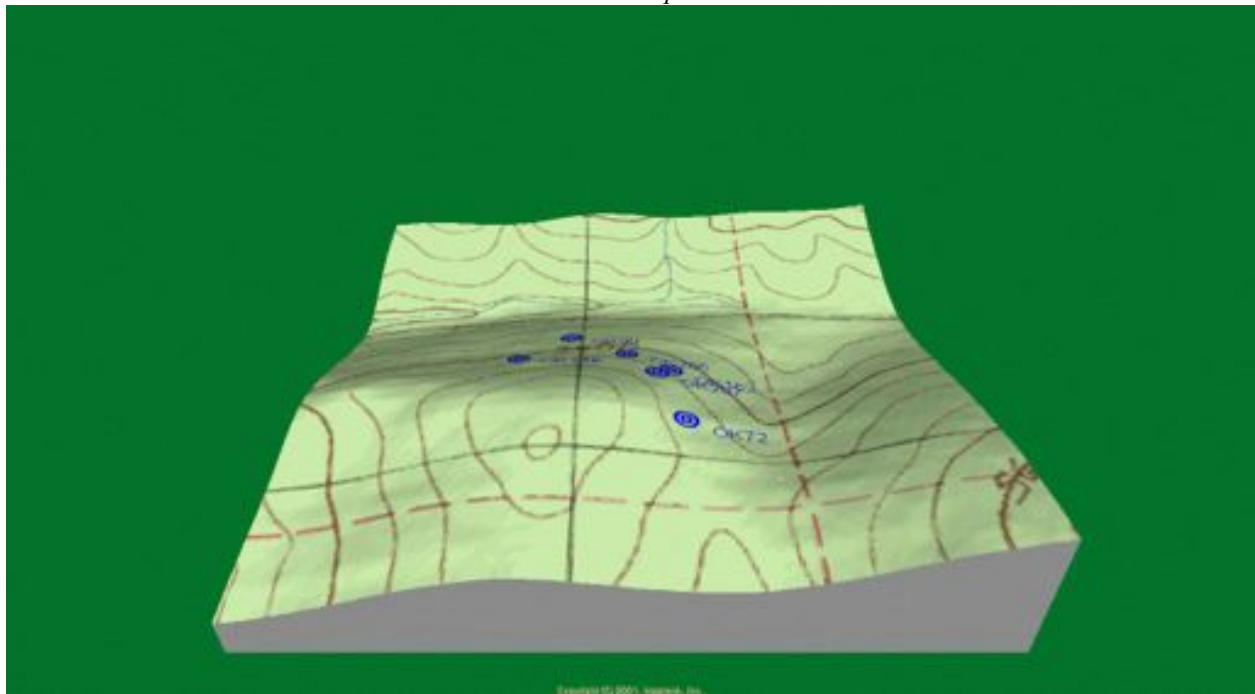
Photo lower left: Nest tree #162

Photo lower right: Nest tree #206





North up



OK TRUCK BARN

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
OK TRUCK BARN -72	TAG	5446	PSME	29	175	40	290	19 to N
OK TRUCK BARN -90	TAG	5347	LAOC	28	N	60	220	12 to NW
OK TRUCK BARN -136	TAG	5406	LAOC	24	160	50	240	16 to NW
OK TRUCK BARN -162	TAG	5404	PSME	19	220	50	245	12 to N
OK TRUCK BARN -206	TAG	5396	PSME	21	222	40	275	18 to N
OK TRUCK BARN -207	TAG	5424	PSME	28	220	70	320	20 to NE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
72				A	I	I	A	I	I	A
90					A	A?	I	I	A	I
136								A	I	I
162										
206										
207										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
72	I	X			X	X	DNC	DNC	DNC	X
90	I	X			X					X
136	I	I	I	I	I	I				P
162			A	I	I	P				P
206		I	I			X				I
207				I		I				P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 437 acres established according to FS records.

### Recordings

In 1995- female and male adult vocalizations *ok truck barn 95 Jul6.mp3* and *ok truck barn 95 Jun30.mp3*

In 1996- female and male adult and juvenile vocalizations *ok truck barn 96 Jul4.mp3*

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### OK TRUCK BARN

#### 1995

30 June: This is a new territory (nest) that is about 1/2 mile west from the old "Ok truck barn" site of 1991. See old maps of the area. One (2?) chicks in nest @ 26-28 days. 1 Adult, not very aggressive, only called infrequently and did not stoop. Got a few recordings of alarm call. I was 80-90m from tree and adult was flying and perching about 100m away while I was recording. Nice habitat, in a small depression, nest found by BVRD bios while checking on a timber sale on 11 June.

6 July: In for second nest check. 1 chick still in nest @ 32-34 days. Got a good recording of both male and female but neither has bands on. I was within 80m of nest before the female started calling. A few minutes later the male came in and started calling. The female is higher in pitch and faster, the male gave 'guk' calls and slower and croakier alarm calls. They were right above me about 15-20m up. Did not collect pellets this time.

#### 1996

30 Apr: In for first nest check - nest unoccupied. Walked the stand and saw adult goshawk flying by over the stand heading west. Have strong feeling they are here.

8 May: In to do second search. I will use the caller and see if I get a response - mainly try the beg call first. It is a little early and I don't want to hassle any goshawk too much, but goshawk have been observed to display and alarm call already. Spent 3+ hrs. walking area and called ~8 stations within 1/2 mile of the nest #72, in the good habitat on either side of this drainage. I walked over toward the old OK truck barn site and most of this area is on old cutting unit. It is primarily only 2-story but with large diameter PIPO and LAOC, but it was thinned a long time ago and is not multi-story habitat like that around #72. The good habitat is going north of #72 toward highway and west along the contour of the ridge. No sight or sound of goshawk. This is early so perhaps they are just not responding or they are not here. Started with beg call, but tape is so bad it is useless, thus was using alarm call mostly.

13 June: In to call one more time. Yes, found new nest to the northwest of old #72 and it is occupied. Got both male and female recordings with territorial displays. An ABGR is flagged and west ~100m of nest #72. The drainage that slopes NNW down to highway is where new site is. Could not find any nest at this time - flagged area where they were most vocal. They both settled down after awhile and I did not see or hear anymore. So, when called in early May it was too early to get a response!

4 July: In to find nest. 2 fledglings @ 38-40 days are already branched. Both adults were there, vocal and aggressive. Recorded both adults and neither of them has a band. One of the juv. gave an alarm call. Collected pellets and wrote directions to new nest tree. When I came in on 8 May and called, I was right by this nest and got no response!! She was in nest incubating. obviously, but nest still was successful even with this disturbance that early in May - Good!

#### 1997

29 Apr: Into do first nest check. Nest #90, last year's, appears to be occupied or if not, a new one in the near vicinity. The #90 looks unused but when nearing this tree, I saw a large bird fly off and perch nearby. As I spent time walking past and above this area I finally got a weak alarm call and one stoop from a goshawk. I left the stand then because a brief hail storm had passed during the time I was searching and I didn't want her off the nest for very long. I at least know where to search in June now.

5 July: Never got a chance to get back into stand to find nest this year. Walked all around the area but could not see any structure that looked used. No sight/sound of goshawk today, so territory was active this year, but no definite data collected as to fledglings.

#### 1998

10 May: In for first nest check. Nest #72 is occupied, female on nest incubating. Re-flagged path into drainage and the OP site @ the large LAOC to south of nest.



17 June: Nest check with 3 older chicks @ 26-28 days. As walked up to OP, saw that female was feeding on nest. If I had been alone I could have stopped so she didn't notice me and watched her. But was with Ken Bush the USFS volunteer this day, and she saw the two of us. She came off nest calling and stooping. This is an early nester, like Starr is this year.

## 1999

13 May: In for first check. Have GPSIII to track route into drainage this year. New nest occupied over by the #90 nest, tall LAOC to the east of #90. Have marked a double PSME as good OP site that is uphill from nest with a good view into nest.

23 June: In for fledgling check. 3 chicks in nest @ ~17 days old. Female was perched on nest, silent and watching me the whole time I was crashing around. I lost my way at first and had to search for OP site. I GPS'd the OP so will be able to come in from the highway next time - shorter!

7 July: Three chicks all in nest @ 34-36 days. No adults seen. Came in from the Hwy#16 road, marked small trees in road cut to enter into the stand. At fence line, have marked 2 trees that serve as posts, walk straight uphill from this and use GPS to get in line with the nest trees.

## 2000

27 Apr: In for first check. Nest #90 is occupied again, female on nest incubating. Both other nests still up. Marked an "OK-ST" as waypoint along the fence line on Hwy #16. This is the large PIPO to start uphill to get to nest #90. Had been camping and folboating at Canyon Meadows "Lake" last two days - it did have water in it this year. Note: on this morning Ted was taking apart the folbot and was kekked at by goshawk as I was driving away. This is another sighting of goshawk in this drainage - a possible alternative site for the Table Mtn goshawk.

28 June: Out with Sarah Herve to do last nest checks and take photos. 2 chicks still in nest @ 32-34 days. We walked in to OP above nest and the female was on nest with chicks and stayed there long enough for Sarah to get photos (which didn't turn out too well!). Chicks look good just feed and resting on nest. Female finally flushed, no bands on bird- she called a few times with a high thready voice. She was flying around us agitated finally and we left.

## 2001

16 May: In for first check. Out with Ted (*Fremd*) today. Nest #72 is occupied with female on nest incubating. Not a lot of down on nest yet, a late nester? All the old flagging from this side (to south of drainage) was gone and had to re-mark trail into depression and LAOC OP tree. We had crashed around to the east of nest tree, but female still stayed on the nest the whole time.

18 June: First fledgling check and out with Sarah Herve. Successful with 2 chicks that I could see in nest. Chicks are very young @ about 17-20 days, very downy, no color in auricle area, very small pin feathers at end of wing. Heard 2 "guk" calls from male then the female started calling and flew over us. Sarah got some photos, but still too far away, we left.

## 2002

11 MAY: In for initial nest check. Walked in from the back road and found it Active, but could not find nest. It must be over by N90. I walked all the stand and toward the end of search saw a goshawk circling and then perched on a dead fork of old PIPO on the slope toward the highway. Just watched me for long time as I searched this area but never saw a structure. I left flagging along the way to come back. It looked like a female, large and it must be an early nester. I didn't have good GPS coverage, antennae down in this stand, and got disoriented getting back to truck.

28 JUN: In for second called search. Have to call this active only because I could not find the nest. I searched a long time in the area but no nest or goshawk seen this time. It could have been a non breeder, or hunting male, that I saw in May. Or the alternate nest is outside of this stand and I haven't found it yet. I was in here long enough that if the nest was here I would have been called at, I believe.

## 2003

2 MAY: In for initial nest check. Only 1 nest is up still, but I found a new structure. I think I see down on it, but it could be old down also. It looks well built and I marked it as "03 X". It is definitely in the area I saw the goshawk last year- so if not used this year, it is where they were last year. I totally missed it because they were very passive adults and not aggressive to me at all or it had failed before I could find it. I just missed it! Nest is in a PSME with a candelabra top hard to see into. I have flagging on 2 twin trees and a stump by tree. I had switched the nest numbers in GPS and need to edit them in records #90 in the GPS should be #136.

26 JUN: In for second called search. I just ran one line thru the stand calling stations, but got no response. This is all that I will have time to do here this year.

## **2004**

3 MAY: In for initial nest check. K Schuetz out with me to see another territory. Occupied in a new nest. All other nests are gone except the "X 03" in the PSME. New nest is in swale where the original nest was found in a small LAOC. As first started walking in from the dirt road heard a beg call I thought was off toward nests closer to highway. Shortly after that heard beg call but from new nest area, but I thought this was a mimic. We searched the nest sites first above highway and only found new nest as working our way back up slope. Female on nest incubating. Flagged tree and area to come back in later. KS ideas about this territory being in a mixed old growth stand was to leave it alone. Thinning in a stand like this does not make that much of a difference. If it burns, it will completely, but in its condition with the mix it may not for years. He asked if the goshawk found here was the reason this had not been cut and I explained that yes goshawk was found in a preliminary designation of units and was saved.

17 JUN: In for nest check. Successful with 2 chicks @24-26d. Walked in from rd 16 highway, and can see them plainly from W side of ridge, where I usually follow the game trail up. Female was in stand and called and stooped at me when I was only ½ way up to site. She is fully mature and aggressive.

25 JUN: Final nest check. Successful with 2 still @36-38d. One was branched close to nest and one sitting in nest. Female came out when I got to the OP stooped only once. All is well here.

## **2005**

9 MAY: In for first check. Walking in from hwy 16. Unused, but I found a new nest structure right near last year's nest. It didn't look used and it did have flagging by it- marked it as OKX 05 (*now #207*). Walked all around and between nest sites- and only one I had to re-mark with GPS (*X 03=206*). It was still raining at times and some hail too, so no sight or sound of goshawk.

8 JUN: Second check and called area. Well, ACTIVE at least but I can't find them. I called first at the fence line below the nest cluster and heard a call and beg off to NE across the road. I put megaphone back in the truck and searched up to hill past old cut but found nothing. I went back and again called 3 times along fence line below nests. I walked back further E into the large draw here that is cut low down and got a good mimic. Got another goshawk call S of road this time. I searched all in here- the area that is directly to E of #72 and those nests but again found nothing. Called stations in here but no response. I went to check last year's nest and new nest found but all empty. I marked the area of beg call as "+hab call 05" I am now on road further east yet and there is some good forest that could be possible, but I'm not going to call it this year. So varied goshawk responses, but can't find nest this year.

## **2006**

8 MAY: In for first check. Unoccupied – searched all the known stands but no new nests and others unused. No sight or sound of goshawk. Did not get far back in stands and adjacent areas where I picked up goshawk call last year.

*Did not visit/check again this year.*

## **2007**

3 MAY: In for first check. Unused- no known nests occupied and no sight or sound of goshawk. Pileated WP in stand/ Took measurements for FS. Large snow storm came in, quit field work for the day.

*Did not visit/check again this year.*

## **2008, 2009, and 2010**

*Did not visit/check these years.*

## **2011**

24 JUN: In to measure. Good mimic in here and also a pileated WP pair with a nest nearby. Also got called at by Cooper's hawk, nest in here somewhere also. All looks good still and even some of my green/black flagging is still up in places. Nests seem to be protected in here from the wind. Still a viable habitat and I think goshawk are still somewhere in here by the indication of the good mimic.

## POLE CREEK

POL <sup>5</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	5	6/23/92	N	S	1	
1993	5	4/29/93	Y	F		
1994	51	6/11/94	N	S	2	
1995		5/28/95		A		
1996	51	4/30/96	Y	S	2	
1997		4/29/97		UNO		
1998	51	5/10/98	Y	S	1	
1999	5	5/13/99	Y	S	2	
2000	51	4/25/00	Y	S	2	
2001	5	5/16/01	Y	S/F		
2002	51	5/7/02	N	S	2	
2003		5/2/03		UNO		
2004	51	5/3/04	Y	S	3	
2005	177	4/23/05	Y	S	1	
2006	189	5/2/06	Y	S	3	
2007	51	4/9/07	Y	S	3	
2008		5/28/08		UNO		
2009	51	5/26/09	Y	S/F		
2010	235	5/17/10	Y	S	3	
2011	51	6/23/11	N	S/F		@ least 2 chicks in nest

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This is one of the long-standing successfully used territories (usage about 84%) monitored from the beginning in 1992. There has been a considerable amount of management activity around this territory, but it is important to note that goshawk stipulations and regulations were implemented from the start.

In 1993-94, a timber sale was planned for this area, but the TSO worked with wildlife biologists and established a "PFA" for these stands as a part of the total planning design. Logging trucks in 1994 heavily used the FS road #527 that runs right through this area. There was much traffic and noise directly above the occupied nest #51; however, the goshawks successfully fledged that year. In 1997, there were prescribed burns to the west; and in 2007, there were prescribed burns to the east. Both of these activities produced lots of smoke during the breeding season. However, goshawks have used this area again and again with success.

The structure of this habitat has remained stable in my subjective view. I noted that in 2001 there was a greater breakdown/deadfall within the small dog-hair fir stands that are spread out in the secondary forest story, but all in all, the stand has maintained its integrity. Whatever the criteria are that goshawk key on, they are very vibrant in this area still. It also shows that if the habitat is viable and any activities do not directly alter the nest stands themselves, some individual goshawks can coexist with a certain level of disturbance.



Photo to left: Nest tree #51 taken in 1996.

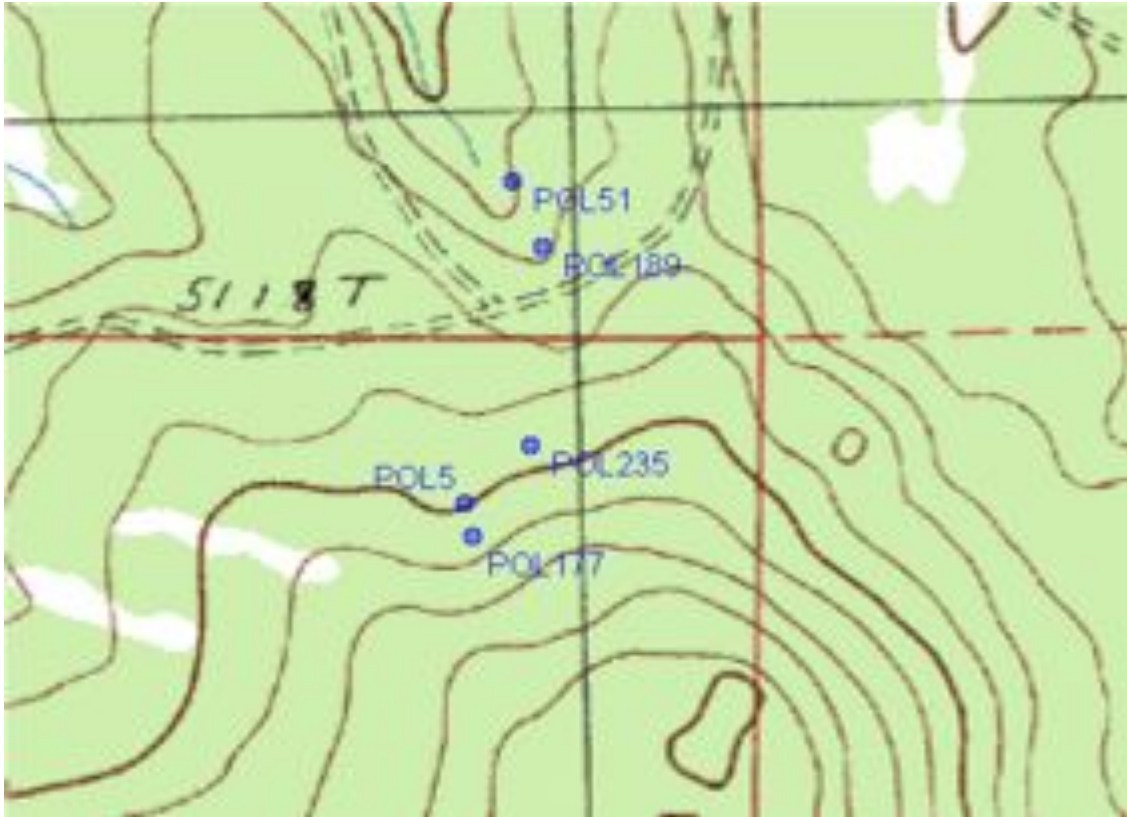
Photo to right: Same nest tree #51 taken in 2011.



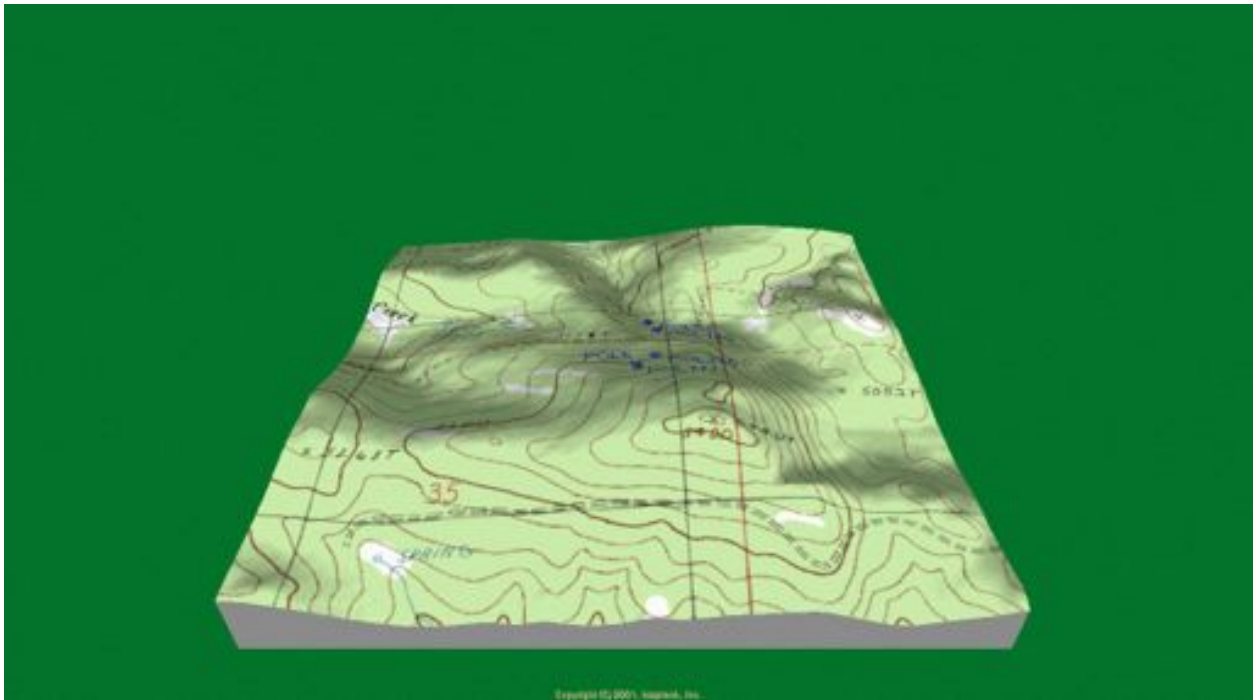
Photo lower left: Nest tree #177, also same area as nest #5. Photo lower right: Nest tree #235







North up



POLE CREEK TERRITORY

## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
POLE CREEK -05	TAG	5218	PIPO	30	N	56	240	15 to NW
POLE CREEK -51	TAG	5062	PIPO	28	150	60	150	17 to W
POLE CREEK -177	TAG	5240	LAOC	26	160	60	240	24 to NW
POLE CREEK -189	NO TAG *	5096	PSME	>12	130	50	nd	nd
POLE CREEK -235	TAG	5191	PIPO	29	60	70	240	18 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
05	A	A	I	I	I	I	I	A	I	A
51			A	I	A	I	A	I	A	I
177										
189										
235										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
05	I	I	I	I	I	I	I	I	P	P
51	A	I	A	I	I	A	I	A	I	A
177				A	I	I	I	I	I	I
189					A	I	I		X	X
235									A	I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = 434 acres established according to FS records as of 2010. In 1993, FS renegotiated a TS and some logging units were dropped around the nest site. Some logging still occurred in area though.

### Recordings

In 1996- Female adult vocalizations

*pole creek 96 Jul4.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### POLE CREEK

#### 1992

07-May-92: Surveying along transects- 1 Adult (male) response, defensive and vocalizing; Searched 20 minutes but no nest found.

23-Jun-92: 1015: Found nest, collected prey remains, shell fragments, and castings; 1 Nestling approx. 25-28 days old; 2 Ads. present, 1 (F) came in from hunting and very aggressive, other (M) just vocalizing; Nestling wailed when we left.

09-Jul-92: 1045-1145:1 Fledgling, flying and vocalizing; No adult in area. Did not try to trap because adults not present. Strong dead odor around tree, possibly dead nestling left in nest?, view not good into nest. Many pellets below nest.

04-Aug-92: 1015-1145: No adults or Fledgling in area.

#### 1993

07-Apr-93: 1510-1555: Stand watch, saw accipiter circling high; Moved in closer to '92 nest tree and heard goshawk alarm call; subsequently, heard bird flying away.

29-Apr-93: AM: 1 adult (female?) on nest, incubating

30-May-93: AM: 1 adult (female?) incubating on nest

16-Jun-93: Nest failed, no goshawk present; Shell remains collected

#### 1994

03-May-94: 1250-1630: Stand watch 3.5 hrs.; Territory appears unoccupied- no sight or sound of goshawk. Detailed notes on page 94-19 in field notebook. OP site was west of rd#531 in a new cut unit, I was concentrating on watching the ridge of nest #5 only. Cutting units were changed for goshawk protection and the cutting is done now.

25-May-94: 0800-1200: 2nd stand watch- 4 hrs. No sight or sound of goshawk- still appears unoccupied. Logging trucks hauling in and out of area directly below stand along Rd# 527. A lot of noise and disturbance. Cutting in areas to the SW way past nest stand, but lots of truck traffic and pickups etc., and can hear the saws working. In field notebook, pages 94-32 to 94-33 have detailed timing of the truck activity and noise. (Good to compare to the tolerance that goshawk does have in new nest)

31-May-94: 1100-1130: Walk into nest #5 for check, nest appears inactive. No sign of goshawk in area.

11-Jun-94: 1200+: Called in area and found new nest, just below the junction of roads. #527 & #531. All the truck traffic that had been occurring has not impacted them. Both times of the stand watches, I parked the truck down rd#531 and drove by this area. Several times the trucks stopped and did repairs at this junction, right above the nest drainage. This was an amazing day of finding the new nest. I had been calling stations along ridge above #5 when I heard a goshawk wail, that took me down into the large meadow area to E and that is south of rd#527 as you drive to the nest stand. I saw a goshawk flying low, followed it into a dense pole size PIPO stand. He flushed into a small clearing and he had just killed a rabbit (jack?) and was mantling it. I moved off about 10m and watched. In about 10 min, he started to eat the upper body, pulled the entrails out, and tried to fly with it. Took 3 tries to take off with hind 1/4 with legs attached. It was too heavy and he took off. I followed his direction that took me into the draw below road junctions. I did a call and heard a wail off in direction of nest #5, as started walking up the draw I saw new nest. Yet the female did not start calling at me until I was within 30 ft of tree. Neither adults has bands and there are 2 nestlings @ 9-12 days. As was watching nest, one of the adults came into feed, but they saw me and I left (read pages 94-50 and 94-51 in field notebook). NOTE: meadow area is hunting ground, goshawk are taking large prey (Jack rabbits and cotton tails), both adults used wail call when responding to caller at a distance, female did not respond until I was right at the nest.

05-Jul-94: Fledgling check. 2 in nest @ 38-40 days old

## 1995

**PFA:** Some area established in '93, had to renegotiate TS and some units were dropped around the nest site. Some logging still occurred in area.

26 Apr: First nest check - walked into both nests #5 and #51, both unused. #5 is still good but #51 is slightly deteriorated. No sight/sound of goshawk.

28 May: Out with Ted (*Fremd*) and Jasper (*another German Shepherd dog*) curious that we have searched this long with goshawk in the area and still no nest found. I believe it was a male that we saw and heard. On first calling stand by Nest #51, a goshawk flew over us watching by circling high, but did not vocalize at this time. Appeared to be circling southward toward nest #5. We walked and searched stand by #5, did 2 calling stations, no goshawk response. Walked down into meadow area to look and as walking back to road, saw goshawk fly to NW from road down into the same drainage as #51 nest again. We walked over and down that draw again to bottom. We walked up drainage to north again then I did 1 calling station just north of #51 and got an alarm call. It was the "kek-kek" call, but the goshawk was not very aggressive. The bird perched high in a PIPO watching. As we walked closer to bird, it stayed put, no calling, then flew off to the west, into the cut unit across the road. We followed and searched in the only trees left there, but found nothing. Don't know quite what to think about this territory! Note: a Swainson Hawk flew over us while at the #5 nest stand. Pole creek is occupied by goshawk, meaning active. This is an adult bird though narrow of chest. The fly-overs were circling high- like a hunting male. The call was not aggressive also like a male. We were in this direct area searching long enough that if there was a nest we would have found it, I believe. So my guess is that this was a non-breeding male or the nest is far away from this usual area. Perhaps will come back late June-early July and call 1 more time just in case. (see map of this year for direction of goshawk flight and area searched)

27 June: One more time here to call and search. Called drainage to the west- no response. Came back and on the first call in the meadow area to the east of nest, I got a response and an adult goshawk perched and watched me. It flew off NW into/toward drainage of #51 again. As I was walking the road heading this way, I saw an adult goshawk fly in from the NE over me and into same direction of #51. Not sure if this was a second goshawk or the same one I had picked up in the meadow. Searched that stand thoroughly again!, but found no new nest. I did a few calls in here and no response. I give up - they win this one! So, Pole Creek is occupied and active but I cannot find any nest so breeding status is unknown.

## 1996

30 Apr: In for first nest check. Nest #51 is occupied. Female on nest incubating, lot of down on one side of nest. Cannot see well into nest from the OP at the road marker. Did not check #5 nest at this time to see what condition it is in. The female looked to have a more brown colored eye rather than red when the sun shone on her.

29 May: First nestling check and possible recording. Female stayed put on nest and was very still. Lots of down, but no wh/wa in evidence yet. I believe she is still incubating and the eggs have not hatched yet- or they could be just very young 4-7 days.

27 June: Two chicks in nest @ ~24-26 days. Female came out and called as we got to OP. No recording but she has a raspy slow voice, as I recall the former bird here having. No bands on her. Still raining and the chicks stayed low in the nest. (*We= volunteer that year named Taylor- tried to take pictures.*)

4 July: Two fledglings - 1 @ 30-32 days and 1 @ 28-30 days. Female was vocal and aggressive. I got recordings of her. I had to wait quite awhile and watch before I could see both chicks.

25 JUL: in to collect pellets – no birds around at all.

## 1997

29 Apr: In for first check, but waited in the car a time while a rain/sleet/snow storm passed. Don't want to risk putting a goshawk off the nest like this am at OK truck barn! Finally a break in rain, walked to check both nests. Unoccupied- both nests still good but neither are used. No sight/sound of goshawk.

14 May: Checking out the goshawk sighting by the fire crew- this is in between Pole Creek and Seneca East. T-storm just passed through. FS has been prescription burning in and to west of Pole creek nests. Searched where goshawk was seen (see map) no nest structures seen but this is right where they burned. I'll have to ask them exactly what the response was to them, but my guess is that it was a hunting male- possibly from Pole creek? Gives me the incentive to further search those stands carefully again. I thought I would do that tonight, but I have no energy to do so.



25 May: In to do stand search. Will take the goshawk tape to use occasionally. Searched area around both nests, both still unused. Walked and did some goshawk calls along meadow, but no sight/sound of goshawk. Went to the west of these stands to search - no goshawk. Sat and listened for a while, but no goshawk seen or heard.

## 1998

10 May: In to do initial check. Nest #51 is occupied. Female incubating, only silently watched me.

17 June: First nestling check. At least 2 chicks in the nest probably @ ~ 19-22 days. Female flew out and called right as we started off the road down to nest OP. She has that raspy voice I have heard here before - possibly the same female. (*We= volunteer Ken Bush that has been coming back for years after this.*)

5 July: Only 1 fledgling in nest @ ~38 days. Walked around area but did not see any other fledgling branched. Female was perched and calling, flew around but not too upset even when I went to GPS the tree. Again, I remark on the "Ms Raspy Voice" goshawk - could be the same individual.

## 1999

13 May: In for first check. Occupied- female is on nest #5 incubating. This, the original nest found, was last used in 1993. I personally have never seen them use this one before - I was on a different crew that year.

24 June: First nestling check. 2 in nest @ 19-22 days. Walked into OP site and when I got there -she was perched behind me. She didn't stoop but called several times. She again has that same raspy voice I remember hearing here in years past. I wish I had a way to prove she is the same bird!

7 July: Last fledgling check. 2 chicks still by nest, but branched @ 34-36 days. No adults in evidence at all.

## 2000

25 Apr: In for first check. Occupied on Nest #51- female incubating. Rain had just stopped and she was low and tight down in nest. It was the little down on the rim of nest that made me see her.

28 June: Out with Sarah Herve. Last nestling check this year. 2 chicks @ ~28-30 days. Sarah got 5 photos of chicks standing on nest rim - they look healthy. No adults seen or heard.

## 2001

16 May: Out with Ted (*Fremd*) to do first checks. Nest #5 is occupied with female incubating. As we came up to OP site, which we overshot a bit, she flew off nest. OP site was a stand of dog-hair small fir, but now has a lot of deadfall. We left quickly. This appears to be a late nester, not as much down on nest as others, so they probably will fledge late.

18 June: First nest check. Successful so far- again real young and could not see any heads in nest. Female was on branch by nest as we walked up but then flushed. She alarm called at us as we walked out. (*Out with Sarah Herve today*) Can't say how young any chicks are yet - it appears to be a late year all around!

*Never got back in to check this nest again this year.*

## 2002

7 May: In for first check. Nest #51 is occupied with female in tree. As I finally could see from the OP, she was standing up in the nest scoping out the dogs (*2 German Shepherds*) as they ran down by tree. Could not see her feet for any bands. I watched a bit before she sat back down and I did not see any bodies or heads - so probably still on eggs or near hatching.

14 JUN: Two chicks, possibly 3?- @ 21 days old. White downy, were sleeping at edge of nest. Female was right in the stand waiting for me and was the most aggressive of this year yet. Stooping at me through the trees and the raspy voice that I remember here before.

28 JUN: Second check. One chick at rim @ 34 days and one in nest @ 28-30 days. 2 fledglings here and the female was aggressive, calling, stooping but not as bad as last time.

## 2003

2 MAY: In for initial check. Checked on both nests still up and ok but unused. It is spitting rain so did not check more than just walking to the nests. Note: The osprey nest that is seen from road#1619 is occupied- can see an adult in the nest.

29 MAY: In for second called search. No sight/sound of goshawk. Ran a track through the stands around down into the meadow area. No new structures seen but did pick up a raven nest near meadow. Did not find their nest but the adult was circling and calling at me with a one note gonk call. The osprey nest apparently has failed also- do not see any birds on nest now.

#### **2004**

3 MAY: In for initial nest check. N51 is occupied with female incubating. I just stopped at the OP, saw her alert and watching me and I left.

17 JUN: In for nest check. Successful with 3 chicks, 1@ 30-32d, 2@26-28d. No adults sight/sound. All peaceful, but I saw the chicks focused on something over my head that I assume was one of the adults, but no sound.

22 JUN: Final nest check. All 3 chicks look good, revise age as 2@32-34 and 1@30-32. Female was on nest feeding with all 4 of them standing. Chicks were calm apparently already feed because she was feeding herself. She flew and I got to watch the antics of the chicks for awhile, but she finally saw me- came in and stooped. She is full adult.

#### **2005**

23 APR: In for first check. Occupied-new nest with female incubating. This is in a LAOC that is just above the PIPO of #5, same draw. Clearly can see into nest by walking up hillside like you are going to old OP. Past the cut logs to 2<sup>nd</sup> flag just below rock pile at top. Take left about 100 ft. to another flag and stand by large PIPO with 2 wheels of barbed wire at base. She was watching me intently, but did not move.

22 JUN: Nest check-successful with 1 chick in nest @ 35 days. Female was aggressive and stooping so just scoped out some branches for other fledglings but did not see any. This is a nest in LAOC just UP from #5. I first went into #5's OP when she started calling and realized that new nest was uphill. Marked as "P05" for now.

#### **2006**

2 MAY: In for first check. Occupied in #177 same as last year's (wrong first impression, see following note). Nest well built up with down on rim, could barely see what I think is her tail but pretty sure she is incubating.

20 JUN: successful with 3 chicks @ 21-28 days. WOW just shows how wrong you can be with these guys. I stopped at road block and when got out of truck to walk up to nest- adult goshawk came from area of #51 and called at me. I walked up to what I thought was the occupied nest but it was not used! Went back down to area where goshawk came from and it took a lot of time to find the new nest. She is very aggressive and stoops low. Nest is in small fir stand that is very visible from the road once you get it. But-oh well.....so good thing I saw old down on the other nest because they were here but in totally different place! Sheesh!!!

#### **2007**

11 APR: Out early this year to check areas where FS wants to do spring burns. Mike Feiger is detailed here this year and C Kranich has checked nests also. CK went out and saw goshawk female? @ nest areas of #51. Will confirm nest site later. Cold, breezy, snow predicted.

18 JUN: successful with at least 3 chicks @ 32-34 days. Female was there and calling, stooping @ me. So they made it even with all the smoke and burn out here.

#### **2008**

28 MAY: Heavy rain yesterday and last night. Today again rain- overcast in AM but now starting to coalesce into wider spread storm, raining moderately, may not have a very long day. Had to wait for rain to stop, but unoccupied. All 4 nests still up and in pretty good shape, but no sight or sound of goshawk at all. This is by far the most bizarre year. I should have at least heard a goshawk by now in searching the territories. These last 2 territories were almost always used but nothing this year. I guess this deep harsh winter and prolonged cold spring did it- or perhaps it is "the perfect Storm" scenario. That the stresses have passed the thresholds for the species here to keep going. I hope not.

#### **2009**

26 MAY: In for first check- out with TJF (*Ted Fremd*). Occupied in nest #51, female on nest incubating. Watched us and stayed calm.

Only visit for this year so did not get any productivity information re: fledglings.

## **2010**

17 MAY: Out with crew of 7 seasonal FS employees hired for monitoring this year. Out to train them in some goshawk territories. Occupied in new nest. We parked all rigs off road going into original stand. Checked the nest sites below the road (#51 and #189) and unused. When we got back to cars to walk uphill, we heard beg and alarm calls. Thought it was at original nest tree, but new nest in large PIPO to E of #5. Took crew uphill to OP, but both those nests (#5 and #177) were empty, started a spread out search and one of the kids spotted the new nest. Female on nest incubating but flew off with so many people there. One of them marked nest tree with gps unit.

12 AUG: In to do measurements for write-up. Nest #189 has blown down this year. This was in the small size fir stand below the road, so no data on it. FS crew had done last check here and said this was successful with 3 chicks. While we were here measuring heard in distance a very odd beg call- but did not see the juvenile goshawk if that is what it was. This stand still looks good and viable.

## **2011**

23 JUN: In to re-measure for dip and strike. OCCUPIED in nest #51 again. At least 2+ chicks in the nest, fairly young for this time of year- white downy heads, still only about 1 inch of pin feathers (17-20 days?). Female here but didn't call at us until we were trying to find the other nest in here (189) with no luck. She did not stoop and she had a sweet clear voice. Because of all this cold/snow spring it is a late nesting and fledging year it appears. This year would be a good one to correlate weather data to other years as well as that of 2008 also.

## POWELL MEADOW

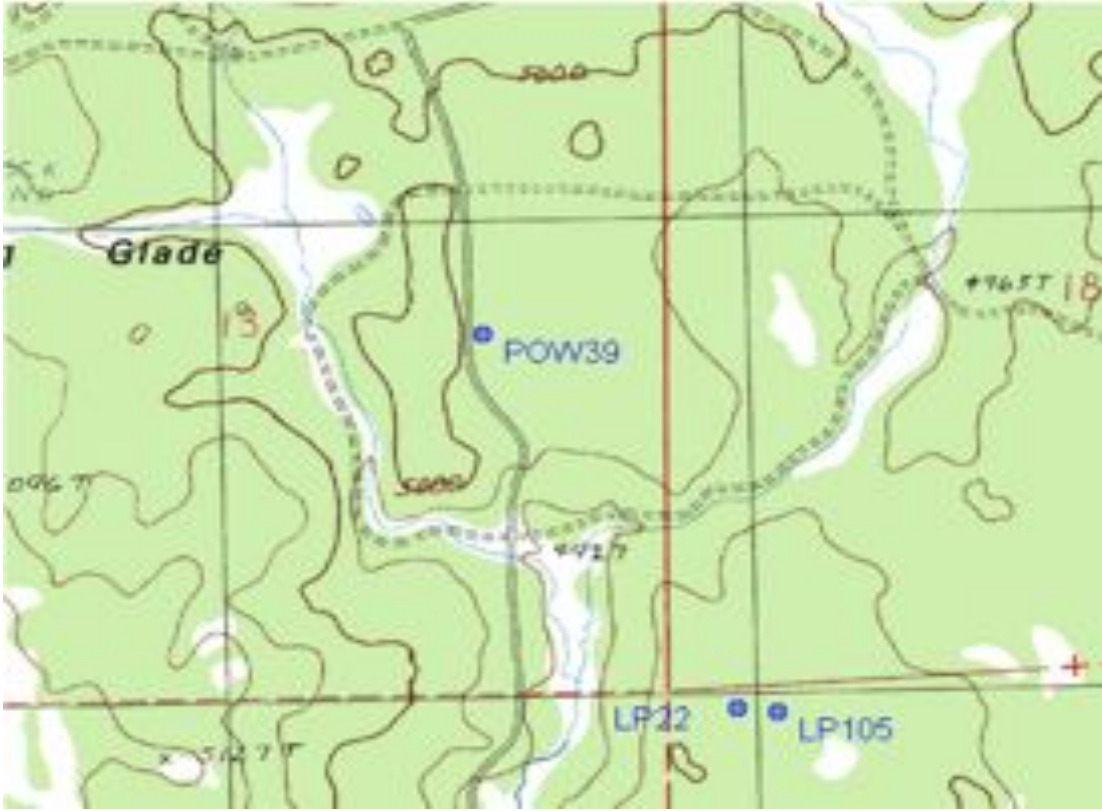
POW <sup>26</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						Not found until 1993
1993	39	7/8/93	N	S	2	
1994		5/3/94		UNO		
1995		4/24/95		UNO		
1996		4/30/96		UNO		
1997		4/24/97		UNO		
1998		5/3/98		UNO		
1999		5/1/99		UNO		
2000		4/26/00		UNO		
2001		5/8/01		UNO		
2002		5/1/02		UNO		
2003		4/28/03		UNO		
2004		4/26/04		UNO		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

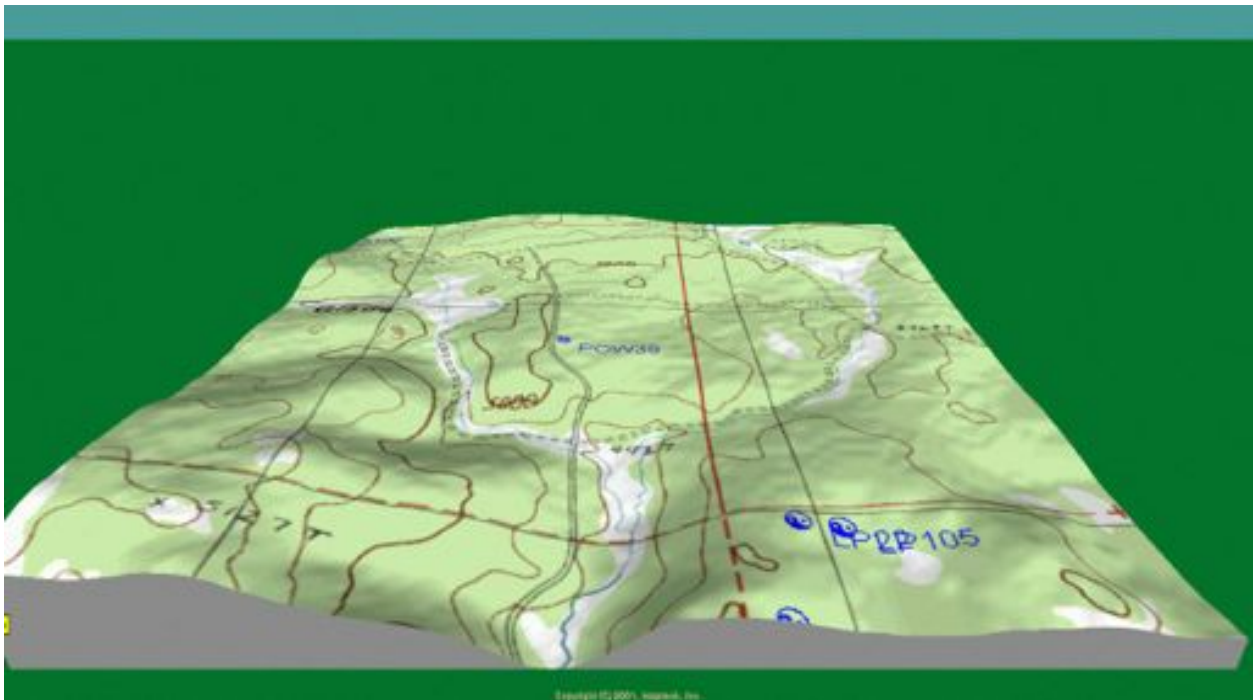
In 1992, this area was picked for inclusion into the study because goshawk had historically been in this area and the forest had become very fragmented here. The nest stand of #39 is isolated like an island in an ocean of clear cuts.

This is also adjacent to LP Dog territory, which lies along the same ridge to the south, with the “historical nest site” having been located in between these two areas. It is quite possible that Powell and LP Dog were totally one goshawk territory in the past. However, with the fragmentation and continued logging of this area (even extirpating the LP goshawk while we have been monitoring this region), this nest #39 apparently became an alternate one-time usage only. This stand is now deteriorating in that the understory is exhibiting more dead/downfall in relationship to the beginning years.

In 2002, I did an extensive called search around the joining territories of Powell Meadow, LP Dog, and Big Canyon, concentrating on the possible habitat remaining in this area. There is not much older structured forest directly to the west and the best possible area that might harbor nesting goshawk nearby would be to the northeast toward Powell Meadow proper, where road #3925 turns south to join roads #450 and 422. I did not find any goshawk in this year and have yet to find any other nest structures around this territory in the 12 years of searching here. (I stopped checking this area in 2005.)



North up



**POWELL MEADOW**

## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
POWELL MEADOWS -39	TAG	4984	PIPO	26	S	40	flat	flat

## NEST USAGE AND LONGEVITY

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
39		A	I	I	I	I	I	I	I	P

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
39	X	X	X	DNC	DNC	DNC	DNC	DNC	DNC	X

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)** = 314 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### POWELL MEADOW

#### 1992

05-May-92: Field season, stand watch and surveys with no results. Possibly due to the fragmentation by logging in area the goshawk territory moved. Did see goshawk visiting nest stand during season, but no current activity ensued this year

#### 1993

08-Jul-93: 0900: Nest #39 found with 1 Nestling, head all downy.

13-Jul-93: 1300: 2 Nestlings observed, approx. 24-28 days old. 1 adult female in area.

#### 1994

03-May-94: 0820-1200: Stand watch 3.75 hrs. Appears unoccupied, no sight or sound of goshawk. OP is E of nest tree in cutting unit. Saw RTH and Kestrels in area, got stooped by Kestrel, apparently too close to nest. Detailed notes on stand watch on page 94-17 to 94-18. Note: judging from other stand watches, if no response ensues from a close fly over by a RTH or Raven, then no goshawk are here being territorial.

25-May-94: 1618: Nest #39 is inactive. Big Canyon nest #45 has incubating adult so may be moved territory. Checked historical nests in area and other were inactive also. Historical nest is at junction of rd#413, #450, and #409. Going north on rd 413, as dead ends into #450, the only large PIPO stand directly NE of this junction has old nest in it. Large PIPO snag and nest almost gone.

#### 1995

24 Apr: In for initial check. Looked at nest #39, nest still up and in good shape. No sign of any activity, no goshawk. This nest is right between 2 territories, Big canyon and LP Dog. The #22 nest is gone, on the ground, and was so in 1994. The site is still good however, and was checked on 26 Apr 95 when the whole ridge was searched between this site and LP Dog. No other search in this territory this year. Area is surrounded by clear-cut and logged units

#### 1996

30 Apr: In for initial check. Nest unused but while I was in this stand I heard a mimic. It was very brief, but still a good mimic. This indicates that goshawk are probably nearby.

29 May: Combined search of this territory with LP Dog - see that description for same date.

4 June: Again combined search with LP Dog - see that description for same date

#### 1997

24 Apr: In for initial check. Nest #39 is still up and ok, but unused.

8 May: In the stand for a long time setting up a plot for BFL Cornell study (*one that I never finished*). Never saw or heard any goshawk at this time.

14 May: In to do the BFL survey. Called the area but no hawks or thrushes responded. I was within sight of #39.

#### 1998

3 May: In for initial check. #39 is still in good shape but unused.

*Did not visit/check again this year.*

### **1999**

1 May: In for initial check. #39 is still in good shape but unused.

24 June: In to do a search and using caller. Walked and called in nest stand, and in suitable stands nearby - across the road to the west, and to south. No sight/sound of goshawk. It is all really chopped up around here now, even more so than before.

### **2000**

26Apr: In for initial check. #39 is still in good shape but unused. Surprised that nest is still in decent shape.

*Did not visit/check again this year.*

### **2001**

8 May: In for initial check. #39 is half gone now, and unused. But while here, again, I heard another good mimic that gave an alarm and beg call. I heard the alarm call to west across the road in the stand that leads down into the large meadow area. Searched this stand and area along meadow going to north. No nest structure found. This stand is not even a very dense secondary growth yet- doesn't seem likely goshawk habitat. No sight/sound of goshawk, but if good mimics are here they pick it up from goshawk that have to be nearby. So, there has to be an alternative nest site nearby somewhere. It will take systematic calling in this region of LP Dog-PM-Big Canyon to find it.

*Did not visit/check again this year.*

### **2002**

1 MAY: Initial check on nest. Nest #39 is mostly gone now. No sight/sound of goshawk. Will have to recall this and surrounding area in June.

5 JUN: Calling stations between PM, LP Dog, and BC – track log of “BC-POW 6-5-02”. This track is 6 miles searching and calling around Wendell meadow, to Powel Meadow nest stand, up to rd#3925 to Big Canyon and around this drainage as well. No sight/sound of goshawk at all in any place. No new/old structures found.

### **2003**

28 APR: In for initial nest check. Checked the old nest area. Nest gone (or just remnants) and no new structures seen in the surrounding PIPOS. Heard a RTHA off toward clearing to E? to meadows.

*Did not have time to do any other search here this year.*

### **2004**

26 APR: In for initial nest check. Just check nest along road. Nest gone and no new structures. No sight/sound of goshawk.

28 JUN: In for second called search. Got a flat tire last time out so did not get into this area earlier. Used photo 1401-158 to check on the suitable habitat that surrounds the one nest of POW and LP dog. These stands are to the NE of LP Dog and E of POW. I walked and called these also drove all around the LP site. All this side to the E of LP is small open lodgepole or trashed stands. Did not see or hear anything all morning. These territories are in bad shape still.

### **2005, 2006, 2007, 2008, 2009, 2010**

*Did not visit/check again these years.*

### **2011**

22 JUN: Drove by to look at condition of area- no change. The contour is flat so no dip/strike measurements needed. Nest gone, but tree marked, but habitat is still in bad shape.



## ROCK SPRINGS NORTH

RSN <sup>4</sup> Year	Nest Num	Date Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	4	6/19/92	N	S	2	
1993	4	4/16/93	N	F		
1994	4	5/12/94	Y	S	3	
1995	37	5/16/95	Y	S	2	
1996	37	4/30/96	Y	S	2	
1997	108	5/14/97	Y	S	2	
1998		5/3/98		UNO		
1999	137	6/8/99	N	S	2	
2000	108	6/13/00	N	S	2	
2001	149	5/8/01	Y	S/F		
2002	108	5/1/02	Y	S	1	
2003	149	4/28/03	Y	F		
2004	149	4/26/04	Y	F		
2005	175	6/6/05	Y	S	2	
2006	187	6/20/06	N	S	2+	At least 2 in nest seen at 21 day range, could be more
2007		4/13/07		A		Adult calling in area but no nest found
2008		5/27/08		UNO		
2009		5/26/09		UNO		
2010		5/13/10		A		Goshawk flying in area and good GRJA mimics- no nest found

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory has seen one of the highest usage rates during this study (roughly used 84% of the time). This is one of the historical territories (having been found in 1990 during a timber sale planning) and the nest itself with 30 acres around Nest#4 (*shown in photo to left*) was protected. However, logging proceeded and timber cutting was heavy in some of the adjacent



surrounding areas. In 1996, the FS planned another thinning project but with stipulations to maintain the canopy closure via goshawk guidelines. This thinning did not drastically change the composition and habitability for goshawk apparently. In essence, the condition of the nesting stands observed in 1992 has remained stable (no die off of the larger trees nor noticeable decay of the understory).

Some other issues have been exposed in the management of this territory. In 2001, on my initial search, I found timber cutting units marked all through the nest stand itself which was alarming. On talking to FS personnel, I discovered that a new TSO was going ahead with a sale (initially planned in this area in '93-'94 prior to any goshawk regulations) without knowing that this had been an established

territory for years. This timber sale was dropped without any alteration of the habitat. To my dismay, this was another example of the FS losing, ignoring, or just not communicating information it had been continually supplied.

Yet again in 2004, other management activities were performed around this stand, although this time with consultation about any nesting goshawk for that year. The projects (fence building and water tank installation) seemed by a FS biologist and my own perspective to be far enough removed from the nest site, but the goshawk failed to fledge any young. So, I cannot say for sure if this activity was causal or coincidental to this year's failed status. This highlights the problem of trying to accurately predict the response of nesting goshawk to any disturbing activity during breeding season. Some goshawk will tolerate activity nearby while others may not. It is difficult imagining a suitable test of any hypotheses regarding the variability in these population



responses.



Photos from upper right in clockwise direction:

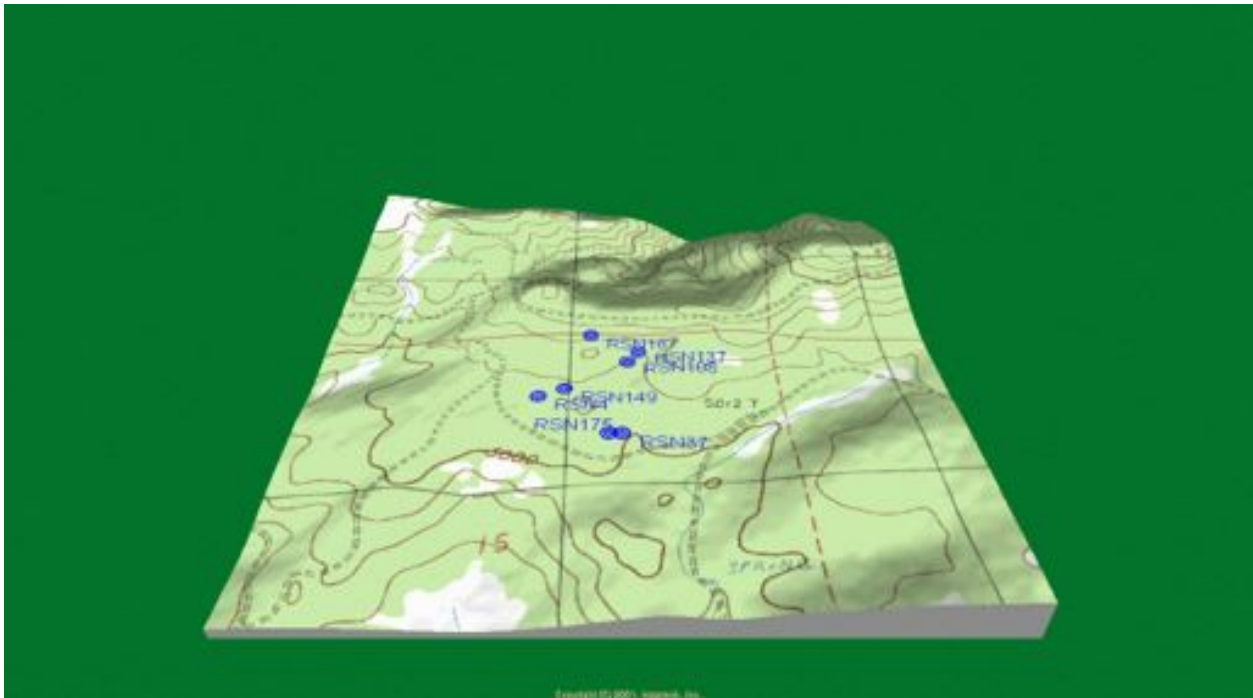
- Nest tree #37
- Nest tree #108
- Nest tree #187
- Nest tree #175
- Nest tree #137







North up



ROCK SPRINGS NORTH

## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
ROCK SPRINGS NORTH -04	TAG	5026	PIPO	23	S	51	flat	na
ROCK SPRINGS NORTH -37	TAG	5000	PIPO	27	N	45	flat	na
ROCK SPRINGS NORTH -108	TAG	5042	PIPO	41	NW	40	360	8 to E
ROCK SPRINGS NORTH -137	TAG	5051	PIPO	16	210	30	358	10 to W
ROCK SPRINGS NORTH -149	NO TAG *	5032	DD PIPO	23	140	60	flat	na
ROCK SPRINGS NORTH -175	TAG	5000	PIPO	22	208	45	360	4 to E
ROCK SPRINGS NORTH -187	TAG	5089	PIPO	29	234	40	60	10 to SE

## NEST USAGE AND LONGEVITY THROUGH THE YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
04	A	A	A	X						
37				A	A	X				
108						A	I	I	A	I
137								A	I	I
149										A
175										
187										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
04					X		X		X	X
37					X		X		X	X
108	A	I	I	I	X		X		X	X
137	I	I	I	I	I		I		P	P
149	P	A	A	I	I		X		X	tree down
175				A	I		I		X	X
187					A		X		X	X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = In 1990, protected nest stand, but allowed sanitation cuts in the TS units surrounding. 484 acres now established according to FS records.

### Recordings

In 1995- Female and male adult vocalizations

*rock springs north 95 Jun16.mp3 and rock springs north 95 Jun30.mp3*

### Trapping and Banding History

In 1992- female and male adult: Neither was ever known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### ROCK SPRINGS NORTH

#### 1992

22-Apr-92: 0750-0950: Standwatch, 2 hrs. - No adults seen or heard; checked flagged nest tree from '91; some castings and rodent jaw on ground (last year's?) but no new evidence of recent activity.

19-Jun-92: 1245-1330: 2 adults defensive and vocalizing; white-wash below and around nest; no pellets, feathers, or prey remains though. Same nest as '91 probably.

08-Jul-92: 1130-1150: 2 adults seen, one very defensive and vocal; 2 Nestlings confirmed at approx. 31-35 days old; adult molted juvenile feathers indicate 2-3 yr old. In PM, trapping attempt unsuccessful.

22-Jul-92: 0630-0830: Trapping and banding successful, 2 adults banded; Nestlings heard but not seen, adults feeding, perching, and vocalizing.

#### 1993

16-Apr-93: Walk-in to nest. 1 adult perched near nest tree and vocal (alarm call). In with Cam for a stand watch, but as took OP site to east of nest tree, adult goshawk was in tree to my right watching me- had seen me the whole time. After a time of grooming, goshawk alarm called and I left.

29-Apr-93: 1 adult (female?) off nest. Breast feathers in brood patch are very ruffled. Suspect that she was off nest from incubation

04-Jun-93: Failed status confirmed; No goshawk in area.

#### 1994

12-May-94: 0750-0800: Walk-in to nest; 1 adult incubating on nest, low down with head up; no vocalizing.

23-Jun-94: 0930-1000: Nestling check, 3 chicks: 1@ 26-28 days, 1@ 22-26 days, and 1 @ 20-22 days. 2 adults came in: 1 (male?) stooped then disappeared, 1 (female?), using wail call mostly, perched and did not have any bands on.

01-Jul-94: 1110- 1130: Fledgling check: 3 still in nest. 1@ 32-34 days and 2@ 30-34 days. All looked alert and healthy. No adults showed up while we were there.

#### 1995

24 Apr 95. The nest is gone, blown down. When Mike (*McGrath the grad student that measured all goshawk nests in 1994*) came out here in Aug 94, he told Sonya that the nest was down at that time. This has been a successful territory for many years. Will have to see if another nest has been made nearby.

**PFA:** In 1990, protected nest stand, but allowed sanitation cuts in the TS units surrounding. No formal PFA established.

24 Apr walked into N#4 to check and nobody seen. Nest had fallen down as of last year at end of season. Did not find the new nest on this date.

16 MAY: Did find new nest, by searching in the stand only- did not have to search far, for N#37 was close, over the ridge from there. I have the first of my field nest visit notes for this year(see map)

16 June: Recorded female at nest, she was vocal and a mild stoop at me. Heard male call from direction of #4 nest, and female took off in this direction, recorded her alarm and beg call to the male. On the tape can hear a few faint croak calls from the male, however he never came in to where I could see him.

30 June: In to record and collect pellets. Two Juveniles branched that I saw. The female was perched over me, silent, as I got near tree. Walked around, collecting pellets, had been there with her watching for about 30 min. before any vocalizations. The Male flew into stand with a "guk" call. She responded with beg/alarm call. He flew into within 20-30m to look at me and gave one series on alarms (this is the croakier, lower pitched call on the tape) then flew off. She followed beg calling, but came back to me in about 5-10 min. As I was walking out, she stooped me. The juv. never vocalized during this. Female did not have any band on and did not get a good look at male.

17 July: In to do measurement of area (or tree). Both juveniles flew in when arrived and called at me, but then moved off to hang out south of stand.

## 1996

30 Apr: 1st nest check. Drove in from south of N#37 to rd.# 633. This area has been logged, this must have happened in fall/winter because no trees were cut when I last visited this site. Fledglings were long gone by then. Logging has occurred right here last fall. K Haines (*FS biologist*) said this is the 1st cutting prescription to maintain canopy closure for goshawk. Large trees are left- is more open yet the stand still seems the same. Must be -because the goshawk is using the same nest as last year. N#37 is occupied again. Forgot how close the tree was to this road junction - parked within sight of nest. Female in nest incubating, but her back was to me. All I saw were her tail feathers sticking out of nest - lots of down. The best OP is right at this junction to east standing by two small PIPO directly behind large PIPO with a black line on truck

29 May: In to do 1st nest check, but it is very quiet. She is still on nest but not agitated. there is no wh/wa on rim of nest so perhaps they have not hatched yet or very young. No recordings done this time and no sight or sound of male.

27 June: Taking a volunteer, Taylor, who wants to take pictures of goshawks, in for nest check. Raining hard, so did not stay long. Female on nest with 2 juv. 32-24 days? Did not flush from nest and/or vocalize.

## 1997

24 Apr: Checked on old nest trees and both nests gone now. Walked around the area of nest #4 and #37, but no sound/sight of goshawk. Good GRJA mimic in the area however. Appears Unocc.

14 May: In to walk area and do a silent search - no caller. Yes found new nest site. Walked all around N37 and over to meadow area to SE. When came back to check sign on #37 tree, heard a goshawk kek to north in the stand. As walked to north, heard 2 adults, one flew in to perch and watch me. Found nest in Lg. PIPO (*N108*). Female was perched in tree high above nest. As I watched nest, heard a RTH cry and the male chased it away. They were probably reacting to me and the RTH to illicit the beg and alarm calls I heard. The Rd#633 now has a closure sign on it down by N37. This is where I start my searches now at this junction. Wrote directions to nest (see pg 97-30 if needed) which are now on map with utm.

18 June: Female was perched and watching me the whole time, no response and was silent however. 2 chicks in nest (19-22 days?), may be younger though. Had to find a good OP which took some time for this is flat land and a high nest. One is to east of tree on the slight rise there, and one is keeping on the track that leads in from rd#633 to a lot of orange flagging, turn to NW and go to a clump of seedlings, can see nest from here.

5 July: Successful, 2 nestlings @ 36-38 days. Adult (Female?) in stand perched in a nearby tree but did not respond to us. (*Ted Fremd was with me*). Tree has a sign and one of the chicks gave an alarm call as we walked up to the tree.

## 1998

3 May: In for initial check. Only one nest is up (#108) but unused. No sight/sound of goshawk but did hear a GRJA mimic when near nest 108. Spent about 1 hr in stand.

31 May: Tried an experiment this year by camping out in some stands to do crepuscular searches-early morning and late evening- to see if I could pick up the moved goshawk any better. 0430 got up and walked stand for 2 hrs. GPS'd all the nest sites. Arrived last night @ 2030 and no sounds of any activity. By 0500 there were bird calls (robins, nuthatches, chickadee, and ravens) but by 0700 it was quiet, however it is a foggy day also. @ 0700 walked down road south from rd.#633 junction. This leads to steeper terrain and ends up just to west of RSS territory. Walked about .5 mile thru good stands and meadow/spring to west. No sight/sound of goshawk. 0930 back at stand, sat outside to listen for about 1 hr- still no sigh/sound of goshawk.

5 July: Did a third search using the caller this time and still no goshawk. Same result as Izee this year - did a long crepuscular search, and calling- still no goshawk in this stand at all.

## 1999

1 May: Spent 1 hr walking the stand around nest areas. Only the one nest up (108). No activity or nest structures seen.

8 June: In to do a second search and using the caller. Yes it is Occup! new nest that is only about 50ft. from #108, very low in small diameter. PIPO, only about 12-15 ft off ground. Another volunteer had been in this area earlier and had heard a goshawk call. On the first visit, I had walked right close by this new nest but didn't look to the east where it is. I had called 4 stations and was off toward N#4 area when I heard her beg call. She did not respond to the caller at all when I was near her. I followed her call back to #108 and thought that she had fooled me and was using that nest. She even perched on top of this tree and alarmed called at me. As I was heading uphill to west to OP, I finally saw the new nest (137), low down, with lots of wh/wa and down on rim. Could see top of one grey-downy head in nest.

7 July: 2 fledglings out of nest, perched in nearby tree. Took me awhile to spot them for they did not respond or alarm to me at all, very calm. Fully feathered juv. and the nest was very messy. GPSd new nest and flagged nearby small PIPO. No adults in evidence at all.

## 2000

26 Apr: In to do initial check, out with Ted (*Fremd*) today. Walked the stand around the nest areas and between but no sight/sound of goshawk. Neither nest looked occupied.

13 June: Second stand search using the caller. Occup- she is using #108. She did not respond to the caller, but only when I walked near nest tree did she flush and alarmed at me several times. I heard a beg call from male in distance one time. Wh/wa on rim and on ground but cannot see into the nest well. On first visit, I thought that the nest looked more substantial, worked on, but still looked unused. I was right. It is possible that she wasn't on the nest incubating on first visit - maybe a later nester.

29 June: Out with Sara Herve to try to get some good photos this year - none really came out though. Had camped out on Middle Fork of Canyon Ck. Last nest check- 2 chicks-1 branched @ 32-34 days? and 1 @ 30-32 in nest. Sara took 8 photos but not real good. Female was near tree when we walked in and flew and called at us while we were there. Heard male beg call in distance again a few times. Interesting that the female was displaying such aggressive behavior at this late stage.

## 2001

8 May: In to do first nest check. Occup in a new nest. As walking the area of N#108, I heard a beg call from the area around N#4- the original nest. New nest is very close to #4 in that stand. From the rd#633 closure, walk to the 2nd large slash pile on left, turn and walk west to ridge toward #4. I have marked 2 small PIPO with flagging as a good OP. To my dismay, there were a lot of new red flagging all thru the stand for a "Glade II thinning"! I called Karen Haines very upset that what was up with this! She had no knowledge and investigated- found that yes it was being marked for a presale cut. I was pissed at this one. It was resolved- apparently all the work done in 93-94, preparing the sale to incorporate goshawk guidelines was lost somehow and a new timber person was not aware that it had been one of our most successful territories! Where is the consistency in the USFS with any info? It definitely depressed me that all the work of monitoring is for not with USFS. It was only because I was on the ground as a witness that this place has again been protected. Such is my woe about letting go of this monitoring- if I'm not here to do it, it will be dropped utterly and these places will suffer. SIGH

18 JUN: In for first nest check. Success, but chicks are too young to see, cannot see into nest. Female saw us and alarm called all the while that we were there (*Sarah Herve*), but never came into us. Male was heard with the guk, but did not show himself. Interesting, all the orange flags are gone, someone came in and took them out.

26 JUN: K Haines and volunteer did nest check for me. They did not see any chicks but there was wh/wa on ground and they heard beg calling to south of nest. Adult did come in and called at them. So I misjudged this nest as being "young", they probably were branched early. So indeterminate as to how many fledged here, but by adult behavior and beg call, it can be viewed as successful.

## 2002

1 MAY: In for initial check. Occup- female on N#108 incubating. As checking the last year's nest, again I got that "feeling" that they will be in 108. As first walked to it I wanted to doubt this feeling, and from one side it did look unused. But, when I walked to the other side to look, I saw her down and her head. So my "feelings" intuition are correct. I must learn to trust them.

14 JUN: In for nest check. Can't see into nest well nor see any heads from either side of tree. Female was at nest and came off to stoop and call. Do not know number, but by behavior it is still viable. Male came into stand and gave me a Guk call, she responded with wail calls. I will assume that chick(s) are in the 21 day range.



28 JUN: In for nest check. 1 chick @ 26-28 days is all that I saw. Female was in the stand calling, stooped and flew around me as I was walking out. I watched nest from both sides for awhile, and still only saw one head.

## 2003

28 APR: In for initial nest check. N149 is occupied with female incubating. Marked a track =”29 APR-03 RSN” that plots out the way to get to the OP. Walk the 633 2 track almost to the clearing, but turn into stand where the large down logs are. I had gone to check last year’s nest and while there I heard a good GRJA mimic. After that a clear beg call one time. I couldn’t quite get a good direction on it, so continued to check other nest sites first. Good call for she was there sitting on the nest, so it saved me time. This nest doesn’t look any better than when last used- almost falling apart now.

16 JUN: In for nest check. Failed, no goshawk here at all. Nest is a little light in structure now and a few branches with down on them are on the ground. Down still on nest rim. It looks like with the high winds we have had of late, this nest may have collapsed. There are no bodies, eggs, or other on the ground though. No adults came in for me to see or hear.

## 2004

26 APR: In for initial check. Spent 1:36 hr @ 1.35 mi. OCCUP in N149. This was eerily like last year in that the nest has down on edge and her tail feathers are exactly in the same position as last spring. At first I thought that maybe this was a dead carcass in nest that I was seeing left there from last year! I walked all around tree and found feather at base. I will have to check last year’s notes because I think I searched all around nest at end of season, so this would be a new feather. I finally backed up near N4 to get a look into nest from that side, and I saw her head. She is very low in nest and she moved a little. I will have to come back in mid-May with scope to really tell. It is unlikely that a dead goshawk would still be in nest all through the year without something scavenging it.

3MAY: Ken Schuetz talked to me about the FS activities they want to do in this area. Range improvements would be to repair the fence line along the rd 3250. The nest is protected enough from this road and with only 1-2 people and not a lot of heavy equipment, I felt that this would not be too big an impact on the pair. The 3 water improvements, putting in new water tanks, are closer to the stand and they would have to use the road that runs right by the nest stand. I have asked for the next 2 weeks to re-check nest and make sure that they are incubating and still there. So that later at end of month, the use of the road may not make them leave because the chicks have hatched and they will be more aggressive to stick. The water projects are small- only entailing a couple of days to do-but they will need to drive in a backhoe to dig ditches.

13MAY: In to re-check nest site. Good, both adults present. Male came out to me and called when I got close to stand. Female was calling from nest tree. I had intended to go to OP by N4, but I couldn’t see the nest at all this time. I didn’t want to go any closer to disturb them at this time. Goshawk are solid and territorial now, so area occup. So now I will tell KS to have people come in here and only use the road, do not stop. If just passing through, I doubt that it will disturb the pair now. They can’t go off road though or into stand. The fence line is well away from nest which I checked on again.

16JUN: Out with Chadski (*Chad is a friend that wanted to see a goshawk*). In for nest check. Bummer-FAILED! Nobody home and there is an eggshell on the ground below nest. Need to check to see if this could be from last year (which it is NOT). It does not look like the fence line nor the closest water project was even started. Have to talk to K Schuetz to see if any of the proposed work was even done! It appears right now that the failure was caused by natural processes- like a GHOW predator, or wind rain damage to nest.

## 2005

23 APR: In for first check- approx. 1.5 hours. Nests are all unused and no sight or sound of goshawk. Did get a good mimic while here. I think they must be here or close, but in a new place.

6 JUN: occupied in new nest right by #37. I had passed by here earlier. But I decided to call this area and parked at usual spot on rd.633 at closure. I was only a few feet from the truck, turning on the speaker, and she came out to call at me. Nest is messy but did not see any chick heads. Still cold so I will come back next week.

22 JUN: successful with 2 chicks @ 28 days. Marked nest as “2005” and had forgotten that there is an older structure here nearby also. Marked both with flagging. Both female and male were calling and aggressive by this time. Both same type of tree-smaller PIPO and little nests out on limbs. She came out to me right away again. Both chicks look healthy, one slightly younger. Tried to get photos but not much success.

## 2006

7 MAY: Raining lightly, day turned cold and rainy. Unoccupied – all nests still up unused and no new ones seen. No sight or sound of goshawk.

20 JUN: In to do a few calls. New nest found successful with @ least 2 chicks probably @ 21 days. Both adults responded to caller after about 3 calls. Had to walk in about ¼ mile to find nest- but marked it as “2006”. It is right below the upper road (3925?) that borders this territory. Large PIPO, chicks nestled way down in nest, so saw only white downy backs, but good size.

## 2007

13 APR: In for first check-out with TJF (*Ted Fremd*). Occupied. While searching in a clockwise manner, we finally heard and saw her briefly in vicinity of nest #108 and 137. I was measuring the last year’s tree #187, and TFJ continued to search. She must have seen him on road above nest area for she came to perch in high snag and kek’d one time at us. I heard her and saw her, but will come back to verify which nest site used.

18 JUN: nest check, but no nest found. Active status from before. No goshawk found here and no new nest either in vicinity of last visit. I did a few calls along rd 3925 along the top of the stand area, but got no response. Bummer.

## 2008

27 MAY: May has been cold, snowy, overcast. Had about 3-4 days of hot weather around May 11, but cold and snowy in higher elevations since then. Went in along top side of stand on rd 3925. Unoccupied and no sight or sound of goshawk. Only 2 nests up now. This is a weird year for nesting. Was this hard winter and cold continuous Apr/May putting them off?

## 2009

26 MAY: It again has been a late-cold spring- all of Apr was cold rain and snow. Not until mid May did it start to warm up, after Memorial Day weekend. Out with TJF. In for first check. Unoccupied at the “old homestead nest stand” area.

*Did not visit/check again this year.*

## 2010

13 MAY: sunny warm day. Active in area. Stand unused but good indication that goshawk in area somewhere. No sight or sound of goshawk in known nest cluster, but while I was calling, TJF saw a goshawk fly over heading SE of stand. I walked SE into meadow area and got a good GRJA mimic response. I found and marked a new RTHA nest with female feeding chicks. Did not find any other structure or get a call from goshawk. They have moved and would need to call total area again. Let the FS crew (that was hired this year for surveys) know about this response and said they might go back into area and do concentrated calling to find new site, but do not think this was accomplished this year.

## 2011

26 MAY: In to measure. Weather cleared some, but still squalls passing through. Unnoc/unused and no sight or sound of goshawk while in there. All the markers are good and only 1 nest left up and 1 tree down.

## ROCK SPRINGS SOUTH

RSS <sup>1</sup> Year	Nest Num	Date Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	1	6/18/92	Y	S	2	
1993	1	4/29/93	Y	F		
1994		4/25/94		UNO		
1995	68	5/28/95	Y	S	2	
1996	81	6/4/96	Y	S	3	
1997	1	4/24/97	Y	S/F		
1998	1	5/3/98		Usurped		GHOW
1999		5/15/99		UNO		
2000		4/20/00		UNO		
2001	150	5/8/01	Y	S/F		
2002		4/30/02		UNO		
2003	81	4/28/03	Y	F		3 chicks killed probably by GHOW
2004	167	4/26/04	Y	S	3	
2005	150	4/23/05	Y	S	3	
2006	188	5/8/06	Y	S	2	
2007	188	5/9/07	Y	S	2	
2008		5/28/08		UNO		
2009	150	5/26/09	Y	S/F		
2010	188	5/17/10	Y	S	1	FS crew had checked earlier in May

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The very first nest to be numbered was found here in 1992. The **photo to left is of nest**



**tree #1**, taken in 2010, showing considerable growth of the understory since 1992 (nest tree is in center in shadow). There has been some extraction activity in this area but not the degree of cutting to which many other territories have been subjected. I think it has also helped that the road leading into this area, Rd#441, has had a road block (up and in place for most of these years) closing this off to vehicle traffic since 1996. All in all, I feel this has been a pretty stable and successfully used territory for goshawk (roughly used 68% of the time).

In 1996, an archeology crew was working in the stands *during breeding season* and actually had the goshawks calling and stooping at them; however, the goshawks successfully fledged that year. In 2002-2003, thinning units were marked and many discussions with the wildlife biologist (Ken Schuetz) ensued. We talked about the thinning prescriptions that the FS proposed; this being that all the trees less than 7" dbh be



taken out. That did not seem supportable to me, as the result of that action would remove the secondary cover for nestling goshawk. Examples of this type of thinning have been attempted in other territories with damaging results (see Steagall Springs territory, for example). This action did not take place in 2003; but in 2010, this area was still being considered for thinning purposes

Overall, the large PIPO have maintained their health through the years. Notably in 2010, the understory has increased in height and density (especially around nest #1). In the area to the north of this nest, consisting of thickets of smaller diameter trees, there is considerably more deadfall. But even with these changes to the structural components, this still maintains its viability as goshawk nesting habitat. Management of this stand should be extremely well thought out and/or considered with “benign neglect”.

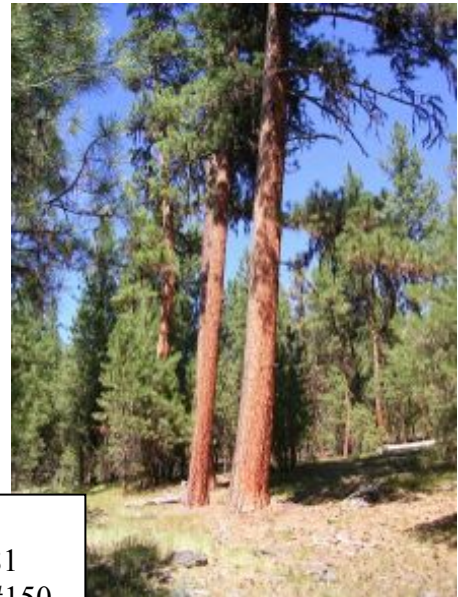


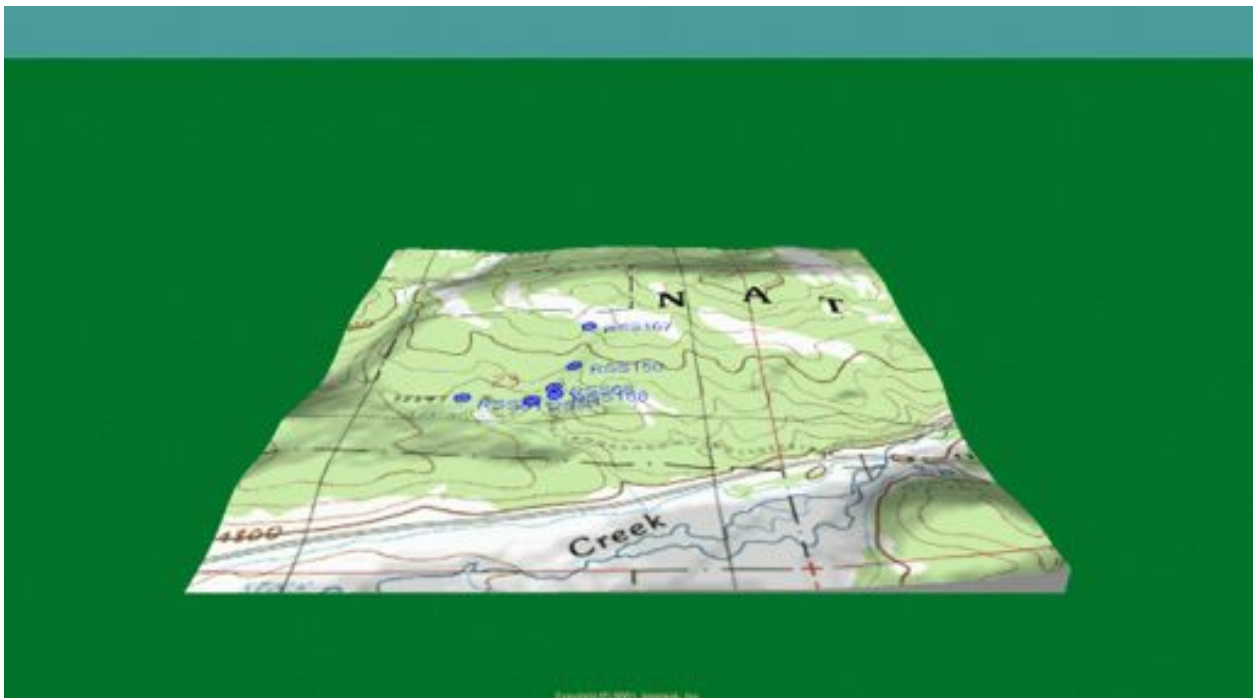
Photo top left: Nest tree #68  
Photo middle left: Nest tree #81  
Photo middle right: Nest tree #150  
Photo lower left: Nest tree #167  
Photo lower right: Nest tree #188







North up



ROCK SPRINGS SOUTH

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
ROCK SPRINGS SOUTH -01	TAG	4888	PIPO	27	SE	53	50	8 to SE
ROCK SPRINGS SOUTH -68	TAG	4913	PIPO	29	SW	40	44	8 to SW
ROCK SPRINGS SOUTH -81	TAG	4897	PIPO	30	270	35	flat	na
ROCK SPRINGS SOUTH -150	TAG	4952	PIPO	37	120	70	75	15 to S
ROCK SPRINGS SOUTH -167	TAG	5032	PIPO	25	145	80	75	18 to S
ROCK SPRINGS SOUTH -188	TAG	4905	PIPO	21	210	75	30	15 to W

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1	A	A	I	I	I	A	U	I	I	I
68				A	I	I	I	X		
81					A	I	I	I	I	I
150					I				P	A
167										
188										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1	P	X							X	X
68									X	X
81	I	A	I	I					X	X
150	I	I	I	A	I	I	I	A	P	P
167			A	I	I	I	I	I	P	P
188					A	A	I		A	X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 430 acres established according to FS records.

### Recordings

In 1995- Female adult vocalizations (band 63/L)  
*rock springs south 95 Jun19.mp3 and rock springs south 95 Jun30.mp3*

In 1996- Female adult vocalizations (no bands)  
*rock springs south 96 Jun4.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### ROCK SPRINGS SOUTH

#### 1992

18-Jun-92: 1020-1130: Nest found; adult female very defensive and vocalizing, constant stooping; Not much whitewash on nest edge

19-Jun-92: 0800-0810: One bird on nest, can't tell if adult or nestling; Can't tell if incubating or brooding

08-Jul-92: 1015-1050: 2 Fledglings in nest area; One vocalized with alarm call, the other silently flew in, perched, then flew off: Nest tree flagged; No adults in area; Some prey remains collected

23-Jul-92: 1640-1900: Trapping and banding attempt- unsuccessful; 2 Fledglings in area , vocalizing and flying.

06-Aug-92: Trapping and banding attempt- unsuccessful, again; 2 Fledglings in area and 1-2 Adults also.

#### 1993

07-Apr-93: 1120-1220: Stand Watch: Alarm calls heard as settling into position (see folder for obs. point); RTH circling, goshawk calls twice at intruder(?); Cam moved closer to nest, saw adult goshawk perched and was called at by goshawk. Territory appears Occupied.

29-Apr-93: In AM: Female incubating

21-May-93: 1200: No birds present- Failed

11-Jun-93: 1130: No birds present- Failed

16-Jun-93: 0900: Tree climbed; Down and egg linings collected

#### 1994

25-Apr-94: 1300-1530: Stand Watch: Territory appears Occupied by evidence of seeing 1 adult goshawk and hearing several alarm calls in response to RTH circling and possibly to the observer; Possible encounter with another goshawk due to hearing much chattering from goshawk. Detailed notes on stand watch on pages 94-7 to 94-9 in field notebook. Saw adult goshawk flying to the south of my OP site, where I heard the possible encounter with other bird, so on this evidence the territory appears occupied.

31-May-94: 1338-1426: Walk-in to nest and it appears inactive. No sight or sound from goshawk so don't know if still in area. It started to rain hard, so will come back to do calling and searching of area.

08-Jun-94: 0850-1110: Did calling stations in area- no birds seen. In searching ground below nest #1 found an array of feathers - 2 RTH tail / flight feathers, goshawk feathers some that looked old (last years) , but some with the shaft ripped and cut off. (Sonya later ID all feathers as belonging to RTH, so a RTH was eaten here or a bad fight ensued) Territory had goshawk in area but this possibly indicates that goshawk was killed or run off by RTH in area.

#### 1995

26 Apr: Walked into N#1. Unused, no sign of activity and no sight/sound of goshawk.

28 May: Found new nest. I am surprised and delighted. New site is about 100-150m NE of #1 nest. From junction of the roads here, the 20+? dbh PIPO is due north about 70m. Nest is in the SW side of tree. Had called 3 stations, one right near the nest, and she did not respond. She stayed low and quiet on nest even as we walked by tree. (*In field with Ted Fremd and Jasper, a German Shepherd dog*). I didn't see her until we were coming back down from the ridge in area and looked down on nest tree. From her



reaction, I suspect she is a "later nester" and will fledge later than others. We'll see when we come back to age nestlings. Most other goshawk at this date have been vocal and aggressive. She acts like she is in mid-incubation still.

19 June: Drove in to nest check. As drove in female flushed and started calling. I got a good recording of her alarm call. She is banded with 63/L. This was the female at Seneca East for 2 years! Two chicks @ 14-17 days? She was perched in the top of the trees, so I had to shoot up at her to get recordings- the closest being 30-40m, the farthest at 80m. She was also flying at times while recording.

30 June: Last check on chicks. One chick still on nest @ 32-34 days?, one branched next to nest @ 34-36 days? Confirmed again band of 63/L and recorded second set of alarm calls. She came into me as I was at OP up on ridge. Had to walk down to nest in order to see juvenile. Did not collect pellets. She was perched about 10m above during recording. Also, at times up in tree at about 30-40m away. Recording level usually at 85-80db.

17 July: In to do measurements of tree N#68. Not many pellets to collect and did not see or hear any birds.

## 1996

1 May: Road closure is up this year, have to walk the road into nest area. Unoccupied- both nests are unused. No sight/sound of goshawk. I found another old deteriorated nest structure close to last year's nest (#68)- up the draw from it along old 2-track in a large PIPO. I'll be curious to see if Seneca East nest is being used by the banded female- as she was here @ RSS last year.

7 May: A goshawk -kekking- was seen near nest#1 on 5/6 reported by BVRD people - am going in again to do a silent search. Spent 1.5 hrs. in stand search around the known nest areas. I did get an adult goshawk circle over me and check me out in the same area that was reported yesterday. No call though and it flew off slowly to the east - over nest #68. I searched that nest again and continued on to east - Nothing. Perhaps this is a hunting male from elsewhere or perhaps a fledgling from this nest last year - but an un-breeding individual. It is rather common (?) that old territory nests unoccupied will have goshawk visiting them. Are these juveniles with a memory of nest area they were raised in???

4 June: Going in again to try to pin this down. The archeology crew reported a very noisy bird just north of road, above Nest #1. I still see this nest is unused but will go in and use caller this time. Success - found the new nest! It is in a PIPO right on the edge of an opening -exposed and low on the tree. The chicks are in the sun and the nest is shallow and only about 20? ft. from the ground. It is just south of the road as you follow it all the way west - past N#1- to where it ends in a meadow/spring. Can see well into the nest from the old skid trail to the north. Female is not banded, unfortunate for recording. She called and came out to me after I had used the caller at N#68. She stooped a few times, but I was not really at the nest yet. When I did get in sight of nest, she perched, called, and stooped a few times more - but not overly aggressive. There are 3 chicks in nest, downy, probably at about 14 days? Did not have scope to really look closely. Got a few recordings of female, but it was windy. Started collecting prey remains here - there is a plucking post just north of nest across road on a down log. Picked up a few black and black/white feathers, some still with sheath on bottom (juvenile corvid? magpie?). This is a good OP in this dog-hair thicket of trees to north.

27 June: 3 chicks about 38-40 days? all standing in nest. 2 older ones that both gave short series of alarm calls. No adults evident, but did hear beg call to north at OP. Never did come in though, still raining and no recordings this time.

25 July: At last curve on the road #441 walking in - before the meadow- 1 juvenile was perched on the ground just off the road. She flew up into a tree and called. When I had collected pellets and was walking out, he did a mini stoop and called again. No other birds seen.

## 1997

24 Apr: Walked into check nest and N#1 is used. Female on nest incubating. She stayed on the nest while I had to walk all the way around to verify that she was really on nest. Saw right off that the nest had been rebuilt, but wasn't sure I saw her head - had to double check so walked around to north side.

5 July: Successful by look of nest, but number of fledglings unknown - already gone. Looked for branchers but saw none. Did get 1 stoop and a call from adult female? as I was walking out of the stand.

## 1998

3 May: In to do initial check. GHOW is using N#1. Nest #68 is 1/2 gone already, unused and N#81 is also unused. Walked stand a bit but no sight/sound of goshawk.

5 July: Another check - used caller at 4-5 stations around nest stand with no response. I GPS'd all the nest trees and put signs up. As I was walking out, there was a high fly-by of goshawk, checking me heading in a NNW direction. A hunting goshawk no doubt. Could there be a nest between RSN and RSS in the years neither of these territories are occupied???

## 1999

15 May: Using GPS12 this year, saved search route as track log. Spent 1.5 hrs searching and area is unoccupied. Did see a goshawk flying high going WNW. N#68 is gone now, the old structure (X) is almost gone, and other 2 are up but unused. GRJA were active in here with their RTHA mimics.

8 June: In to do a second search using the caller. Spent 2 hrs. calling and searching areas - no sight/sound of goshawk.

## 2000

20 Apr: Walk in to do first check. Have GPSIII and marked all trees plus the old "X" structure. Checked all known nest sites and walked stand - no sight/sound of goshawk.

13 June: In to second search using the caller. Walked the area and no response to caller - no sight/sound of goshawk.

## 2001

8 May: Walk in to do first nest check. Occupied in the old "X" structure. Female incubating on nest. Good OP site is uphill and to west of tree. She did not flush as we (*Curly-German Shepherd dog*) walked around tree. This is the first year I have seen this structure used - though it was built over 10 years ago in one season. Walked over to N#81 - still up but unused by any bird.

18 JUN: In for nest check. Success so far, but still very young. It was very quiet as walked in and around nest. I got to the OP and scoped it to see wh/wa and down on the nest rim and branch but can't see much else. Even as I watched, I didn't see any heads. Sarah (*Herve*) walked down to investigate the ground at nest and the female stooped fast and hard. She actually hit Sarah and put 1 claw into hat and scalp. She called and followed us out but didn't stoop again. So there must be young in the nest but will have to return in July. Sarah was initiated today - I haven't been stooped like that in years. Female has no bands.

## 2002

30 APR: In for initial check. No nests are used. Took 3 photos of N150 and N81. No sight/sound of goshawk and no new structures seen. There is a lot of orange flagging and thinning unit markers in here. When did they enter here? Need to ask schedule of markers.

*Did not visit/check again this year.*

## 2003

28 APR: In for initial nest check. N81 is used with female incubating. I had checked other nests first as walked in. The 2 original nests are gone, but N150 is ok. I walked further up the drainage past 150 and found another nest structure = "03-X". It was used sometime in the recent past, think it looks goshawkish, but could also be RTHA type also. This apparently the most used draw in this territory. NOTE: Need to tell Forest Service about the Parish thinning units marked G11OB or 611OB that is right across the road from the low exposed N81. Need to have timing restrictions placed on these units.

16 JUN: In for nest check. 2 chicks maybe 3 @ 14-17 days. Smaller and younger than other chicks seen today, pin feather barely erupted. Female was at nest but stooped when I got near, called all the while I was there, and stooped me 3x on the way out. Her breast feathers have strong stripes and rather brownish- she could be a first year bird and her eyes are not real red either. In comparison to the Fawn female, she is definitely a younger bird. I was going to bring the BSU student to this nest to collect feathers, but now will not. These are much younger and with a young mother I don't want to risk it.

1 JUL: Final check. Out with K Schuetz. Bummer Failed with all 3 killed. 2 chick bodies @ about 30 days on ground below nest. Parts of another one on a post nearby, torn apart. It looks like a GHOW or some other predator came in recently and took them out. Female was in stand and called a few times but didn't come in too close. We talked about the type of thinning that will occur in here and various prescriptions that Forest Service uses. I think more clumps should be left not all the trees less than 7" dbh taken out. I wanted to take him out to RSN to show him the area that was thinned a time ago to give him an eye for what might be a successful prescription, but we didn't have time. I collected some primary wing feathers from one of the chicks bodies in case Adam Smith (*Boise State University Grad Student*) wanted more feathers to experiment with. Note: He at first was very condescending and did not want these feathers. Later, after he had done some lab work and found the glitches that I anticipated he might encounter, he emailed me back and wanted them sent. They had been in a bag for awhile at this point. A rather opinionated young grad student- his wife was much better and she was working on flammulated owls.

## 2004

26 APR: In for initial nest check.. Well, I guess they are here! I just turned off the car at the road closure and started to get out when I heard a Douglas squirrel calling. I looked out to see a goshawk flying in low chasing this prey and came right up to perch in a tree not 20 ft from me. Both squirrel and goshawk sat and watched me for awhile. How wonderful! Walked into start search up right side draw to old nest and the “new X” at top that I found last year. Just before I got to the top of draw to see X, a large goshawk was perched watching me and flew off. I walked away around uphill to get a look into nest but not being right near it. Greenery on nest with wh/wa but nobody on nest at moment. The female than gave an alarm call from behind me and the male called from across the other side of nest tree. I left promptly. I will have to recheck this to make sure I did not scare them off for she is off the nest with very early eggs, or they are just starting.

17 JUN: In for nest check.. Successful with 3 chicks, 2 @ 22-24 D AND 1@ 19-22. Female was there and calling/stooping a couple of times. The better OP site is up along the bare ridge to the NE side of tree. It is such an open nest and exposed area for a goshawk – exposed like the other nest at other side of PFA in the meadow where they failed last year.

25 JUN: last check. Successful with 3 still. 2@ 34-36 and 1@ 32-34. All are up and alert in nest watching me. Did not see or hear adults this time- all quiet.

## 2005

23 APR: Disturbed spring weather- rain in AM scattered showers today, blustery wind (approximately 15-20) about 50 deg. Nest #150 occupied with incubating female on nest. I decided to reverse the order that I walk this year- walked all around the stand to other nests and she was the last one checked-figures!

22 JUN: Succ with 3 chicks @ 34-38 d. All standing in nest alert and watching. Female came out to me right off and was aggressive. Male came in with prey but then started calling at me. It took awhile to find a good OP so I was disturbing to them. Tried to get a photo also.

## 2006

8 MAY: Road closure is down again- WHY?- need to ask KS (*Ken Schuetz*) about this. Drove most of way in until a downed tree stopped me. New nest occup. Female incubating on nest. This is about 300 ft due east of N#1. Right along the 2-track that runs E from road going by N#1. I went into glade to check N1 and as walking uphill to go the usual route, I saw her in new nest- well exposed and visible from the 2-track. This is same opening where N#68 was also. I will close the road block as I leave.

20 JUN: Final nest check- road block was still up as I had left it. Succ with 2 chicks – 1 @ 21d and 1 younger with no pin feathers on head. Both adults active and stooping in the stand at me.

## 2007

9 MAY: clear sunny and warm day. Occup in N#188- female incubating. They like this nest again. Did not stay to take any measurements at this time, may later.

18 JUN: in for nest check- Succ with at least 2 chicks @ about 30 d. Female was present and called a few times when I was close. Couldn't really see into nest but saw edges of bodies and feather development. Since no accurate productivity count will be made this year I decided to leave them be. There is no good OP except down below from the road.

## 2008

28 MAY: Walking into nest area from closure. Unocc! Nada!!Zip!! Now this is getting weird- walked all nest area and most nests still up but partial. No sight/sound of goshawk at all. This may prove to be a bad goshawk year.

General note written on 4 JUN: I will quit searching for this year now. Very odd feeling about this. The hard winter and cold prolonged spring may be the only cause of no goshawk (in all the territories that I checked!). But there could be a major movement out of these areas for some other reason. As TJF (*Ted Fremd*) mused- there could be something like a 50-100 year cycle that we have yet to pick up- for we haven't studied them too long yet.

## 2009

26 MAY: Occup on N#150- female incubating on nest, no response from her and she stayed calm.  
NOTE: No other visit to this nest so no productivity count was made. S/F unknown.

## 2010

17 MAY: Took 7 FS crew for this year out in field for some goshawk training. A good bunch of young kids, seem knowledgeable and respectful for a change. They had already come into this area searching, I think in early May and found the occupied nest. Road closure again is down, so drove a way in, but with this many people I wanted to walk the last bit to keep the disturbance down. Female incubating on N#188.

12 AUG: Out with TJJ (*Ted Fremd*). Finishing work for C. Kranich with goshawk data and into measuring trees, etc. Drove all the way in this time and when we stopped the car got a kek call then a beg call. Possibly 2 birds still in here. I saw one that looked like adult. C. Kranich said there had been a lot of activity around these birds this year- and they were probably tired of it all. This year's nest is gone now, the FS crew said it blew out after fledging. Other nests still partial except for #68 and #1.

I am taking 2 photos of nest trees for database and hopefully I can find the few that were taken years ago. Not many of these though and some are on slides that have to be scanned (*no luck retrieving these earlier photos*). Notably though, the stand where N1 is has really grown in. I hope to compare the photos taken in the 90's with those of today. Overall, yes the understory is more grown in and taller-more deadfall in area to the north of N1 across the 2-track. BUT still this has been one of the most successful territories for many years. Management of this stand should be light and careful- there is not much left directly around it for birds to expand.

## 2011

22 JUN: Good the road closure is up again at beginning of road. Bad news is we have to walk all the way in. I see a fence crew is working in this area already. All measured and done and while in here no sight or sound of goshawk. Have to note to FS that this year I was only going to the known nest sites and did not do a thorough search of these territories.

## SENECA 701 TERRITORY

SEN <sup>7</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	7	8/17/92	N	S	2	
1993		7/1/93		UNO		
1994	7	4/27/94		Usurped		RTHA in #7
1995	77	?		OCC		RTHA in #7 -Goshawk Found late in season by FS crew
1996	77	5/1/96	Y	S	2	RTHA in #7
1997	107	5/25/97	Y	S	1	RTHA in #7
1998	107	5/3/98	Y	S	3	
1999	107	5/10/99	Y	S	3	RTHA in #7
2000		4/20/00		UNO		
2001		5/16/01		UNO		RTHA in #7 and GHOW in #218
2002	107	6/5/02	Y	S	3	RTHA in #7
2003		4/28/03		A		
2004	168	5/6/04	Y	S	4	
2005		5/9/05		UNO		
2006		5/2/06		UNO		RTHA nesting near #7: COHA and GRGR near #107
2007	77	5/14/07	Y	S	3	
2008		5/28/08		UNO		
2009		5/26/09		UNO		
2010	77	5/17/10	Y	S	2	

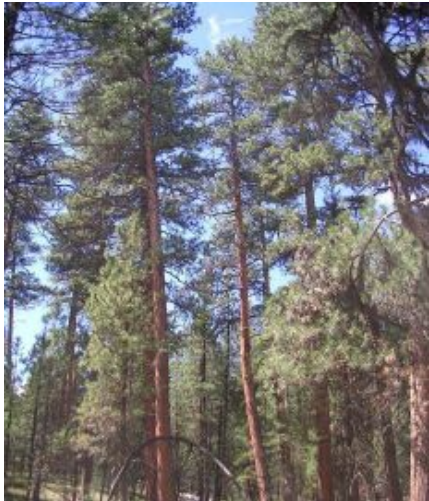
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

When this territory was first found during a random calling grid in 1992, it was not similar at all to what other goshawk habitats looked like on BVRD. The field notes state “.. *Habitat seems marginal- a lot of cutting has occurred around this area*”. During the years, I have observed that RTHA prefer nesting in Nest #7 more than goshawk, while the nesting goshawk have migrated their territory along the draw that follows FS road #1601 to the south and east. It seems possible from the observations of this territory that, with the competition from the RTHA, the goshawk were moved out into two other habitats (clustered around nest #77 and another clustered around nest #107).

This is one of the examples on this forest that demonstrate it is not only the old growth mature stands that are viable for goshawk breeding. The stands of nests #77, #217 and #218 are not old growth PIPO, but smaller diameter fir growing in thickets. It is an even age, uni-level structure, yet dense enough to provide shade and cover within this secondary growth. Obviously, something is attractive to nesting goshawk with this type of habitat. It is also attractive to GHOW; one was found nesting in #218 in 2001, which (presumably) had the effect of the goshawk not using this stand for several years afterward. The stand of nests #168 and #107 have old growth PIPO with a multi-structured understory, a more “typical” habitat for goshawk.



There have been prescribed burns, especially in 2004, close to and in these stands, but time restrictions have been enforced during the breeding season. In 2010, I noticed a deterioration of the understory which could just be a product of the under burn done here, and it should recover after some years of non-disturbance and a favorable climatic regime.



Photos from upper left than counter-clockwise:

- Nest tree #77
- Nest tree #107
- Nest tree #168
- Nest tree #217
- Nest tree #218







North up



SENECA 701



## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
SENECA 701 - 07	TAG	5048	PIPO	36	S	40	306	10 to SW
SENECA 701 - 77	TAG	5156	PSME	11	70	45	180	15 to E
SENECA 701 -107	TAG	5131	PIPO	28	95	100	190	7 to E
SENECA 701 -168	TAG	5147	PIPO	36	228	40	200	5 to E
SENECA 701 -217	TAG	5215	PSME	23	106	60	260	20 to N
SENECA 701 -218	TAG	5121	PSME	21	285	nd	flat	flat

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
07	A	I	U	U	U	U	I	U	I	U
77				A	A	I	I	I	I	I
107						A	A	A	I	I
168										
217										
218									I	U

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
07	U	I	I	I	U	X	X		X	X
77	P	P	P	X	X	R/A	I		A	I
107	A	X		X	X	X	X		X	X
168			A	I	I	I	P		P	P
217								I?	I	I
218	I	I	P	X				X	X	X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 596 acres established around these nest clusters as per FS data, but date of determination unknown

### Recordings

In 1996- Female and male adult and juvenile vocalizations

*seneca 701 96 Jul4.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### SENECA 701

#### 1992

17-Aug-92: 0930-1100: Followed 2 juveniles to nest site; down at nest, plucking posts nearby, and 1 adult goshawk feather found. Habitat seems marginal- a lot of cutting has occurred around this area.

10-Sep-92: No birds in area; down almost completely gone from nest.

#### 1993

01-Jul-93: Territory seem abandoned. Several stand watches and walk- through of adjacent habitat were done this season. No use of the nest and no evidence of goshawk inhabiting the area.

#### 1994

This nest directly taken by RTH, with 2 nestlings found at about 14-17 days old. The area was rather open for goshawk habitat when found in 92, but was inactive in 93, and now a RTH territory. Good case for change in habitat that invites competition. But will be interesting to see what happens in future.

27-Apr-94: 1650-1910: Stand watch 2.5 hrs.- O.P. across road#1601 to W of nest tree. No sight or sound of goshawk; territory appears unoccupied; drove by nest and it looks unused. Very windy day, not ideal for stand watch. Detailed notes on pages 94-14 in field notebook.

25-May-94: 1230-1330: Came to do 2nd stand watch, but disturbed RTH at nest. Walked into nest to find it occupied by RTH. 2 Nestlings in nest approx, 14-17 days old(?), 2 adults present vocal and very defensive. A direct takeover of goshawk territory by RTH this year - notes of RTH behavior on page 94-34.

#### 1995

25 Apr: Checked on N#07. Flushed a RTHA off nest, lots of down on nest. 2 adults flying and calling in stand.

27 June: Checked on RTHA in #7. As driving up #1601 a juvenile RTHA - fledgling?- flew by. The tail feathers, red, were just starting to come in, still had down on neck. At the nest, there was still one chick but branched. On the ground were feathers in un-erupted sheath looked like from a RTHA chick. Perhaps one of the chicks was killed and eaten here. This chick in nest was much younger than the one I saw flying on road. They will be completely fledged later this week.

*(This was the year that N#77 was found late in season by Anne Frost-seasonal for FS. I did not go to see this site until next year.)*

#### 1996

1 May: Checked on N#7 and it again is occupied by RTHA. Female on nest incubating, she did not flush or call at me. She appears mottled white on her back - perhaps a younger bird. No sight/sound of male in area. Drove up road to check on the new nest #77, and it is occupied by a goshawk. Female on nest incubating. This is in a small dense secondary growth stand- no large trees here left from past logging. Reminds me of dense fir stand by Fisk. Good OP site behind stand to SW up on rocky ridge. Green/black flagging marks where to stand. This is about 1/2 mile from the old nest (#7) that has been taken by RTHA for 3 years now. Very close territories and the goshawk moved out of openness of #7 into this dense stand of #77 - much greater shade component.

29 May: In to do first nestling check and possibly a recording. Female is quiet and still on nest, did not flush. No wh/wa on rim yet so she is on eggs or very young chicks. No other goshawk seen or heard and I did not get any recordings.

27 June: 2 chicks 26-28 days? standing on nest. Female was in tree and come out calling when we got to OP. She flew around, not real aggressive though, but it is raining.

4 July: 2 fledgling - 1 @ 36 days - 1 @ 36-38 days? this one on branch. Both adults were there. Got recording of male and female. The male, I believe, came in close and perched on nest when I went into tree area. Did not collect pellets at this time because they were too agitated. When I was back at the truck, I recorded beg calls from both juveniles from afar.

25 July: Collected pellets at nest, but no birds around at all.

### 1997

24 Apr: Checked on #7 and it is taken by RTHA again. One adult flew off nest and another adult came down stooping near it. They were giving out their chirping type calls but I couldn't see them clearly. Then one of them returned to the nest and the other circled overhead. Possibly they were copulating? Still in process of egg laying? Or food transfer? Note: the 2 nests on the Southworth's power line are occupied by incubating RTHA already. Checked on nest#77 - unused, no sight/sound of goshawk. Can hear the RTHA beg call from here. I thought at first it was something else, but realized as the crow flies these 2 nest areas are quite close to each other.

25 May: Wow- new nest site found and occup. My 6th sense kicked in here. I was driving between Pole and Seneca areas to scout out suitable habitat. I am driving up rd#706 from Antelope Ck. toward Sen 701. As driving along a nice large PIPO area along road, I had a feeling "This is where they are!" just prior to where I stopped. I pulled over to listen and when getting out of truck saw a large bird ahead of me fly off low. Couldn't ID it but had a familiar feeling to it. Searched the stand and walked directly to new nest tree N#107. The nest is very high in PIPO, hard to see into. OP is to rise of hill to south in a small thicket. Female on nest incubating. Drove by N#7 to check on RTHA. She was off nest and gave call as I started to walk in to nest. Can't see into nest, but a bit of down on rim- must be newly hatched chicks.

5 July: Successful with 1 @ 36-38 days. Did not see any adults or other chicks.

### 1998

3 May: Into do initial check. Think #107 is occupied, hard to see into nest. I think I see tail end, a bit of down on rim, and bit of wh/wa on ground. Will have to re-check later in June. Nest #77 in unused and nest#7 unused - no RTHA here this year.

31 May: Went to re-check and Yes female on nest for sure. Have marked an OP on opposite side of road, flagged a small dbh PIPO. Need to look high at 3 tallest PIPO in nest area and nest is at top of tree. GPS'd all the nest of this territory now.(#7, 77, and 107).

17 June: Successful with 3 in nest. No adults seen or heard at all. Still had to walk into stand to really see nest - on rise of hill. 2 chicks @ 19-22 days? and 1 @ 14-17 days?

5 July: 3 fledglings - 2 branched and 1 still in nest @ 35 days? As I walked in to stand, a juvenile called from a separate tree where female was feeding it. Adult flushed off and called once and flew off with the prey. Both other juveniles were quiet. Put sign on tree and left so that they could get feed.

### 1999

10 May: Checked on nests and #107 occupied by goshawk. Female on nest incubating, with lots of down on rim. No other bird seen in stand. Nest #77 is still up but unused, and #7 is taken by RTHA again.

24 June: First nestling check - 3 chicks 2 @ 26-28 days and 1 @ about 22 days. Was up on the rise with tripod on stump watching nest when she stooped me good and called. She then perched and watched but did not come into me even when I GPS'd the tree.

7 July: Chicks already fledged, but did see 2 on the ground uphill from the nest, up passed the OP site. Female stooped me as I got closer to chicks, means she is still very protective. Both juveniles alarm called at me, but only hopped away - did not fly well at all. I marked alternative OP site, up on hill by dead burnt snag and rocky outcrop.

### 2000

20 Apr: Checked all nests and all unused. No RTHA even at #7. We (*Sarah Herve and Matt Smith*) walked the stand at #107 and no sight/sound of goshawk.

13 June: In at #107 to do second search and using caller. No sight/sound of goshawk, and walked down drainage a ways past stand. Stopped and rechecked other nests still unused. But in the #77 stand, found another nest structure (Sene X) (*now #218*) that

is at the opposite end of stand from #77. I had not seen this structure before, but there was a wildlife sign on trunk. It looked like it was new, worked on recently. No birds in nest and no wh/wa on ground. I don't remember having seen this before!

## 2001

16 MAY: In for initial nest check. N7 has a RTHA again. Female on nest as I started walking in. She took off and at that time the male flew in and started calling at me. Drove to next stand of N77 and SENE X. GHOW is using X (#218) and took off when got near to nest. Searched stand of N107 and no sight/sound of goshawk here either.

*Did not visit/check again this year.*

## 2002

30 APR: In for check at N #77 which is ½ gone now. One photo of this taken. Nest X is still up but nobody home. Checked N #107 and will need to come back. Nest in good shape and looked rebuilt with fresh green. I can see a tail? or stick on nest, but no good OP to see into nest so will come back. Checked N#7 and RTHA again on nest incubating. Took 2 photos of this site.

5 JUN: In to recheck #107. Yes occupied and female on nest incubating. As I walked in on the low side of nest, she poked her head up to watch the dogs below. Lots of down on nest but she stayed low on in.

28 JUN: Nest check – 3 chicks in nest, the oldest at the rim. 2 @ 26-28 days and 1 @ 32-34 days. Female was in stand and called 1 time but no stoops. I didn't see them all until I made noise walking around and then they all watched me.

4 JUL: final check. Only 1 still at nest @ 35-36 days. Others had fledged already – probably in the stand in the direction that the adults came from. Female came in and called first, shortly followed by the male. Slight stoops by each adult and the female beg called at male 1-2 times. I walked around the base of tree to check for any bodies but none found, so assume that all fledged ok. They all looked healthy when last here and well on their way.

## 2003

28 APR: In for initial nest check. Stop snowing now, but still cold. Checked N7 but it looks unused, but will have to re-check on a better day. Walked thru the N77 and X stand- both unused and 77 is almost gone. Checked N107 and it is gone now. Searched stand a little but it started snowing heavily, so left.

11 JUN: In for second called search. First checked N7 and it looked used but probably failed. I thought a RTHA was there perhaps but it was snowing too hard to see clearly. There are wh/wa and feathers on nest rim and a bunch of wing feathers of something on the ground below tree. I can't ID the feathers from this but the shafts were complete so it was some older bird. If RTHA was here they should still be in nest judging by others age in the field- so a failed nest probably by RTHA. Called search at N107 showed it to be an Active territory. I called a few stations to the N-E along drainage and I got a male response. I saw him fly off to the east. There also was an owl in the stand in same place when I walked up. I followed the male a bit and called, but got no other response. There are mature PIPO in the areas that he flew to, but no structures seen. I drove around to the possible site that a volunteer had seen last year. It was a ways from nest stand over the ridge to the S. I had to walk in about 1.5 miles for the road was in bad shape. It could have been a goshawk nest at one time, but felt more like RTHA. It is right along the road in a large PIPO. It had been used this year, but as I searched at base of tree found a dead chick @ 7-14 days. It had no feathers erupted, but it looked big like RTHA. In looking some more, I did find a molted RTHA feather, so another failed RTHA nest here. As I was walking out, a pair of RTHA circled high above me, calling all the time. I feel this must be the pair that failed here and I was carrying one of their feathers. Do they "feel" any loss of some kind? Is this response to a failed nest just a hormonal dictated part of the breeding season- the physiology is still ongoing this early in season, so is the need of staying around just a physiological response or a "feeling-attachment"?

## 2004

6 MAY: In for initial nest check. N7 is unused and N77 is almost gone as is the X nest here. New nest found in the stand where N107 use to be. Female on nest incubating in new nest in low branch of large PIPO that is up from the 107 right on the edge of the meadow near road junctions. As I got out of the car, I picked up a feather right there on road edge. I walked from meadow along the game trail and walked right under nest before I saw it. It is low on end of branch that overhangs the trail. Down on rim and I saw her head. I had to go out to road for a good OP marked "SE OP 04". Have to talk to K Schuetz about the brush piled across the road- NOT to burn this, too close.

17 JUN: In for nest check. Successful with 3 chicks in nest that I can see. 2 @ 17-19 d and 1 @ 24-26d. All quiet and peaceful, sleeping mostly. I saw them watching an adult probably, but I did not see or hear her.

25 JUN: In for nest check. WOW another one with 4 chicks. Successful with a wide range of ages again, just like JAC. 2 @ 32-34d, 1 @ 28-30d and 1 @ 24-26d. I didn't see the smallest one last time. Female was in stand and took off flying at first. I took a long time watching here to establish ages and she came in later to perch and only called 2 times.

Damn another flat tire. Changed in along the dirt road along Antelope CK and was passed by a log truck. This put a crimp in the rest of the day for nest checks.

## 2005

9 MAY: In for first check. Original nest is unused, but RTHA is nearby down the draw. Walked the stand of # 168 and no new structures seen nor sight or sound of goshawk. Waited out another brief storm and then checked stand of #77 and the "owl X" (#218) nest but both these nests pretty much gone now. No sight or sound of goshawk – unused.

8 JUN: As a hunch I went to check out a draw off rd 1609 further along SE of #168 stand. It is a short stand but looks good, but I did not see anything. At the road I did a set of calls but there was no response.

*Did not visit/check again this year.*

## 2006

2 MAY: New RTHA nest right near #7. First saw feathers from a kill on ground as searching down draw from #7. Nest with female incubating. As walking nearer to look into nest, saw male RTHA fly in with prey item. As I got closer, he called one time. Nest #77 is partial- mostly gone, and "X" also. No activity nor sight or sound of goshawk. Searched stand of #107/168. Possible? new structure right by #107 tree. Can't really tell yet if occupied- it looks too small. But did see large goshawk size bird fly out of stand while searching around this tree. It could be a young female that just built small-or not. Will call it possibly active until I can get back in June.

20 JUN: In to re-check and call. Well- there is a COHA and GRGR here. Where I thought it might be, it is not. But after one call I got a COHA response. As I walked toward that, I spotted a GRGR perched in a tree about 30 ft from me. He/She was watching the COHA (that I could not see) and took off to a nearby tree and then the COHA attacked it. They flew off a ways into a thicket of trees with the cooper's after the owl. SO- do GRGR prey on accipiter??? Perhaps, but don't think so. No goshawk seen here and I left not wanting to disturb the COHA anymore.

## 2007

14 MAY: Clear and sunny but lots of smoke in BVRD- all prescribed burns. In for first check. Nest#7 is gone. Went to re-check what C. Kranich did earlier and to mark trees. Shit! Occupied in nest #77! Female goshawk incubating. Walked in thinking nest is gone which it mostly was last year, but it was rebuilt and she was there. C. Kranich missed her- need to call FS to NOT burn here. Checked #168/107 area. #107 is gone but tree now marked, and #168 is unused- put metal sign on tree and measured it.

18 JUN: Successful with 3 chicks all up and >34 days. 2 branched already. I heard a light chatter from them as I got out of truck. No adults in evidence.

## 2008

28 MAY: In for first check. Checked all areas along the road. #7 is gone and RTHA nest near it is empty. No sight or sound of goshawk in any areas. #77 and #168 are up but unused. Searched down draw from 168 but nothing.

## 2009

26 MAY: Found a new unused nest structure (Sen X 09)( *which now is #217*) in draw up SE of #77, in med PSME, good condition, same type of nest and structure. Nest #77 is unused. So possibly in the last few years that I didn't find them, this nest was probably the one used. It looks well built and recent. Nest stand of #107/168 unoccupied.

*Did not visit/check again this year.*

## 2010

17 MAY: Out with FS crew of 7 people for goshawk training show-n-tell. We all got out to spread out to search stand as training. Started toward #217 and down. Female on #77 incubating. I found her and then had to wait to gather all crew and show them the nest. She stayed put on nest though the whole time. Walked other area of #107/168 to give them examples of nest sites. Drove out Antelope way around to show them where to access SENE site. Did not go visit this territory though.

12 AUG: In to take measurements for write up. #77 did not have that much down or white wash on rim- a bit on the ground- but if this was successful here it was probably only 1 chick and/or this nest failed. Did not see or hear any goshawk while there. No juveniles called. (*I learned later that the FS had checked and this was successful with 2 chicks.*) Finished measurements at other #107 stand. The large PIPs here still seem the same but the understory- with the under burn of last fall- seems deteriorated from what it was. But maybe all new burns look like this. No sight or sound of goshawk.

## 2011

22 JUN: sunny and warm finally about 80 \*. In to re-measure strike and dip. All done now and measured but at 2 sites I got a different strike than TJF (*Ted Fremd*) so will have to re-check my method with him at OG238 tomorrow. There was a crew and equipment up rd#1601 with activity in this area-road brush clearing. At the stand of #168, the water spring had had a lot of work obviously right by this nest tree. A new water tank installed and piping now underground that brings water into this stock pond.

## SENECA EAST

SENE <sup>11</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	11	6/23/92	N	S	2	Did have 3 chicks in nest at first
1993	11	4/29/93	Y	S	2	
1994	53	6/17/94	Y	S	3	
1995		4/25/95		UNO		
1996		4/30/96		UNO		
1997		4/24/97		UNO		
1998		5/9/98		UNO		
1999	11	5/10/99	Y	S	3	
2000	11	4/20/00	Y	F		
2001		5/8/01		UNO		
2002	11	4/30/02		Usurped		Taken by GHOW
2003	11	5/2/03		Usurped		Taken by GHOW
2004		5/6/04		UNO		
2005		5/9/05		UNO		
2006		5/2/06		UNO		
2007		5/14/07		UNO		
2008		5/28/08		UNO		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory was one of the first 12 territories found in 1992. A timber sale had already been sold in this area when the nest was found and the contractors would not renegotiate with the TSO to save these units. Only the nest tree and a small surrounding area (about 30 ac) were preserved. The habitat surrounding this nest stand was greatly altered by this timber cut in 1992-



93. In addition, a crew in 1995 went in early in the breeding season to mark units for machine piling that occurred that year; and then, a prescribed burn was done in 2007. The surrounding forest in all directions is greatly altered and consists of a more open secondary growth. I did an extensive called search in 2004 into these surrounding areas, using aerial photos to target any viable habitat nearby, but with no results.

It is of note that this territory was dormant for 4 years and then again used by goshawk a couple of years, even in this relatively insignificant island of habitat. However, after 2 consecutive years of use by GHOW, it has not been used since. I stopped the called searches of this territory around 2005; however, I did check the nest stand up until 2009.

Photo: Nest tree #11 (center in shadow)



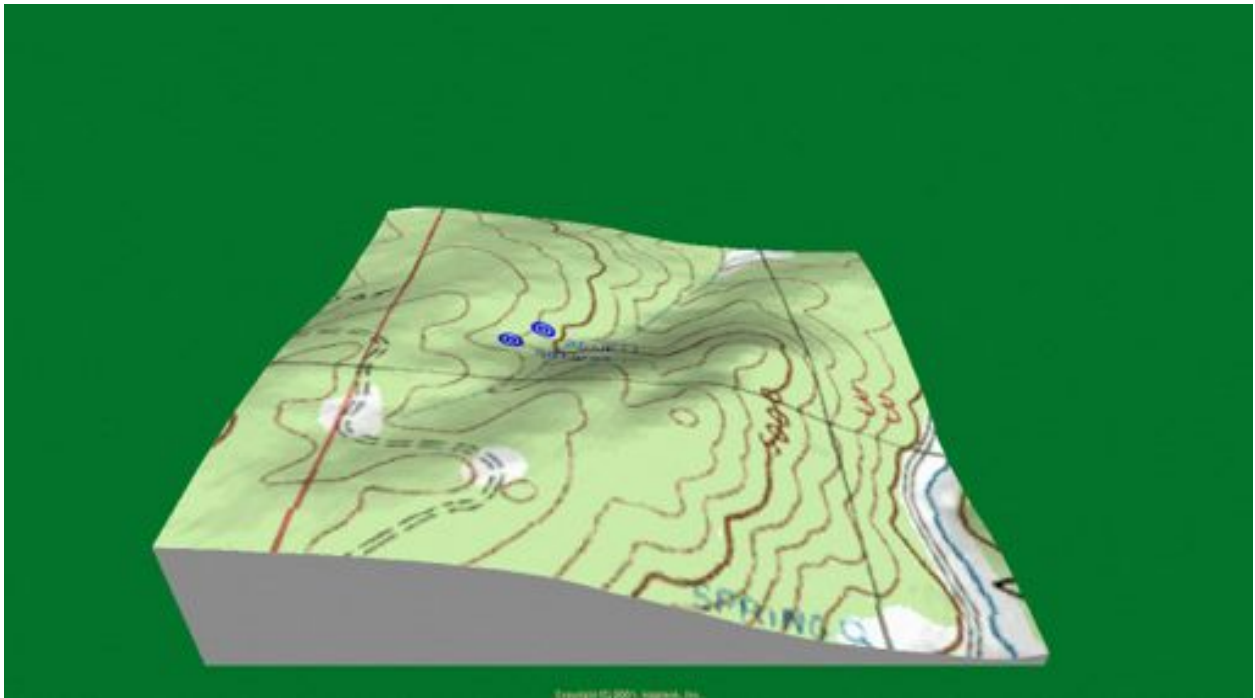


Both photos in area of Nest tree #53. This is uphill from #11 and the stump in picture represents all that is left of the tree #53.





*North up*



SENECA EAST

## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
SENECA EAST -11	TAG	5028	PSME	34	SW	60	326	20 to NE
SENECA EAST -53	NO TAG *	5059	PSME	31	nd	nd	280	20 to N

## NEST USAGE AND LONGEVITY THROUGH THE YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
11	A	A	I	I	I	I	I	A	A	I
53			A	I	I	I	I	I	I	X

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
11	U	U	I	I	I	P	X	DNC	DNC	X
53							X			tree down

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = 435 acres are established in this area as stated in FS database, but date of establishment is unknown. Also, dubious as to the viability of surrounding area for providing good habitat.

### Trapping and Banding History

In 1993- Female adult: She returned to an alternate nest site in this same territory in 1994, and in 1995 moved to an adjacent territory-Rock Springs South (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### SENECA EAST

#### 1992

23-Jun-92: 1700: 2 adults defensive and vocalizing; 3 Nestlings, approx 25-35 days old. Nestlings breast are 50% feathered, back 75% and primaries 2-3 cm out, one of them is branching.

23-Jul-92: 0630-1140: Trapping and banding, caught one juvenile.

04-Aug-92: 0630-1000: Only saw 2 Fledglings in area; no adults present; birds seemed very disturbed.

13-Nov-92: Nest site data collection

#### 1993

29-Apr-93: 1100: 1 adult on nest#11 incubating and 1 adult defensive and vocalizing

04-Jun-93: 1515: 2 Nestlings visible, approx 11-14 days old; 1 adult perched on nest, defensive and vocalizing. Cleared site for trapping.

15-Jun-93: 0500: Trapping and banding successful, caught 1 adult female. She has large growth on right side of neck (old injury / swollen gland??), 6 retices new, flight feathers coming in.

06-Jul-93: 2 Fledglings seen and very vocal; no adults present. Fledglings perched on downed log with ground squirrel remains on log.

18-Aug-93: Nest site data collection

#### 1994

11-May-94: 1245-1422: Walk-in to nest, appears unoccupied. Unidentified raptor seen, possibly goshawk; Down and adult primary feather found 10 m up drainage from nest #11 tree.

16-Jun-94: 0930-1700: Calling in area. Heard probable goshawk kek approx. 2 transects 325 deg. from nest #0011. Did not see bird but possible goshawk wails/begging call from 1 transect E of nest.

17-Jun-94: 1440-1540: New nest found(#53) with 3 nestlings in nest. 1 adult in area defensive. Magpie remains found at a roost in 6' old snag.

27-Jun-94: 1840-1856: Fledgling check- 3 at nest @ 36-38 days old. Adult female defensive in area and has black/white band 63/L and aluminum on right leg.

22-Jul-94: Collecting veg data. Saw 2 juveniles and heard them several times. Tagged new tree & collect pellets. Juveniles only came in to me while I was in good stand NE of drainage- stayed mainly down by meadow.

#### 1995

25 Apr: In for initial check. Neither nest is being used and no sight/sound of goshawk. There is a lot of blue/yellow flagging right down through the drainage going by the #53 nest. When was this activity?? Looks like "Camp MP" " Unit 17 B & Y". Wonder when people were in here doing this. Talked to Jackie in fire dept. and it was laid out in fall, but they will enter to do machine piling in mid-summer, July. She said she would wait to hear from me if goshawk are there before she sent anyone in there.

12 May: In for second search of stand. Searched the stand and both nests still unoccupied and no sight/sound of goshawk. This is a limited stand for most of the adjoining area has been logged. Mainly searched the drainage down to meadow and back along the NW ridge.

27 May: In for third search and using caller. Called stations in and around stand but again no sight/sound of goshawk. There are a pair of ravens nesting down by the meadow and were quite upset by my calling.

## 1996

30 Apr: In to do initial check. Possible? that this is occupied, there is a bit of down on nest #11, but I could not see into nest. Nest is deep so she may be hunched down. Walked up to nest #53 and it is unused. I walked all around #11 to see it from all sides but nothing conclusive. 3 Turkey Vultures flew low and circled overhead while I was sitting watched at first.

29 May: Drove in to check stand again, but no goshawk there. Both nests still unoccupied. Did not do any calling either. 3 Juncos did an amazing display for me. Lots of click calls and a broken wing dance. I assume it was 1 pair and an third (male? female?) that was the intruder being chased off. There was a lot of the broken wing display - was that for the intruder or for me??

4 June: In to do search and using caller. Called 8+ stations (see map) in stand keeping to the suitable habitat, working toward meadow area. No sight/sound of goshawk. A RTHA pair is nesting in the meadow further down. The last time a goshawk was here was 1994, female with band 63/L. In 1995, that same female moved and used RSS. I have little hope for this territory, because so little habitat was retained - no PFA established. The nest was originally found after this timber sale had already been sold. The contractors would not negotiate a trade of units, but they were not allowed to cut the nest tree and the surrounding 30 ac. or so.

## 1997

24 Apr: In for initial check. Both nests are unused. #11 is still good, but #53 is 1/2 gone. The PSME is dead and in worse condition than last year, may not be here next year. No sight/sound of goshawk.

## 1998

9 May: In to do initial check. Both nests unused and no sight/sound of goshawk.

## 1999

10 May: Occupied !!! Nest #11 is being used again, unbelievable! Female on nest incubating. This was one of the original nests found by Cam and she really tried hard to lobby to save this from the planned timber cut. They did log this out leaving only this stand essentially. Since then I have checked the nests, but this nest was last used in 1993 and territory last used in 1994. It has been 4 years dormant. I have been surprised that even GHOW have not used it. This territory is where the banded bird moved to RSS one year. I will be interested to see if RSS is occupied this year (*Note: RSS was unoccupied*). Also, my thought that this is an alternated territory for Seneca 701 is not right, because 701 is also occupied this year by goshawk.

24 June: In for first nestling check. 3 chicks young @ 17-19 days? Did not see or hear any adults even while I GPS'd the tree. A Turkey Vulture flew over but didn't come into the stand.

7 July: Fledgling check - 3 asleep in nest @ 34 days? I watched for a long time from the OP on hill to make sure the 3rd chick was still there. I watched the chicks actually fall asleep! I whistled softly and that brought the adult female in. She was perched behind me, watching me, flew over me and called one time. I left.

## 2000

20 Apr: In for initial check. Nest #11 is occupied - female on nest incubating. Saw a shadow that could have been the male flying in. We watched for about 20 min (Sarah Herve and Matt Smith) and she did not move. This OP will give a good view for photos for Sarah.

28 June: In for nestling check. Failed! Nobody home - no chicks in nest, branches, or ground -very little wh/wa on ground - no down on nest rim. Have to call this a failure, no goshawk heard or seen. We were in earlier in Apr then usual on first check and I did not come in here after the bad cold snap we had this season.

## 2001

8 MAY: In for initial nest check. Unoccupied and nest is still up and good. Had to walk in from main road, fallen log across road. As walked and searched stand, no sight/sound of goshawk.

*Did not visit/check again this year.*

## **2002**

30 APR: In for initial nest check. GHOW is in N11. Again, I had the feeling that this nest was taken as I drove in, doubting myself as I walked up the hill, and yes it was but not by goshawk. 2 large downy chicks in nest, sitting up against bole of tree watching me. Took 2 photos of them. Heard a soft hoot from adult in stand when was at the base of tree, but they did not come in.

## **2003**

2 MAY: In for initial nest check. GHOW using N11 again. 1 very big chick is sitting up in nest. No adults seen or heard. Usurped territory again!

## **2004**

6 MAY: In for initial nest check. Unused, and just walked into check nest only. Did not walk and search much today.

22 JUN: In for second called search. Using photo 1501-79, drove up road that comes in along top of nest area to the end and searched the good looking habitat in next draw. This area has some tall trees, but it is only a 2 story stand. A burn has occurred here also, probably a prescribed burn. Went back to walk and call nest stand but nothing. See track "22 JUN 04 SENE". So this territory is Unoccupied this year.

## **2005**

9 MAY: In for first check. Stopped raining and hailing so just walked up to check the original nest tree and draw. Unused but nest still up.

*Did not visit/check again this year.*

## **2006**

2 MAY: In for first check. Have to walk all the way in because a down tree is blocking road right at main FS road. Nest #11 is still up but unused. Did not see any other structures nor sight or sound of goshawk.

*Did not visit/check again this year.*

## **2007**

14 MAY: In for first check. Nest #11 is unused and only partial now. C. Kranich had marked it with flag for FS crew when they come into do burns. I walked up and marked 2 big PIPO @ nest #53 area (nest long gone) so crew just needs to walk up the 2-track that runs by #11 and they will see the stand area. I continued to survey area around these nests and walking through the suitable habitat towards meadow, but no sight or sound of goshawk.

*Did not visit/check again this year.*

## **2008**

28 MAY: In for first check. Unoccupied or unused. All nests gone now. The 2-track and jeep trail that runs up and through this stand is more pronounced. No sight or sound of goshawk. This one has been gone now for many years!

*Did not visit/check again this year.*

## **2009**

*Did not visit/check this year.*

## **2010**

17 MAY: Out with 7 FS crew for training and showed them the entrance road to go into check this territory. I did not ever check it this year and I do not think the FS crew had time to scope it out either. There is no definite data for this territory this year.

## 2011

22 JUN: Road into area blocked by down tree and cows in pasture- will walk in from the Antelope road. All measured but curious fact that the nest tree#53 was *cut* down! I was following the gps coordinates and was right in the area of this tree but doubting myself for all I could see were large PIPO. But as I looked down I realized that the 31 dbh PSME was now a stump! Since I had not checked here for so long I had mistakenly remembered this to be a PIPO but it wasn't- and now no tree at all.



## STEAGALL SPRINGS TERRITORY

STE <sup>2</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	2	5/20/92	N	S	2	
1993	2	4/27/93	Y	S	1	
1994		4/28/94		UNO		
1995	65	4/26/95	N	F		Immature female seen nest building
1996	2	4/30/96	Y	S	2	
1997	2	4/29/97	Y	S/F		
1998		5/10/98		UNO		
1999		5/13/99		A		Possibly in #156?
2000	141	6/13/00	N	S	3	
2001		5/16/01		UNO		
2002	156	5/7/02	Y	S	3	
2003	156	5/2/03	Y	S	2	
2004		5/3/04		A		
2005		5/9/05		UNO		
2006	(156)	5/2/06		Usurped		No good ID, GHOW or GRGR?
2007		5/9/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

There has been continual disturbance around this territory; and it is likely the case that the goshawks have been extirpated from these stands as a result. The “historical nest site”, consisting of a small patch of trees surrounded by a clear-cut, was the focal point for inclusion of this area in the study. The new nest stand, found in 1992, was to the east in a fairly decent structured forest, but with off-highway vehicular tracks and firewood cutting ongoing through the years. With this rather constant activity through the years, the trend of goshawk migrating to the east continues.

In 1994, the noise and cutting activity from the Bull timber sale surrounding this stand was probably a cause of the unoccupied status for this year (no goshawk regulations were in place- there were no time limitations or distance restrictions enforced during the breeding season). In 2003, more thinning units were laid out within the nest stand itself. Ken Schuetz (Wildlife Biologist and Planner for BVRD) walked the stand with me in 2004 to assess the efficacy of the stipulations that were attached to this thinning project. I was told that only trees < 7” DBH were to be marked and buffers around the nest trees themselves were to be in place. However, this is not what happened on the ground. Going in to search in 2005 was a sad experience; the stand had been completely opened up; skid trails were prominent all through the nest stand and encircling the nest trees themselves; and more than just the <7” DBH trees had



The photo to left shows nest tree #2 (PIPO in center) after timber sale. When first discovered, one could not even see the nest tree upon approach.

been taken out. The understory and complexity of this stand was drastically altered. It is notable that owls next usurped this territory.

In 2010 and 2011, while finalizing measurements of nest trees, I did notice that the skid trails around #141 and #156 are

recovering to a degree; however, the stands that contain #2 and #65 are unrecognizable as what was once goshawk habitat.

Photo to right is what is left in area of nest tree #65. Author is standing on the nest tree.

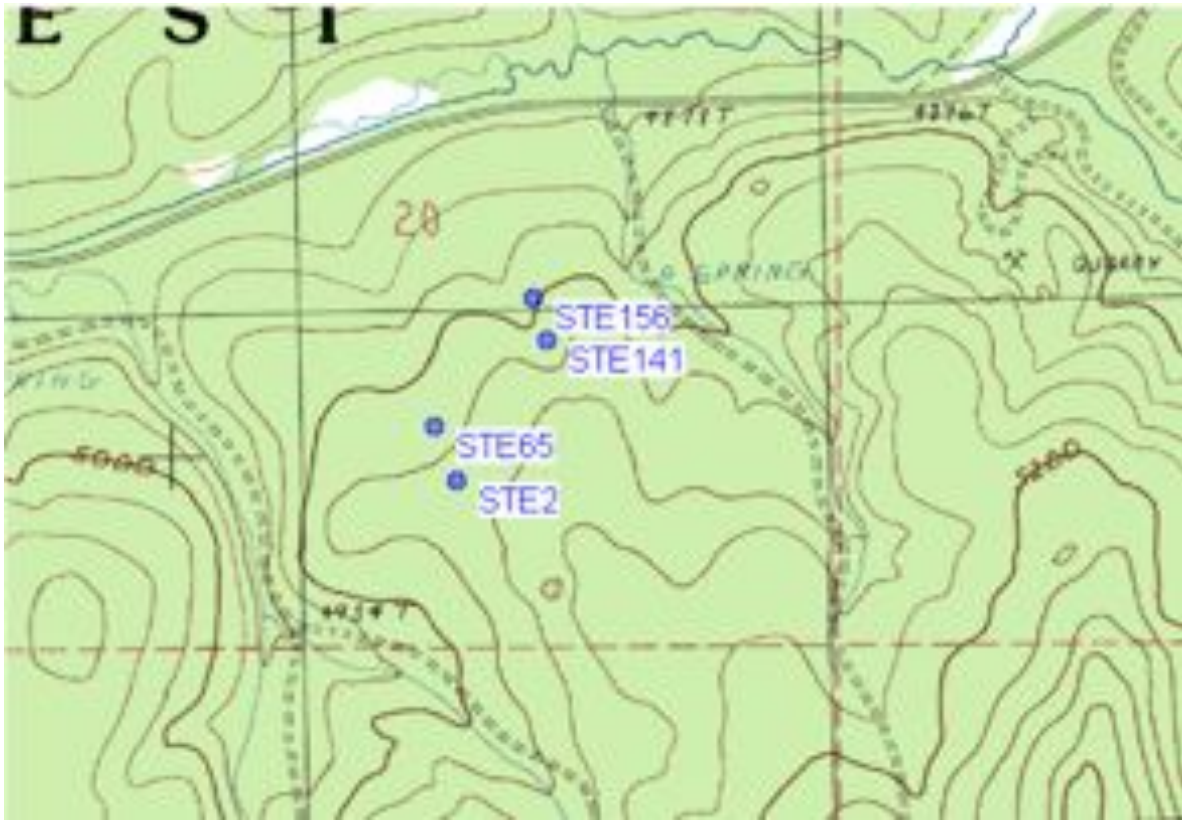


Left:  
Nest tree #141

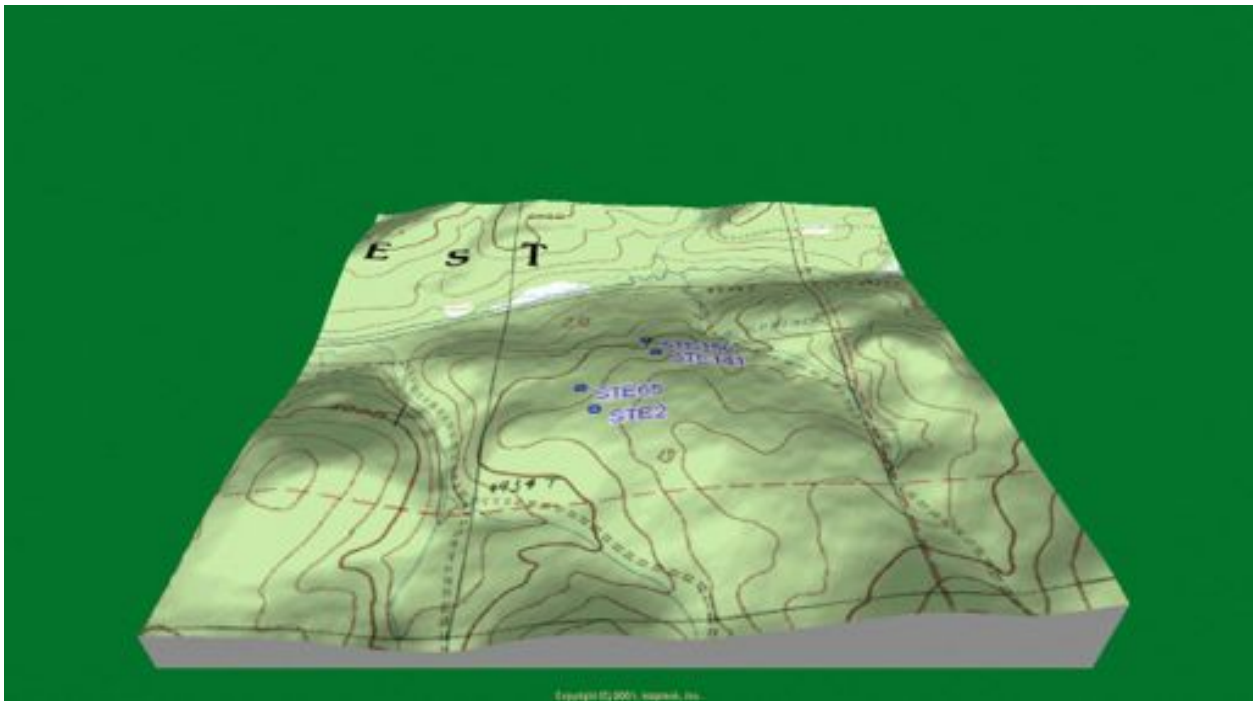
Right:  
Nest tree #156

Both in area with a diminished understory after cutting in 2004





North up



STEAGALL SPRINGS TERRITORY



## NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
STEAGALL SPRINGS -02	TAG	5042	PIPO	33	SE	48	180	3 to W
STEAGALL SPRINGS -65	NO TAG *	5016	DD PIPO	>20	N	40	flat	flat
STEAGALL SPRINGS -141	TAG	5021	PIPO	39	225	80	92	20 to W
STEAGALL SPRINGS -156	TAG	4987	PIPO	39	180	50	82	18 to W

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
02	A	A	I	I	A	A	I	I	I	I
65				R	I	I	I	I	I	I
141									A	I
156								A?	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
02	P	X					DNC	DNC		X
65	X	X								tree down
141	X	X							X	X
156	A	A	I	I	U	I			P	P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = 439 acres established according to FS records, date unknown . Viability of this PFA questionable after so much activity in this area . There is potential good goshawk habitat still on the ground east-southeast along FS road #485 to the end of road (as of 2011).

### Recordings

In 1996- Female adult vocalizations

*steagall springs 96 Jun13.mp3 and steagall springs 96 May28.mp3*

### Trapping and Banding History

In 1993- Female adult: She was never known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### STEAGALL SPRINGS

#### 1992

29-Apr-92: 0730-1030: Stand watch 2 hr. Played taped call, got response from 1 adult calling and flying in from E of observers. Found plucking post in historical nest stand (rabbit remains).

20-May-92: 1 adult present; responded to tape with alarm call, aggressive defensive behavior. Left area due to light rain.

22-Jun-92: 1030-1130: 2 adults present vocalizing and defensive; Found nest with 2 nestlings visible only from front. Approx. 20-30 days old. Nestlings using alarm call. Heard loud wailing (female adult or young?) before nest found.

23-Jul-92: 1330: Trapping and banding attempt, unsuccessful

04-Aug-92: Collected eggshell fragments and sent for analysis

24-Aug-92: 2 Fledglings in area flying, perching, and vocalizing; collected prey remains

#### 1993

16-Apr-93: 1310: Walking to nest tree. 1 adult (female?) close to nest tree; defensive call and behavior observed

27-Apr-93: 1 adult (female) on nest incubating

04-Jun-93: 1650: 1 adult (female) on nest incubating; suspect second clutch

11-Jun-93: 1100: 1 adult incubating still. Cleared area for net set to trap; feather collected

16-Jun-93: Adult (female?) off nest, if young present cannot see them

21-Jun-93: Adult (female) off nest, 1 young present approx. 11 days old

06-Jul-93: 1 young present, approx. 24+ days old. Recheck in 30 days to confirm

#### 1994

28-Apr-94: 1250-1505 Stand watch 2.25 hrs. Territory appears occupied on evidence of seeing 1 adult goshawk flying S of stand: halfway between nest tree site and observer at O.P, marked on photo. Detailed notes on stand watch on pages 94-15 to 94-16 in field notebook.

01-Jun-94: 1437-1602: Walk-in to nest- Inactive. Searched ridge in stand, no goshawk seen but still good GRJA mimics in area. Seems the 2-tracks and firewood cutting is more pronounced than last year's. (Directions to walk to nest on page 94-41 in field notebook).

16-Jun-94: 1000-1400: Called 13-15 stations through stand and to the E & SE. No goshawk seen or respond. Bull timber sale is in full swing, cutting units to W and S of nest stand. Stu Carlson (TSO) of Bull sale was never informed of the goshawk nest in these units. All the planning last year was done around the Pole Creek nest and none done here. The units that will be cut this summer are right near nest stand, taking a lot of the good habitat left near nest. Sonya Daw found historical nest site that was in the clearcut to west of nest#2 area. This old nest is west of rd#502 - they did save the nest tree clump. Now the #2 nest will be bounded by cutting units. Started calling through the nest stand moving east toward rd#485. Then moved south passing through the best habitat which appears to be Unit#3 that will be cut soon. Further south in drainage- logging is going on in full swing, lots of noise. If bird was there, isn't anymore. It appears to be a lost cause to call here now. I searched a little further east into the very north section of West Fork Little Bear Ck- no response.

## 1995

26 Apr: In for initial check. Walked in the N#2 but it is unused. As looking at this nest, I heard a very quiet chirped alarm call to the north. Walked that way and flushed a male from a large PIPO just about 100 m north of #2. The new nest is in a large dead PIPO in this clump of trees, low on bole. The female was sitting on nest edge but she flushed when she saw me. It looks like she is a young, juvenile bird. She has dark streaks on her breast and is brownish as well. I left promptly. The trees are easy to find, just keep walking past the #2 site and look for 2 large dead PIPO to north.

19 June: In to do first nestling check. No birds there. The nest where the immature female was standing seemed only 1/2 built. Nest #2 was still unused. This was an immature bird so maybe the breeding did not occur - or - I walked in at a critical time - or they moved elsewhere. It started to rain and I did not have my caller and tape with me, so did not search further. If I get time I will come back to call area to see if I can find them. Territory occupied but status unknown.

27 June: Spent 2 hrs. calling the stand. No sight/sound of goshawk. No other structures discovered. So nesting attempt was made by adult male and immature female, but this failed. They may have moved far off to retry, but did not make it in this stand. Probably did not get to the egg laying stage either, at least in this nest.

## 1996

30 Apr: In for initial check. Nest #2 is occupied. Lots of down on nest, and when I walked around to north side of tree I could see the top of female's head. Not a clear view, but the amount of down on the nest is a sure sign she is in there.

29 May: First nestling check and recordings. Female was on nest feeding chicks as I walked around to north OP. I could hear the whistles of the chicks - probably 2 or greater. She finally did see me and stooped me. There is a good bit of wh/wa on rim but I could not see into the nest. I'll estimated that they could be about 7-14 days old. I left to go get my recording equipment. When I went back in, I had to get within 100 ft of tree before she stooped me. She stayed in tree above me about 25-30 ft up as I recorder her. She does not have any bands. I heard the male respond in distance briefly just one time. She never stooped at me again though.

13 June: In for nestling check. As parking at usual spot, I can hear the beg calls from here. Female is aggressive and stooping. 2 chicks in nest @ 24-26 days? Recorded her alarm calls - and can still hear begging as I got back to the truck.

27 June: Fledgling check - 1 chick on branch already, 1 in nest @ 38-40 days? Female was in the stand and only came out to me when I was close to the tree. She called a few times, but I did not record it. It was raining at the time, so I left.

25 JUL: In to collect pellets - no birds around at all.

## 1997

29 Apr: In for initial check. Nest #2 is occupied. Female on nest incubating. She did not move or call. Heard a faint wail off in the distance. The other nest is still up and in decent shape yet.

5 July: Failed?? Nest has very little wh/wa and down on rim nor on ground below nest. Judging by nest condition it might have failed, but can't tell for sure. Possible that they may have been early nesters and they fledged early also.

## 1998

10 May: Initial check - both nests unused but up. No sight/sound of goshawk in this immediate area.

7 July: Out briefly at nest stand. GPS'd the nest trees. Did 2 brief calls in the stand and got no response. This wasn't a long or thorough search by any means this year.

## 1999

13 May: In for initial check. Nest #2 is unused, walked a bit in the stand, but did not locate #65 at this time. When I first got out of car and walking up hill, RTHA flew in close to watch me. Their territory must be close by again this year.

23 June: In to do search using the caller. When I drove up to park at usual spot, an adult goshawk was flying low and circled over me. Appears to be a hunting male? They must be here somewhere. Spent 2 hrs calling and searching, but never did find the nest. I saw adults 3 times while searching (see map of 2000 as to areas searched) but they did not respond back to the caller. Don't know if it was the one hunter or perhaps 2 different birds. One time it perched and watched me when I was out on the road

in the drainage to the ENE. I did find an old nest structure in the draw to the east that I marked. Thought I heard a beg call, but there were good GRJA mimics also. So Occupied but never found them.  
(*Note: this old nest structure found is actually #141 that will be used next year in 2000. I will discover another "old" structure #156 very near to this tree that I now believe was used by these guys this year. If this is so, I walked right by them in 1999 and did not see them. This is a very low nest on a large PIPO covered by a thicket of small PIPO that surround the base of this tree.*)

## 2000

20 Apr: Initial check - out with Matt Smith and Sarah Herve. Had to walk in from highway because logs were down blocking road. Both nest#2 and #65 appear unused. We searched stand over to east where the old structure X was, but did not find it. It appeared to be gone.

13 June: In for second search using the caller. Nest X (*now #141*) is being used, we had just missed it on the first time. Got no response to the caller as going through the stand. When I got to the ridge of the draw where X is, she flew out to me and called several times at me. She has kind of a hiccup to her voice and she does not have any bands. She quieted down after awhile, for I had to spend time walking around to find any OP site. Nest is in large PIPO out near end of limb very high up. 3 chicks I think. One of the wings I could see already had pin feathers - probably 14-17 days? Have marked with flagging 3 lodgepoles below tree in the draw where you can see somewhat into nest.

28 June: Fledging check - all fledged but one branched by nest (@32-43 days?). Sarah tried to get some photos - no good. I got confused here, because I found another old structure (*see notes of 1999 above*) that is right near this tree (*now this is #156*). Heard another juvenile call in the stand but did not see it, so I'll assume that all the chicks made it. Searched at base of tree and did not find any evidence that any of them had been eaten.

## 2001

16 MAY: In for initial check. N#141 may be occupied. It is hard to see, but I think I may see a tail, but not sure. There is not much down on rim, but I see some wh/wa on the branch. I sat and watched a while, but did not see any activity. Will have to come back.

18 JUN: *I have no notes of returning here but on my field sheets it is marked that I rechecked on this date. I remember doing this, but I was out with Sarah Herve and spaced out writing it up in my field notebook. Opps! Must have been at the end of the day. The nest was not occupied.*

## 2002

7 MAY: In for initial check. Occupied and female is on the "X" nest, now #156, incubating. This is the structure I marked years ago before it was seen being used, this is the low one near #141, which is now gone. I marked a new route to walk in. As was walking out, the male called 2x at me from the 141 tree. I could hear him a good distance as I continued walking.

28 JUN: IN for nest check. 3 chicks and 2 are already branched. One even flew off and away as I got near to nest. One is still in the nest though @ 32-34 days. It took me a long time to orient to find nest and OP, but female did not get excited until I was right at the tree. All the chicks were at the tree alert and watching me at first, until the one flew off. I did hear the male call one time while I was walking out.

## 2003

2 MAY: In for initial nest check. Came in from the NE road #485 this time to start at last year's areas, shorter walk to nest stand than from original way. Parked at the road closure up from highway about .2 of a mile, then walk straight uphill to clearing at top. Flagged a small PIPO to walk downhill from here to the "ST-OP". Nest is hard to see into through the trees here. N156 is used with female on nest incubating. There also is a thinning unit marked right here by the nest stand, will have to tell Forest Service about this.

16 JUN: In for nest check. 2 chicks maybe 3 @17-19 days. One looked younger by a bit. Again the female was on nest rim watching me but did not flush or call. The one wing I saw of the chick didn't seem to have as much feather erupted yet as those at Starr have.

26 JUN: Final check. 2 chicks @ 28-30 the one may be older @32 days. They were both calm in nest and watching mom fly around. She was quiet until the last when she wanted me to go. She is familiar, with a high squeak break during her keks, a few each time. I know I have heard her but which territory, which year? Is this a Steagall goshawk or OK Truck barn one? I hope I kept notes on this squeaky voice goshawk!



## 2004

3 MAY: In for initial nest check. Out with K Schuetz. As driving into the stand as originally found, there were 2 workers piling brush up from road on the nest stand side. KS will have to check and stop this activity for now to within ½ mile of nests. We first checked N2 which is gone, and as walking toward other nest sites we heard goshawk call coming from the N156 sites. As got closer, heard alarm call again a couple of times, but while in area searching, no sight/sound of goshawk at all. Only nest left up here is #156 and it is unused at this time. As it is early, we left and I will come back to find them. So Active territory for now. We discussed the thinning plan for this stand, and it seems aggressive. KS said he would knock it back to only taking out the 7" or smaller trees. I thought that leaving a good buffer of forest as it is right around the nest themselves was favorable. We drove down to E to look at some of the habitat that has been set aside as PFA but didn't walk it. After this season, KS said he will re-examine all these units to see what is being thinned, etc.

13 MAY: In for second search. In to see if I can find her. Took about 2 hr walking the stand and all around draws between nests but did not find the new nest. No sight/sound of goshawk this time either. Possible that she is still hidden or with all the early activity in this area, we may have pushed her off this territory, don't know.

11 JUN: In for third called search. Started at nest stand, but no sight/sound of goshawk and no new nests discovered. So, this territory is Active in that a pair attempted to nest and was driven off by activity, or perhaps we just heard a hunting goshawk using the territory. Searched the alternate habitat off of photo 1801-29 to E and SE of original stand. Good habitat but no sight/sound of goshawk. Need to write this up as the possible consequence of entering stands early for activity prior to establishing the occupied territories. Forest Service personnel need to check with KS first.

## 2005

9MAY: Oh how sad! Another one bites the dust. The buzz-saw boys in green did the thinning KS told me about last year. I thought that @ least the nest trees and surrounding stand would not be entered- the areas between would. But @ each nest tree there is now a tractor-skid road around or going exactly by each nest tree. It has totally opened up each nest. The whole area is crisscrossed with skid-roads- still lots of slash and stuff on ground to burn. What was gained here? Have to re-read goshawk guidelines to see if it states that tree areas protected @ least 30 ac, 10 ac??? This is sad- only one nest still up but now opened up. No sight or sound of goshawk. Has started to hail- leaving.

*Did not visit/check again this year.*

## 2006

2 MAY: nest #156 is occupied, but by what species? Down on nest and in watching it for a time still did not see any goshawk head- but if it is an owl, I expect @ this time of year to see the female owl as well. So- occupied but need to ID later.

20 JUN: In to re-check nest. Nest empty and no activity. GRGR/GHOW?? Did not get back in time to ID.

## 2007

9 MAY: First check. Unused- only checked where the one nest is now. Took measurements, but did not walk stand. Need to call it again now.

*Did not visit/check again this year.*

## 2008 and 2009

*Did not visit/check these years. 2008 = Bad nesting year all around (see 2008 note of RSS)*

## 2010

12 AUG: In to do measurements for write-up. In to measure #141 and 156 trees again. I have to admit that the skid trails seem to be growing in after 4-5 years. These 2 nest areas are not as open and dry as they were in 2007. This had been a wet year and the height of grasses and shrubs may have the effect of it not being so open. Perhaps in a few more years this will again be used if it doesn't burn.

## 2011

24 JUN: In to finalize measurements at original nest tree. Well it is thoroughly cleared over on this side as well. This stand is unrecognizable from what it was! It is completely opened up around #2 and #65 –see photos. There are some of the large PIPOs and moderate structure left so that in about 100 years it might grow back to complexity and be viable again for goshawk-but who knows! No sight or sound of goshawk. My thoughts about coming into this stand in the first place are quite right. Any management of these goshawk territories have to be very carefully thought out and monitored OR better yet- nonexistent!

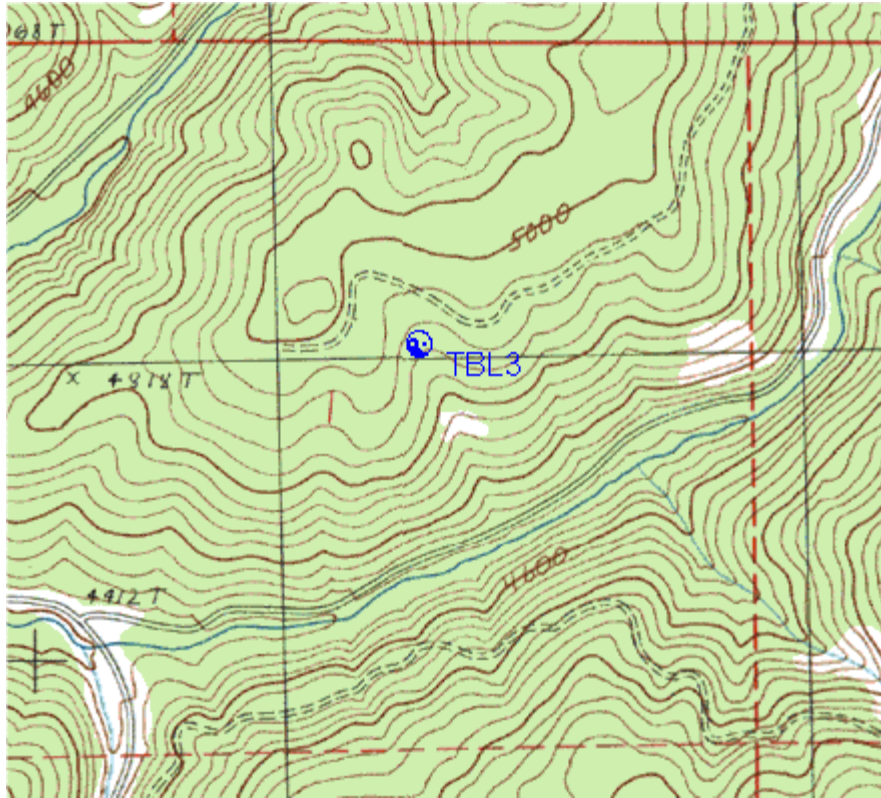
## TABLE MOUNTAIN

TBL <sup>3</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	03	7/7/92	N	S	1	
1993		4/14/93		UNO		
1994		5/12/94		UNO		
1995		5/9/95		UNO		
1996		4/30/96		UNO		
1997		4/29/97		UNO		
1998		6/14/98		UNO		
1999				DNC		
2000				DNC		
2001				DNC		
2002		5/23/02		UNO		
2003				DNC		
2004				DNC		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

There is only one nest site recorded for this territory and it is very likely that this was an ephemeral “one-time-use-only” site; and the true nest cluster will be eventually found in the draws that bound this high ridge. Nest #3 is at the top of the ridge that sits between two good drainages - Middle Fork Canyon Creek and Canyon Creek that leads to Canyon Creek Meadows (which was a viable reservoir with campgrounds in the past, but the dam was poorly constructed and the FS will not be rebuilding it). Good habitat exists on both sides of this ridge and even further NW into Owner Gap Creek and east along Crazy Creek.

The nest tree itself blew down in 1997 and the majority of my searches in the ensuing years were directed to searching the other habitats mentioned above in the hope of finding nesting goshawks. I did discover old unused nest structures in the majority of these drainages, but no definite goshawk activity. There is the possibility that the adjacent territory of Big Canyon could be the alternative territory for the birds we found in 1992.



North up

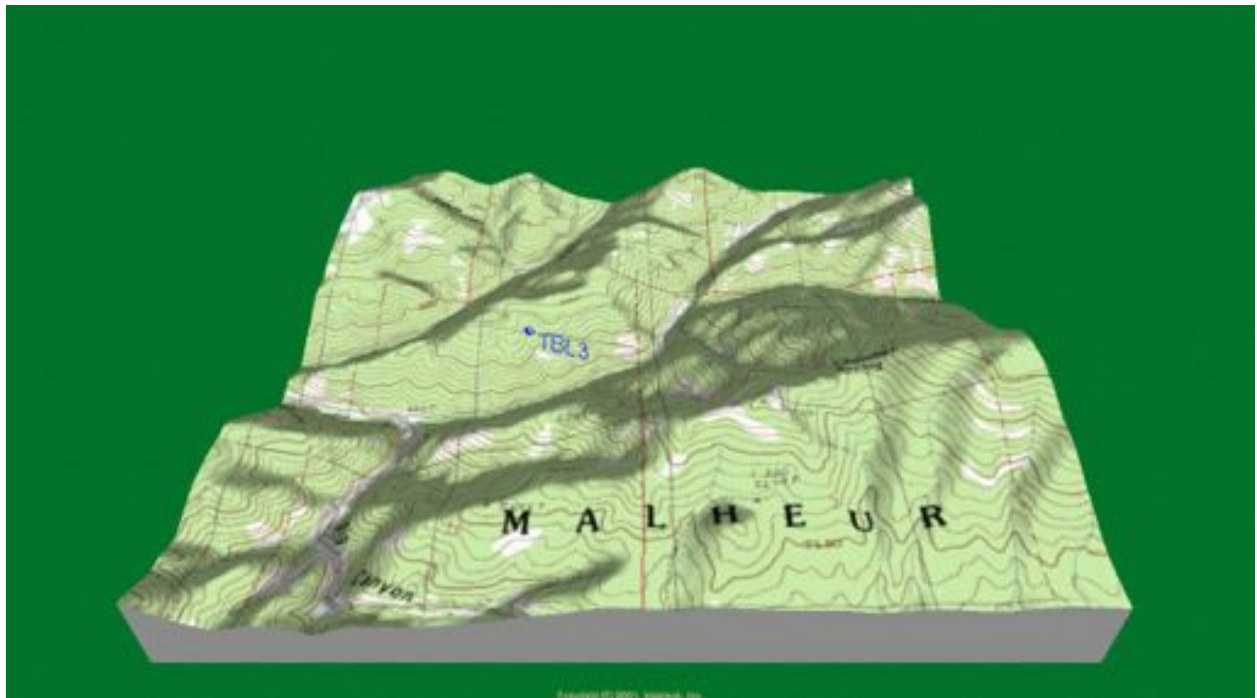


TABLE MOUNTAIN

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
TABLE MOUNTAIN -03	NO TAG *	4873	PIPO	22	SE	50	nd	nd

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
03	A	I	I	I	I	X	X	DNC	DNC	DNC

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010
03	X	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

*Tree blew down in 1997 thus no further data could be recovered other than what was recorded from the initial find.*

**Post Fledging Area (PFA)** = 430 acres established according to FS records.

### Trapping and Banding History

In 1992- Male adult: He was never known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### TABLE MOUNTAIN

#### 1992

07-Jul-92: 1000-1050: 1 adult present defensive and vocalizing; Located nest; 1 Nestling visible; head 80% feathered, breast 60%, and back/ wings 90% feathered.

09-Jul-92: 1430-1530: Trapping attempt with stuffed GHO; 1 adult present briefly showed interest but no stoops, unsuccessful. 1 Nestling approx. 28-35 days old.

22-Jul-92: Adult male captured and banded.

25-Aug-92: 1200-1400: 1 Fledgling in area vocalizing and flying, begging call. Never saw 2nd adult in area or at nest during season.

#### 1993

14-Apr-93: 1205: Stand watch; No sighting of goshawk pair

28-Apr-93: 1045: 2 OPs to N of nest tree, one overlooking previous year's drainage and one situated over ridge- No sightings of goshawk

#### 1994

Mid May walk-in to nest to find it inactive. Did not do any searches or calling at this site in 94, mainly because Sonya Daw was not using it for vegetation studies, we were tight for time, and it was inactive in 93 and had been called then. Also, it is a possibility that the Big Canyon Nest is close enough that goshawk may have moved there. The Can timber sale is also starting their cutting this year, so will need to map those units in relation to nest when done (don't think Sonya had them mapped yet).

12-May-94: 0817-0845: Walk-in to nest; appears unoccupied- no signs of activity; No sight or sound of goshawk.

#### 1995

9 May: In to do first check. Unused and no sight/sound of goshawk. Nest is still up and in fairly good shape.

#### 1996

30 Apr: In to do first nest check. Nest unoccupied but still intact. Will have to do more of an effort this year in searching this drainage. They may still be close. This site seems like one of those ephemeral sites used once, for it is at the top of the ridge that sits between 2 good drainages - Middle Fork Canyon and Canyon Ck. that leads to Canyon Ck Meadows. Good habitat to both sides of this ridge.

9 May: Camped out with Ted (*Ted Fremd*) at Canyon Meadows. Spent 2.5 hr. calling 13 stations along the road that leads up to the nest. Most of this is secondary growth all below road going down to Canyon Ck. - has been logged. Some of the small drainages the road contours around have a few big trees, not a lot of good habitat though. See map of 1996 that plots stations. No sight/sound of goshawk.

#### 1997

29 Apr: In for first check and the nest and tree are completely gone. The tree itself blew down this winter. Nothing to check here now. This has been unoccupied since 1993 thus the only way to monitor this area would be to totally re-call the drainages and surrounding areas. No point in keeping up with this one now. I bet - this being an ephemeral territory - the more used one is elsewhere.

18 June: Started calling stations along rd#715 (Owner Gap Ck) up to Juniper Spring. Spent 1.5 hrs calling stations up road to an old nest in large PIPPO at bend in road at the end. Nest is still up and good shape but unused. No sight/sound of goshawk. Spent 2.5 - 3 hrs. calling stations up at the trail head and to end of rd#651 - no goshawk responses. Went down to rd#1518, the Middle Fork of Canyon road, called 9 stations up- no sight/sound of goshawk. All this is good habitat in this drainage, but too tired to do more.

### **1998**

14 June: Spent most of a day scoping out other possible sites around Table Mtn area. Drove up rd#1518 to old logging road that takes off across stream - #734. Now closed off but it winds up to the ridge where an old nest was on the NW slope of the Middle Fork drainage. There are some deeper drainages that this road contours through that I thought may be good, but it has been logged out. At top walked around to old nest site and called - no sight/sound of goshawk. So maybe the Middle Fork being the territory was wrong - at least this year. There are still more possibilities to check through the years, but if I check in one direction on year they might have moved in the other direction. This will be serendipity if I pick these goshawk up again. Have to be in the right place at the right time.

### **1999**

*Did not visit/check again this year.*

### **2000**

26 Apr: Was Camping at Canyon Meadows Folboting for 2nd time with Ted (*Ted Fremd*). I left in am to go do first checks on three other territories in the area. As I was driving away from the lake, Ted said a goshawk came into him and alarm called briefly at him. We were camped at the dam end of the lake, and he said the goshawk flew off down the drainage from dam. There is a little valley that takes off by this dam and it looks like it flattens out some. I had thought to go back later in summer to call the dam area, but didn't. This is all good habitat at this upper end of the Canyon Ck drainage. Historically, a goshawk nest was found or marked on the USFS maps up in the Buckhorn Meadows Trail head into the Strawberry Wilderness.

### **2001**

*Did not visit/check again this year.*

### **2002**

23 MAY: Looking for alternative areas that might be in Table territory. Checking out the Canyon Meadows drainage while driving up to table. Stopped and walked the lower road and drainage that goes toward Crazy/Bear creek off of rd #1520. Started to drive up rd #739 that parallels rd 1520 on opposite side of creek. Will now walk the draw that is on this side just opposite of the Table nest hill. At the 2<sup>nd</sup> switchback in rd #739, I took a game trail to south into the draw that is marked "Hab X" This is a good site and a possible alternate site for Table or could possibly an original site, I did not see any structures in here though. Will try to get back to call this. Drove up to old nest. The tree is still just a stump and no new structures seen. Will try to call Hab X and the head of Canyon Creek meadows across from the dam if I have time. The reservoir is low even now. Short day because Curly is limping and Jade has ear problem! Sigh! (*German Shepherd dogs*)

### **2003 -2010**

*Did not visit/check again these years.*

### **2011**

24 JUN: Clear, sunny day of about 50 deg. Tried to get into this stand but no go. Road to nest area blocked by down tree. So I will go with the data that we already have on this nest. Will not get dip and strike on this one because of too much time and effort involved to get into here for little added information. I will leave this one up to the "persons of the future" if they so desire to find this one again.



## WHITEWATER SPRINGS WEST

WSW <sup>50</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997						
1998	120	6/28/98	N	S	2	
1999	120	5/13/99	Y	S	1	
2000	120	5/23/00	Y	F		
2001		5/16/01		UNO		
2002		5/7/02		UNO		
2003		5/2/03		A		#231 possibly used?
2004	171	6/11/04	N	S	3	
2005		4/23/05		UNO		
2006	171	5/2/06	Y	S	2	
2007	171	5/9/07		Usurped		RTHA IN #171
2008				DNC		
2009				DNC		
2010				DNC		
2011	171	6/23/11		Usurped		Most likely GHOW in #171

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory was discovered by a woodcutter's report of hearing an "angry" raptor in the area. It is quite possible that this is an alternative territory for Whitewater Springs (WWS) that is very near (approximately 1 mile over the ridge). This is supported by the observation that after 1998, the WWS territory was usurped when a RTHA pair started using one of the nests there.



The habitat is a good mixture of large PIPO and LAOC and the nest trees coincidentally tend to run along a fence line running parallel to the road here. Through the years, two of the nests (#230 and #231) found in trees right on this fence were never observed occupied. The nests had been used at some time, based on their good condition and

Photo to left: Nest tree #171 in the center group of trees.

the presence of old down feathers observed on the rim. However, their usage was in those years in which nesting goshawks were not found.

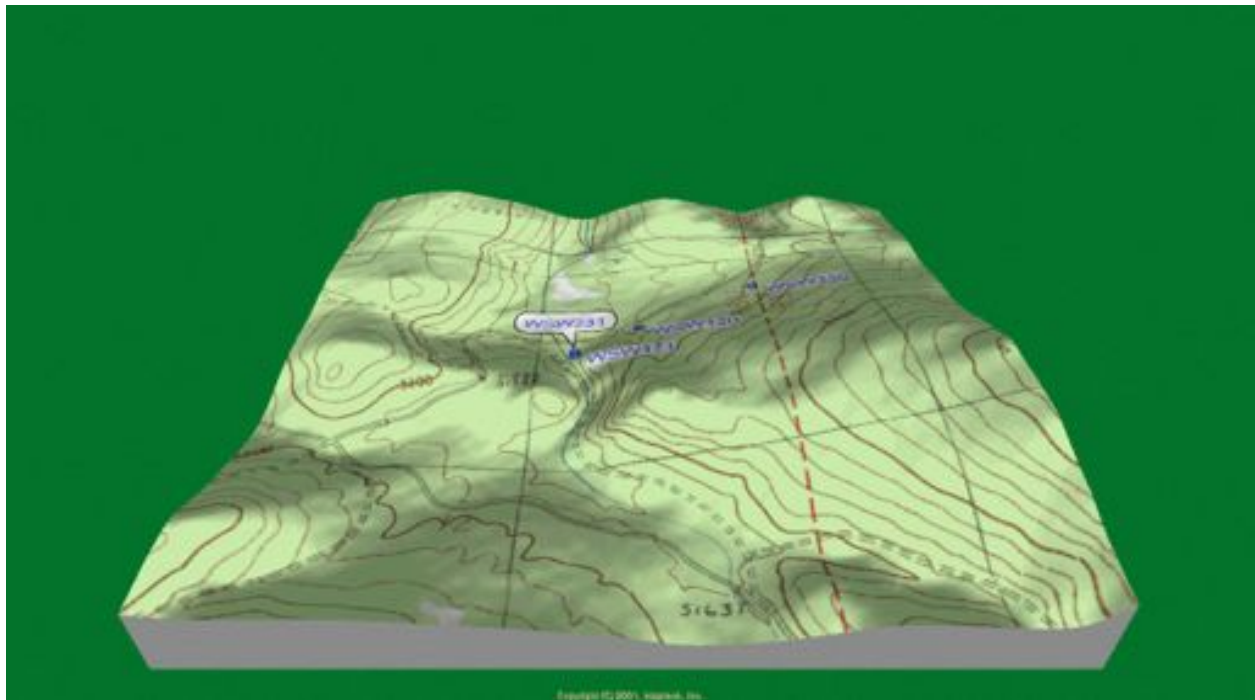
As in other territories, searching stands too early in the nesting season can lead to miscues, as is exemplified in 2000 (see 2000 notes). If searches are started too early in April, one might categorize a nest as being “unoccupied” when in fact it is being used. Goshawk females are very quiet and will sit tight and low on the nest in early incubation even if one is in close proximity to the nest (nor will they respond to the caller early in incubation). So, it is important to revisit nests (if possible) later in May to fully verify nest usage.

Photo to left: Nest tree #230 and photo to right is #231 (adjacent to tree #171)





*North up*



WHITEWATER SPRINGS WEST

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
WHITE H2O SPGS WEST -120	TAG	5098	DD LAOC	22	246	50	180	12 to W
WHITE H2O SPGS WEST -171	TAG	5055	LAOC	28	180	60	flat	flat
WHITE H2O SPGS WEST -230	TAG	5171	PIPO	31	nd	nd	164	15 to W
WHITE H2O SPGS WEST -231	TAG	5050	PIPO	26	156	30	flat	flat

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
120							A	A	A	I
171										
230										
231										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
120	I	I	I	I	P	I	DNC	DNC	DNC	P
171			A	I	A	U-RT				U (OWL?)
230	I	P	P	P	P	X				X
231		A?	I	I	I	I				P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = No PFA acres established according to FS records to which I have access as of 2011. Perhaps this is in the Burns District database and might be found there.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### WHITEWATER SPRINGS WEST

#### 1998

7 JUL: First year of this territory and first visit. A wood cutter and friend of Dorman Gregory (volunteer) said he had seen a goshawk in this area. Went in to check nest and 2 chicks in nest @ 32-34 days. Nest is near the road #906 and female came out to call at me and stooped close several times while I was scoping out the nest. She has a low raspy voice and no bands. GPS'd tree, large LAOC, and while there the male flew in. She started beg calling at him, and he kekked at me, but he flew off shortly. I have a feeling that this may be an alternative territory to WWS. A RTHA has usurped that and this is just over the ridge from there.

#### 1999

13 MAY: In for initial nest check. N120 is occupied with female incubating. Took more accurate GPS readings to outline nest and OP better.

24 JUN: In for nest check. At least 1 chick @ 17 days in nest. Female was on nest sitting low, but when I got nearer she sat up and perched on rim. When I got the scope on her she looked ready to launch herself at me but she never did and remained quiet. Could only see 1 chick, but there may be others.

7 JUL: Final check. 1 chick in nest @ 28-30 days. No sight/sound of adults as walked around to check out nest, but the nestling stood up to watch as moved around in the deadfall to get a better look.

#### 2000

25 APR: In for initial nest check. Nest is still good but not being used. Searched a little just in the near surround.

23 MAY: In for second called search. WOW nest 120 is occupied. As I walked in, it still looked unused but as I got above on the hill I saw some down on rim. I did one call and saw no activity at nest but this is a deep one and not easy to see into. I continued up the drainage to SW and Antelope CK calling stations along the 2 track that joins main road. Walked back to nest to recheck, and this time I saw tail feathers. As I moved uphill again to mark a good OP, I then saw her head and eye as she turned to watch me. So again, lessons! A nest that looks unused at first of season but turns out it is used, and the "no response" to the caller at the early stages.

28 JUN: In for nest check. Failed! No sign of any chicks or adults. Very little wh/wa on ground and little down on nest. There has been a cold snap between the time I last checked, so the heavy snow may have cause a failure, or the eggs didn't hatch, etc!

#### 2001

16 MAY: In for initial nest check. Weather extremes this year for Spring. Nest is unused and searched a little in the near surround, but no sight/sound of goshawk.

*Did not visit/check again this year.*

#### 2002

7 MAY: In for initial nest check. I think I may have found a new nest =WSW X (*now #230*), that lines along the fence line but in the opposite direction in which I searched last year- this is to the NE toward WWS territory. As I was driving down road to N120, I looked off and saw a nice stand of large PIPO and thought I should search in this direction. N120 is unused and this new one looks like there is down on the nest, but I could not see into it nor anybody in it. It is chilly, so if she has flushed off nest I need to leave and come back to check later. If it is not used this year (down on nest from a year past) it definitely is an alternate nest in this territory.



14 JUN: In for nest check. New nest is not used but marked it as WSW X 02. But as I stood marking tree, I heard a good GRJA mimic wail uphill from tree. Searched briefly, but will not have time this year to search more at this territory.

### 2003

2 MAY: In for initial nest check. N120 is still up but unused and the X (230) nest is partially gone also unused. I searched further along fence line to the next cut unit where it leads up from the turn in the road but no sight/sound of goshawk. Will come back to call this area in conjunction with WWS.

29 MAY: In for second called search. I have marked a route- 29 MAY 03 WWSW- that called stations through, between, and around both the Whitewater Springs territories. This one is active with a goshawk here, but no new nest found. Near station 4, between the X (230) nest and 120, I got a male response, he called at me then flew off toward Foster Springs area. Good GRJA mimics here and over by junctions of roads to WWS (station 20-22). No other goshawk response in this area and I recalled by N120 and continued on to the drainage. Along route, I discovered a COHA territory near a meadow to S? and SSHA pair nesting by the RTHA that usurped the WWS nest area. All are marked on the GPS.

### 2004

3 MAY: In for initial nest check. Unused- original nest is still up and the old "X" is partially gone. No sight/sound of goshawk and no new structures seen.

11 JUN: In for second called search. Started to call alternative areas also- see photo 1401-152. Occupied? in a new nest marked as WSW 04 (*now #231*). They like the fence line here. It is a duplicate of the other X nest I found along the fence in 02 but in different direction, this is down by Antelope Ck. The caller SUCKS! I parked near her at the creek, I did several calls right around her and at her and not once did she respond to the caller. I started calling down creek away from her and then back up creek, crossed road to start calling the nest stand proper. Actually, to N along creek it looks good on photo but it is all scrubby lodgepole and not many big trees here. Only at the road end where nest line is, is where good large trees are. I decided to walk and call the fence line and just past the creek crossing, I saw the nest along trail in large PIPO. It doesn't look used though not much down on rim, so I was marking it thinking it was an old nest I had not seen yet. It was only then, while standing at base of tree did she come in hot and stooping. I tried to get higher on hill to see into nest, but couldn't. I guess this is still early for her, maybe just hatched or still on eggs cause the nest doesn't look used nor can I see much in it. She was only aggressive when I was right under the tree. But I found her in spite of the shitty caller.

22 JUN: In for nest check. Surprise!-the active nest is not the one I marked along fence, but a new one just next to it in a large LAOC! (*this is #171*) 3 chicks, 2 branched already @36-38d and 1 in nest @ 34-36d. So, I had it backwards, it was late for her and I was looking at the wrong nest when last here. Both adults present, calling and stooping hard. It took awhile to get uphill to a good OP but all chick look good. Adults are both full age and it was hard to tell male from female because the male had a higher pitched voice than others I have heard.

### 2005

23 APR: In for first check. Attempted to check the nest along fence line because of the post and pole cutting they want to do in here. The nest you can see from the road (#120) looks unused, also same with #171. The "X" nest (*now #231*) in PIPO next to it also looks unused. But I am rained out now- It is raining and dark so detail in nests is not sharp. Will have to come back to re-check and walk the fence line, can't do it today. Well- I waited out the storm and it has cleared. So I did walk the fence line. I parked on road at beginning of the unit below PFA at "old X" site (*now #230*). This nest is partial now and no sight or sound of goshawk. Walked all the way down, again checking #120 and #171 and saw nothing. At least I didn't find any new nests right along road areas.

*Did not visit/check again this year.*

### 2006

2 MAY: In for first check. Occupied in nest #171 down on nest rim and female in nest incubating. Entered by stream way and go to OP uphill to large downed log well bleached out. Can see into nest well from up here.

20 JUN: final nest check. Successful with at least 2 chicks in nest. They are about 1 week younger than others checked so far. No adults seen or heard. Very quiet and at first had thought nest had failed, but then saw wing movement. Very deep nest so there may be more than 2 in nest, but 2 for sure.

### 2007

9 MAY: In for first check. As driving out the 1916 road, passed through the prescribed burn in this area and around Pole Ck. – not too bad smoke today at least. RTHA has taken nest #171. Both adults came into call at me. Saw feathers on nest rim, but no chicks. They must be very young still. Checked and took measurements of all other tree sites. No sight or sound of goshawk.

*Did not visit/check again this year.*

**2008, 2009, and 2010**

*Did not visit/check these years.*

**2011**

23 JUN: In for measurements. All measured and no sight or sound of goshawk while there but #171 was used this year. Looks like a GHOW by feathers on rim of nest and ground. Being this time of year and with no sign of goshawk (which should be here if they used it) I think it is usurped. Had to re-mark #120 again with gps- it is really hard to get good satellites here for some reason. Will correct database.



## WHITEWATER SPRINGS

WWS <sup>12</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	06	6/2/92	N	S	2	
1993	06	4/23/93	Y	F		
1994	12	7/20/94	N	S	2	
1995	95	5/27/95	N	S	1	
1996	06	5/29/96	N	S	2	
1997	95	5/8/97	Y	S	2	
1998		5/10/98	N	A		
1999		5/13/99		UNO		
2000	06	5/23/00		Usurped		RTHA
2001		5/16/01		UNO		Active with RTHA near 06
2002	06	5/7/02		Usurped		RTHA
2003		5/29/03		Usurped		Active with RTHA near 06
2004		5/3/04		Usurped		Active with RTHA new nest found near 06
2005				DNC		
2006				DNC		
2007		5/9/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Though this territory is included in this study, it is actually on the Burns District on the Malheur NF. An historical goshawk nest was located in this area in 1986 and provided the impetus to first call and search this draw. This is a fairly steeply sided draw with the nest sites all on the northeast-facing slope.

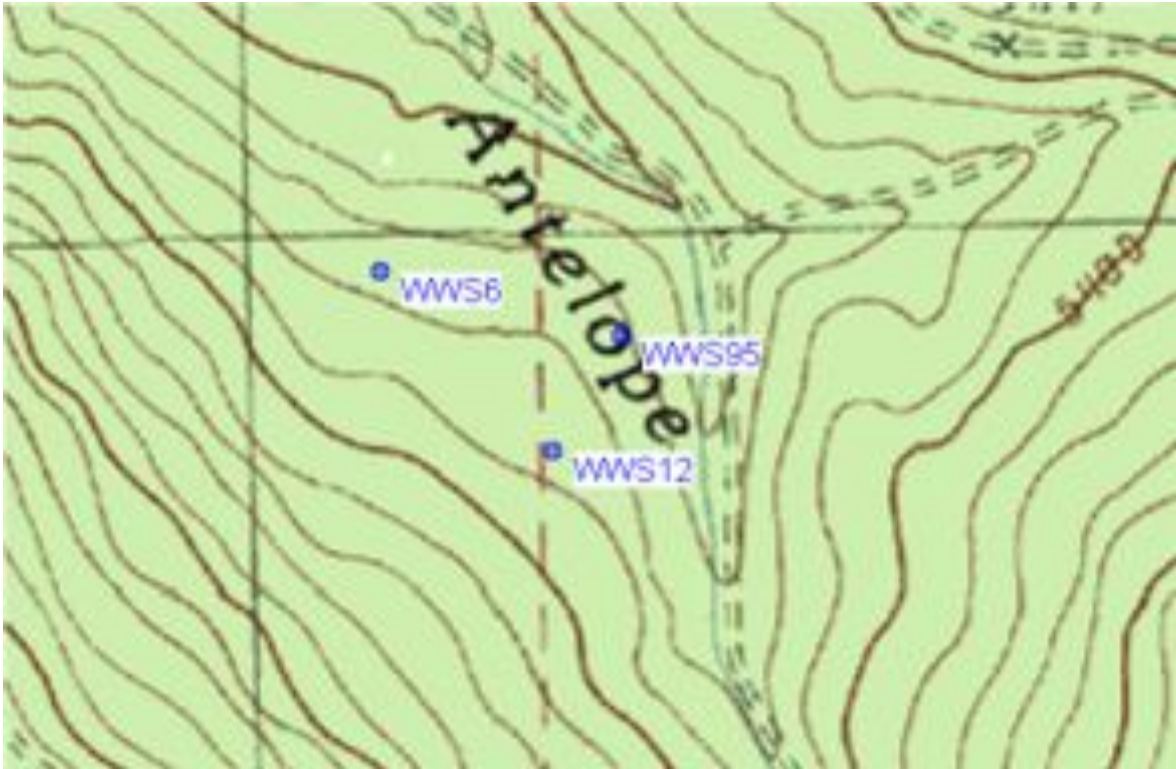
The forest structure is a multi-storied older forest with a dense canopy closure. There was always deadfall on this slope but in the later years, starting around 2001, the dead and dying was becoming more pronounced.

RTHA took over this territory about the same time that the adjacent territory of Whitewater Springs West (WSW) was first noticed. WSW was where nesting goshawk were located more consistently in later years. These two territories are only 1.1 miles apart on different sides of the same ridge and I suspect that these could be considered alternate territories for goshawks; or, the goshawks moved to take nest sites at WSW when the WWS territory was compromised and usurped.

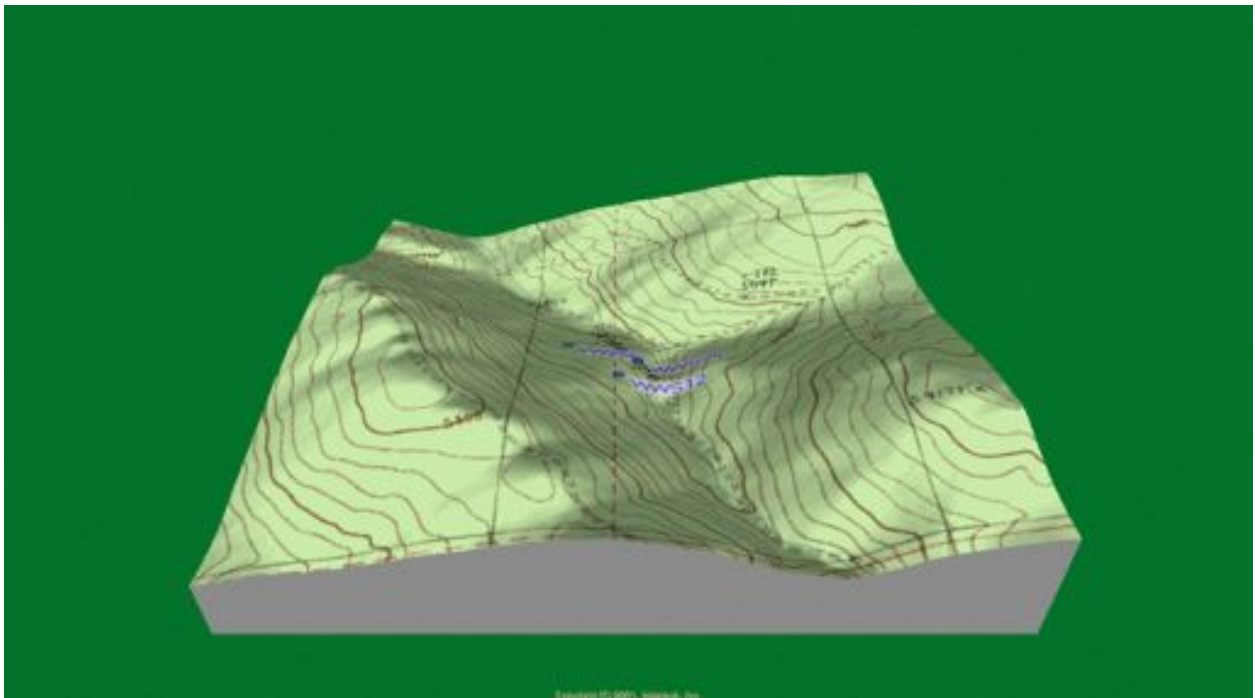
Upon last entry in 2011, it was remarkable how successfully the roads in this drainage were reverting to a natural state. Some of the roads had been officially decommissioned, while others were becoming part of the stream channel and being covered by down trees. This will effectively block access to this draw, which may have the effect of preserving the viability of this territory in the future (assuming an absence of forest fires here).



Photo of Nest tree #6 with Ted Fremd standing at base.



North up



## WHITEWATER SPRINGS

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
WHITEWATER SPRING -06	TAG	5305	LAOC	27	150	90	110	18 to NE
WHITEWATER SPRING -12	NO TAG *	5337	DD PSME	>20	nd	nd	134	6 to NE
WHITEWATER SPRINGS -95	NO TAG *	5264	DD LAOC	<20	nd	nd	170	15 to E

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
06	A	A	I	I	A	I	I	I	U	I
12			A	I	I	I	I	I	I	X
95				A	I	A	I	I	I	P

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
06	U	U?	I	DNC	DNC	I	DNC	DNC	DNC	I
12						X				tree down
95	P	P	P			X				tree down

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\***No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = Not known if any PFA was ever established for this territory. Since this is in another district of FS (Burns), one might find this information in their database, if it exists.

### Recordings

In 1995- Female adult and juvenile vocalizations *whitewater springs 95 Jun19.mp3*  
and *whitewater springs 95 Jun30.mp3* and *whitewater springs end of tape 95.mp3*

In 1996- Female adult vocalizations  
*whitewater springs 96 Jun13.mp3*

### Trapping and Banding History

In 1992- Female adult: She was never known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### WHITEWATER SPRINGS

#### 1992

02-Jun-92: 1204-1340: Nest found (#6). 2 adults vocal and defensive. Some whitewash on ground and nest edge. Eggs or young nestlings still? This is across Rd # 804 from the '86 nesting area. Territory was not monitored through years.

08-Jul-92: 0900-1000: 1 adult and 1 Fledgling in nest area. Fledgling perched on nest and flew off. Feathers collected, nest tree flagged. Thought the juvenile had been flying approx. 7 days.

24-Jul-92: 0600-1030: Trapping and banding, caught female. 2 adults in area being vocal and defensive, feeding young. 2 Fledglings in area.

05-Aug-92: Trapping and banding, caught 1 juvenile male.

#### 1993

07-Apr-93: 1345-1430: Stand watch- 45 min. Heard and saw goshawk (retaining some brown coloring?) approach and stop at nest area and call twice. Did not actually look at nest itself.

23-Apr-93: 1230: 1 adult in nest, incubating

21-May-93: No adults and nest empty. Failed? Fresh prey remains on fallen tree.

04-Jun-93: 0700: Confirmed failure of nest. Lots of whitewash still under tree.

#### 1994

12-May-94: 1425-1525: Walk-in to nest #6, appears inactive. No sight or sound of goshawk. Blow-down in area has increased. Searched a little in the area of this nest but not much more.

17-Jun-94: 0900-1500: Calling stations in area along rd# 805 to SE and around to W side of stand. No response but good GRJA mimics in stand. RTHA near nest in the clear-cut upslope from nest. At the northern most clear-cut, I saw what I thought was a goshawk flying low over hill top coming from the west. Will drive around to main rd#1619 and search west into the meadow area. Did a few calls there, but no responses.

20-Jul-94: 1200: Found new nest while doing veg data collection. 2 fledglings in nest area, already flying. Alarm and begging calls, no adults present. Nest #12 is quite a ways from #6, but about the same level on the slope. A large PSME, dying, with mistletoe clumps.

#### 1995

25 Apr: In to check on nests- have to walk in, road snow bound. Both #6 and #12 are unused- no sight/sound of goshawk. RTHA flew over me as I was walking in.

27 May: In for first search. Found new nest area but not the nest. Female was vocal and aggressive that responded to my second calling station which was near last year's nest #12. Could not find the nest at this time, but I hung green/black flagging all around where she was most aggressive and stooping. This area is very near #12 but down slope, toward the stream. To get in from the road #805, go ~100m past the old large pile of PSME logs from old cut, and head uphill into stand. There are seedling PIPO growing by the road and follow game trail up to stand of LAOC. I suspect the nest is one of the clumps in these LAOC. She stayed perched and called by these trees and stooped me when I walked through this stand. I had kept her off the nest for about 30-40 min. while searching, so I left to come back when the chicks will make the nest more noticeable. Large female with no bands. Again, I walked right nest here on my first visit to check #12, therefore early disturbance of this kind or stand entry does not seem to faze them. I walked near the Vance and Pearson like this on first visit also.

19 June: Out with Ted (*Ted Fremd*) to search and find nest. Got a good long recording of female with no bands. Two? chicks in nest but can't see into nest at all. Only saw backs with a grey down on them, assume them to be ~ 14-17 days. There is lots of wh/wa on the ground. It is one of the clumps in the LAOC! Recording her was mostly shooting up at her in the tops of trees ~60-100m away and her flying. The close calls are when she stooped us. It has cleared today, at about 50 degrees and no rain while we were at the nest.

30 June: In for second check and recording. One fledgling near nest @ 40+ days. Recorded juvenile alarm calls and beg calls. Collected pellets and was waiting around to see if I could hear any other juveniles. Female flew into stand with a small rodent in talons- looked like a juvenile ground squirrel. She stooped me and I recorded her. Never did hear any other juvenile and the one I saw never made another sound. She was only about 30-40m from me as I recorder her. When she first flew in, she was only about 10-15m from me. Will have to say just one fledgling successful here because that's all I saw- never could see into the nest well at any time.

17 July: In to do measurements of tree and stand. GPS'd all nest trees. While in there no sight/sound of goshawk, but when writing notes back at truck I heard a juvenile call.

## 1996

30 Apr: In to do initial search. It is drier this year, at least with road conditions. I could not drive this road last year at this time due to mud and snow. The ground is drier than last year- perhaps the weather is also dry and warmer than last year. Walked by all the nest trees and all appear unused. No sight/sound of goshawk. Think #6 is gone, found LAOC I think but the tag on tree - the old plastic ones we first used- are gone.

29 May: In to do first search with the caller. Started calling stations in area of last year's nest, and was working my way to the NW. When I got in the area of #6 (the original nest), female came out calling from the west of this tree site. This is a shallow bowl without many trees. I did not find the nest after 1/2 hour of searching but she was aggressively stooping me when I was at the WSW side of bowl. I marked the area with flagging to come back to. To get there- start at trail marker for original site, a good game trail now and walkup 30 paces to a Y-junction. Take the left track and walk about 130 paces into bowl follow flagging. I still do not see the original nest structure, and if it is like last year, the nest is cryptic and hard to see now. Female has fluffy tail coverts - no bands- stooped aggressively and her call was raspy. It has a grating-raspy edge to it and I will have to compare it with last year's recording. If I remember correctly, last year's goshawk had a very bell-like quality. I'll have to assume that she is early, like Starr, with her behavior and check on her so not to miss the fledglings this time. There appear to be 4 nest structures here that have been used since '92.

13 June: In to find nest and check. I was wrong, the nest is the original one #6 in the LAOC. I was mis-a-lined when I first came in this year. Could only see 2 chicks in nest @ 24-26 days. Female was calling and stooping the whole time. Got good recordings of her. The male did come in also, and she gave beg calls to him. She is still begging as I walk out and am at the truck. Tried to record a few of the male calls, but these are not very good.

27 June: 2 Fledglings - 1 branched by nest @ 38-40 days and 1 already flying. Female come out calling right off the bat. The male was perched in nest tree and didn't fly or call until I was right near the tree. I only saw the other fledgling because it called briefly and then flew off in the stand. Both adults are aggressive and vocal. They started beg calling as I walked out and I can still hear them begging when at the truck.

## 1997

29 Apr: Road into WWS still way too muddy and with huge ruts. Will have to check nests later.

8 May: Walking into stand, road is still muddy and almost washed out near top. Nest #95 is occupied. Walked the stand for ~ 1 hour, starting by #6 working toward the #12 nest then down to #95. Female is on nest incubating, lots of down on rim. Other nests are still up and in good shape. I have put a burnt log on rock by stream just past the big log deck on the road as a marker of how to come into nest this year. Green/black flagging to mark trail to nest, have to go by it uphill to see into nest.

5 July: In for fledgling check. 2 in nest @ 32-34 days. Female called at me as I got out of the truck on the road. She has a real raspy voice (like last year's?? same individual??). She flew around but did not stoop me, just called.

## 1998

10 May: In for initial check. Road bad again, have to walk in. Searched around all nests, and all 3 nests unused. No sight/sound of goshawk.

11 June: In for second search and using caller. Territory is active but couldn't find nest. I got a brief response to caller in the flat area between #95 and #12. I searched this area, sat awhile and listened, but did not see her again. No other response to caller from then on. GRJA mimic is good though, but will have to return in July to re-check.

5 July: Tried again - territory active but no goshawk found. Called stations in area that I got a response in before, but no sight/sound of goshawk. I guess I picked up a hunting male goshawk or a non-breeder. (*Note: this was the first year that Whitewater West was used- or at least found by us. These territories are real close, and I still believe these could be alternates for each other.*)

## 1999

13 May: In for initial check. All nests still up but unused. I GPS'd routes and all trees.

*Never went back in this year - because Whitewater West was active and being used.*

## 2000

23 May: In for first check and will search and call the stand. Road was good this year, have driven all the way in. No goshawk here, but nest #6 appears to be taken by a RTHA. As I walked up to nest, RTHA was perched and gave one warning call - circled over me watching, but that was it. Nest has down on rim, but chicks too young couldn't see any heads or bodies. I walked around tree for some time and even gave one set of calls - no response, didn't even see the RTHA again. Called stand as walking through to check other nests - no sight/sound of goshawk. So this is RTHA territory this year. If I have time I will come back in June when chicks older to see for certain - but if RTHA is only raptor I have seen here, I doubt seriously if a goshawk is in this stand.

*(Whitewater West was being used this year again)*

## 2001

16 May: In for initial search. Unoccupied- a RTHA is using the area, but not in any of the nests. Adult RTHA buzzed us (*Ted Fremd*) as we walked into nest#6, but that nest is unused. Nest #12 is gone now, a lot of down dead-fall in this immediate area. Nest#95 is half gone. No new structures seen - no sight/sound of goshawk. This total area, and that between WWS(west), would have to be systematically re-called to possibly find them again.

## 2002

7 MAY: In for initial nest check. A RTHA is in N6 incubating. All other nests are gone now and no new ones found. Walked the stand and no sight/sound of goshawk .

*Did not visit/check again this year.*

## 2003

29 MAY: In for initial nest check. I have not been in here earlier because I will combine this search with the 2<sup>nd</sup> one for WSW. I have track "29MAY03 WWSW" of called search around and between these two territories. (SEE notes on WSW also). RTHA is in the area of N6 again. Adults was calling at me and I could hear a beg call also, but not sure which nest she used. As walked just past this N6 area, a SSHA pair came out and circled the RTHA to harass them. So they have a nest in this area also. Another discovery is a old nest tree marked with a wildlife sign with "A643-0075" on it. This is at end of draw down by Kirk Springs and I marked it as "7-X". This was a Burns district sign and they discovered it I don't know how long ago. It is a large PIPO right along the roadway and nest is about gone now. It is in a nice little meadow area with other large PIPO on this now closed road. It probably was found during a logging operation and only this little bit around the tree was saved, for the area around here is pretty well logged. I have been making notes in the GPS about the trees as being, dead, live, large, small.

## 2004

3 MAY: In for initial nest check. Walked in along the road, muddy and rutted for car. All nests are unused and no sight/sound of goshawk. Thought I heard a one note RTHA call, but did not get any sign while in the stand. Lots more dead and down trees in here now.

22 JUN: In for second called search. RTHA is occupying this again. I called a few times and then got a beg call from the RTHA chick. One is still in the nest and I heard one off in the forest already fledged. No adults seen or heard. This is marked as "RTHA



04” and is in a PSME with a mistletoe clump at the top. This is near to N6 and also in the same area that I got a RTHA response last year when I couldn’t find the nest.

#### **2005**

*Did not visit this territory this year. (See Whitewater Springs West Territory)*

#### **2006**

*Did not visit this territory this year. (See Whitewater Springs West Territory)*

#### **2007**

9 MAY: Could drive only half way down road to territory –will walk rest of way. Unused-#6 is still in good shape, all other nests gone. No sight or sound of goshawk nor of RTHA. No new signs at all of activity. T-storm coming in over ridge- hear thunder.

*Did not visit/check again this year.*

#### **2008, 2009, and 2010**

*Did not visit this territory these years.*

#### **2011**

23 JUN: Have to walk in about 1 mile to measure trees. Well-what an experience- hard walking in here now. The road past nest stand has been decommissioned and blocked off as of 2007 as the sign said. The deadfall all along rd#043 on walk in has pretty much closed this road off as well. This area is reverting back to a natural state all though with lots of down and dead fall. The stream is channeling the road in and most of it will just be part of the streambed soon. Only #6 nest is up and the other 2 area of #12 and 95 are down, lots of die off here and both trees are on the ground. As walking out from #95 heard good mimics thus goshawk are probably still in this area but moved. It will be a bitch to come in and find them in the future, but I believe this area will be viable in years to come.

## **Burntcabin Route**

**Boundary Scotty (BSC)**  
**Burntcabin Creek (BCC)**  
**Burntcabin Creek South (BCS)**  
**Damon (DAM)**  
**East Scotty Creek (ESC)**  
**Fisk Gulch (FSK)**  
**Little Scotty Creek (LSC)**  
**Rail Creek Butte (RCB)**  
**Road 651 (RD651)**

## BOUNDARY SCOTTY

BSC <sup>18</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	28	6/15/93	N	S	2	
1994	54	6/20/94	N	S	2	
1995	71	5/24/95	N	S	3	
1996	54	5/2/96	Y	S	2	
1997	71	5/3/97	Y	S	2	
1998	54	5/9/98	Y	S	2	
1999	132	6/9/99	N	S	3	
2000		4/19/00		UNO		
2001		5/13/01		UNO		
2002		5/10/02		UNO		
2003		5/7/03		UNO		
2004		5/4/04		UNO		
2005		5/12/05		UNO		
2006		5/31/06		UNO		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

FS timber cruisers first found this while marking a cutting unit included in the Scotty Creek planning area in 1993. The units here were traded out of the timber sale and a PFA was established in this area at that time. The forest structure here is not what I would consider a “more typical habitat for goshawk” as are other places on the Malheur. It is dominated by thick stands of small diameter fir trees on rather open slopes between the nest sites. This draw runs in a NNE direction out into the more open sagebrush meadows on the border of the forest boundary. As with most other places on this forest, there have been many timber sales in this area that surround this stand. There is evidence of deterioration of the dense fir stands, and I suspect that some thinning by the FS will ensue within this draw in the future.



Photo to left: Nest tree #54 in center with Kutya in lower right.



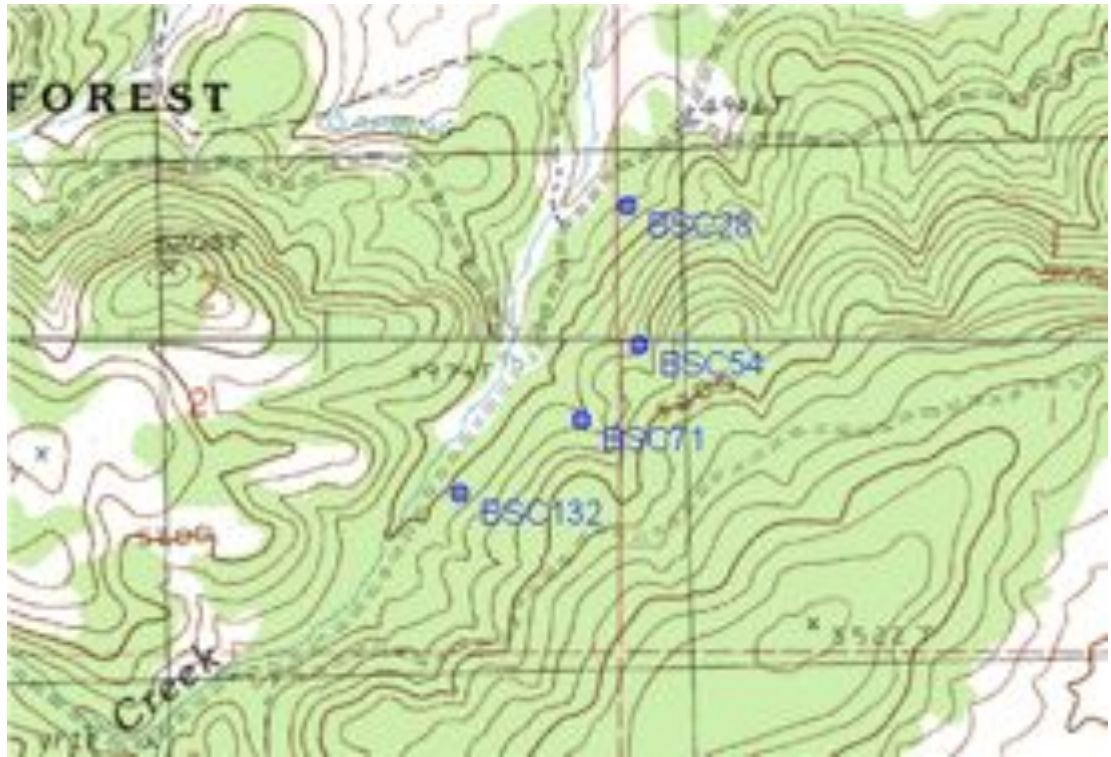
Both photos are of Nest tree#71.  
Above is close up of nest tree  
(fir left of center)  
Below is a broader view of area.

The area was continually used by goshawk for the first 7 years of monitoring but then was apparently abandoned. Even with extensive searches around this cluster, no goshawk were found nesting near here after these first years. Observations like this lead one to speculate that perhaps the “familial recognition” had died away. This could result from one of the goshawk adults (primarily the female) having died or abandoned this area; or, that the genetically related group and offspring that were raised here died or dispersed and the “memory” of this site was gone. The females’ behavior through these years here was strikingly similar thus leading to the inference of this being the same individual (with new voice recognition software in the future, it should be possible to determine if this was in fact the same individual female). One could also speculate that the prey resources had been depleted and or altered in some fashion that made this territory a less suitable habitat for breeding. This pattern of many years continual usage of areas then abandonment is reminiscent of “fallow field” methods: in that farmers will let an area of land rest and replenish after much use. For goshawks, this might be a method of adjusting to the prey

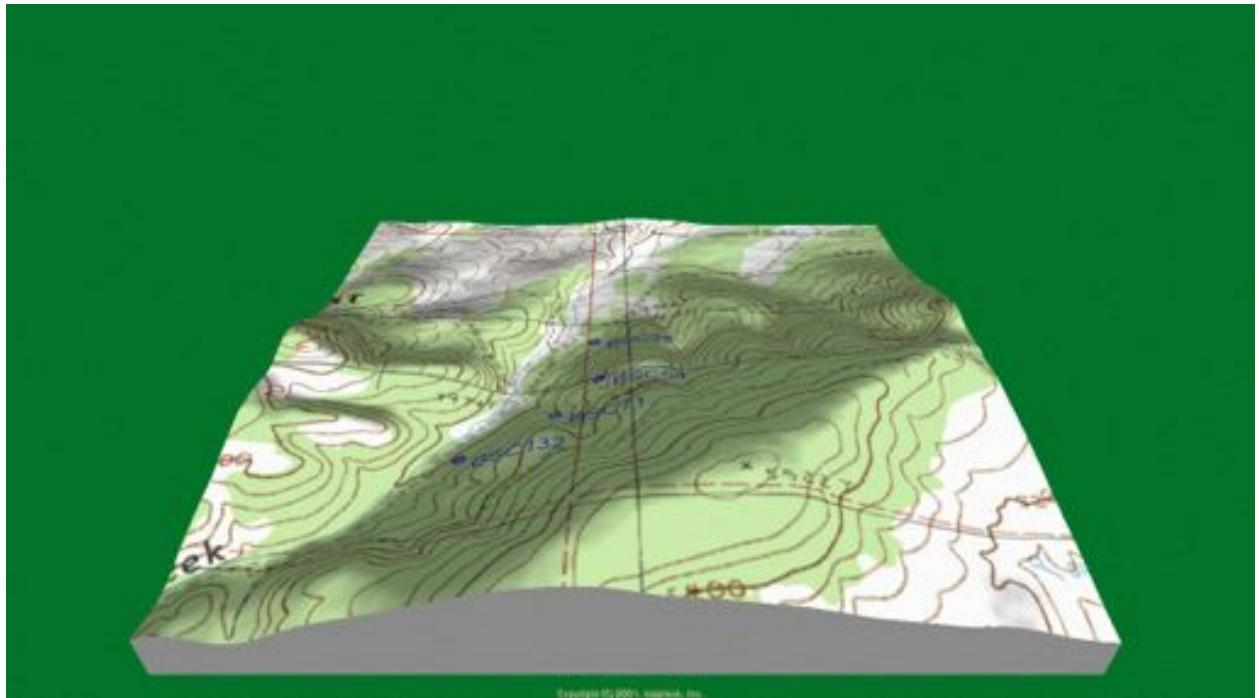
base as it recovers and/or shifts temporally and spatially. One could envision ways to test this hypothesis although it would take decades of coordinated efforts which are unrealistic in the near future.







*North up*



BOUNDARY SCOTTY

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BOUNDARY SCOTTY -28	NO TAG *	4965	PSME	16	S	32	214	6 to NW
BOUNDARY SCOTTY -54	TAG	5107	PSME	10	S	35	240	20 to NW
BOUNDARY SCOTTY -71	TAG	5088	PSME	13	300	25	244	18 to N
BOUNDARY SCOTTY -132	TAG	5031	PSME	14	218	25	210	16 to NW

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
28		A	I	I	I	I	X			
54			A	I	A	I	A	I	I	I
71				A	I	A	I	I	I	I
132								A	I	P

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
28					X	DNC	DNC	DNC	DNC	X
54	I	I	I	P	X					X
71	P	P	X		X					X
132	X		X		X					X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 421 acres according to FS records in 2010. In '93, 31 ac at nest site #28 and 420 ac (with 251 ac in high canopy closure) established

### Recordings

In 1995- Female adult vocalizations *boundary scotty creek 95Jul1.mp3 and boundary scotty creek 95 Jul5.mp3 and boundary scotty creek 95 Jun17.mp3*

In 1996- Female adult vocalizations *boundary scotty creek 96 Jul4.mp3 and boundary scotty creek 96 Jun25.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BOUNDARY SCOTTY

#### 1993

15-Jun-93: 1 adult female very aggressive. Nest #28 found by timber markers.

03-Jul-93: 1140-1150: 2 adults present and 2 Nestlings at 36-38 days old

17-Aug-93: Nest data collection. 1 young heard in distance

#### 1994

10-May-94: 1500: Walk-in to nest #28. No signs of goshawk and nest appears inactive. Found a dead GHO nestling on ground about 10 yds from nest tree. Saw a goshawk flying down rd#274 after turning off of rd 3780 on way to nest area. Searched at the head of drainage a bit but no further sight.

03-Jun-94: 1130-1641: Calling stations in area. Goshawk respond from nest #28 area. Re-searched stand and surrounding area- nest still inactive. Had 1 adult kek at station # 54, followed it down drainage to fence line into sagebrush, but no further sign of bird. Called stations along rd#269 to #663 to #665, and all along the rd#274. Found RTH nest off road #663 that is along fence line of FS boundary - 1 adult very aggressive and one fledgling still in nest, but ready to go.

20-Jun-94: New nest (#54) found by Sonya Daw doing veg plots around nest stand. Hears & sees goshawk flying and follows it. 2 nestlings in nest @ 17-19 days old. 1 adult defensive. Nest is in dense fir stand SSE of #28- way upslope. Same type of stand as old nest, blue-lined trees. I had used caller around this nest when I was in there! Even Sonya did not get a response from adult when she walked right by the nest at first.

05-Jul-94: 1259-1323: Fledgling check- 2 standing in nest 1@ 30-32 days and 1@ 32-34 days old. No adults in area while we were there.

#### 1995

27 APR: Had to walk over 1 mi. into drainage due to snow still blocking road. Both nests appear unoccupied. Was in the area about 30 - 40 min, but no sight or sound of goshawk. But, as walking out, a GRJA gave a good mimic call, which is a good indication that goshawk are probably there.

**PFA:** In '93, 31 ac at nest site #28 and 420 ac (with 251 ac in high CC) established.

24 MAY: In for second search and found new nest site. It is in the drainage S right at the junction of rd#274 and #269. I was calling at top of ridge NE of this drainage and heard a beg call. At first it sounded like a good mimic with a chirp in it, but when I got closer female alarm called and stooped when I got near nest. Brood patch well developed but I could not see into nest. Female was off the nest the whole time and she has no bands. New nest is about 200m S of nest #54.

17JUN: In for a recording of goshawk. The female is very aggressive – she has no bands. She came at me before I was even in sight of the tree and stooped several times. She never went to the nest. 2-3 chicks in nest @ 9-12 days old, much younger than other goshawk I have visited this year. On recording, other than when she came close in her stoops, she was perched 30-40 feet up in trees and I was shooting up at her. The closest perch was about 15 feet away. The weather is clearing but periodic ra in still.

1 JUL: In for 2<sup>nd</sup> check and recording. 3 chicks in nest – 1 much younger @ 24-26 days and 2 @ 28-30d. Female called as I was walking in and I got 2<sup>nd</sup> set of recordings of her alarm call. She did not stoop this time and stayed far away in top of trees. Most of the time, she was >100 ft away. I did not collect pellets at this time, will return later.

5 JUL: In for nest check. Female more aggressive this time. Got 3<sup>rd</sup> recording of her this time. 3 chicks still in nest – 2@ 32-34 days and one younger than this. She was very agitated, so I left without collecting pellets.



18 JUL: In to do measurements and GPS all the nest trees. The youngest fledgling is still perched by the nest and did not make any noise at all. Did not see or hear any other birds.

## 1996

2 MAY: in to do first nest check. Nest # 54 is Occup. Female on nest incubating, not moving, calm and watching. As I was walking to nest 54, I “knew” she was there and thought that going to the OP above nest might be too close (*It proves not to be in subsequent years!*). This was my intuition again of feeling the goshawk, but my logical mind wants to explain it away.

1 JUNE: first nest check. She is tight on nest, did not flush, probably still on eggs or very young chick. Male was perched in stand and flew off silently when I walked in. Did not get any recordings. Marked the small mahogany stand that looks right into nest, opposite a large PSME and above the slash pile.

25 JUN: In for nest check. 2 chicks @ 26-28 days. (very short growth on crown pin feathers, still downy for most part). Female very aggressive with close stoops! Got first recording of her and she has no bands. She was perched in stand by the nest, but didn't come out until I was very close.

4 JUL: 2 fledglings @ 32-34 days. Female still aggressive and stooping – got 2<sup>nd</sup> recording of her.

## 1997

3 MAY: 1330 As I got out of car, she gave a beg call from nest. Walked up to look at nest, and she is on nest incubating and she was silent watching me the whole time. Lots more down on this nest. She appears to be one of the early nesters this year.

6 JULY: In to do nest check. SUCC with 2 in nest @ 36-38 days. FE adult present calling and stooping.

## 1998

9 MAY: Initial check. – has stopped raining and snowing. Nest #54 is occupied. Female incubating, silent and watching. She did not flush even with Jade (*German Shepherd dog*) running by.

17 JUN: In for check. Success with 2 chicks in nest- @ about 14-17 days. Female flew out and called at first but then fell silent.

4 JUL: 2 Fledglings and one already branched and 1 @ 38-40 days. Female was on the nest at first, but flushed and started calling and stooping real close. Fierce! She has no bands.

## 1999

16 MAY: In for first check. Snowbound road again and will have to walk ½-1 mi in. All nests unused, 2 still up and good, but N#28 is gone. I ran a track on GPS and re-marked all nests.

9 JUN: In to do 2<sup>nd</sup> search and calling. A tree is down on the road at the creek crossing driving in, so again will have to walk in a ways. Called stations along this road going to the stand. Found new nest and it is occupied. Did not find this in response to the caller, only a GRJA mimic responded – not the goshawk! It is S again of other nests along the old skid trail that runs through this stand paralleling the road. New nest is on the down slope side, toward the road in a med. size PSME. I stop calling and was walking my “hunch” that if they were here it would be along this skid trail. Right then I came to the opening where the nest was, and felt this intensity – turned and looked directly at her. She was poised on the nest edge, and if I had kept walking she probably would have stayed put. But, I stopped to look into the nest and she stooped. 2 chicks @ about 14 days or less – possibly 3. She flew and called and finally the male came into stand. He “guk” called once and that’s all I saw of him. Had seen evidence of perching posts while walking through stand, so had a good feeling I would find them.

6 JUL: 3 older chicks in nest.- 1 @ 36-38 days, and 2 @ 34-36 d. GPS'd tree and when at tree the female finally stooped and called – was active the rest of time while I was there.

## 2000

19 APR: In for 1<sup>st</sup> check. Got stopped on the road at creek crossing driving in with a huge snow drift, so had to walk in again. Checked all three nest still up and all unused. Searched the area of #28 and still no sight/sound of goshawk.

14 JUN: In for 2<sup>nd</sup> search and calling area. I walked and searched the stand down past rd#132 and main rd junction. Re-GPS'd all the trees again. No sight/sound of goshawk, I did get a response from a RTH at the drainage near the junction of roads.

## 2001

13 MAY: -In for first check. Checked all nests and walked the line down the stand- no sight/sound of goshawk. I checked my notes from last year – I did call and do 2<sup>nd</sup> search in 2<sup>nd</sup> week of June and found nothing. So , this and ESC have been unoccupied for 2 years now.

*Did not visit/check again this year.*

## 2002

10 MAY: In for initial nest check. Way cool- watched a black bear and her 2 cubs play here. I was with Jade (*German Shepherd dog*) and started checking down by N28 (nest gone, no goshawk ). I was downwind from her so she didn't see me at first. I then saw the 2 large cubs, last year's perhaps?, rolling around and playing together. Momma bear finally sensed me and turned and moved back uphill. I went back to truck to move it around them, I thought, and go check on N54. As I was walking uphill to nest stand about where I could see down to the nest, I heard a bunch of sticks breaking, and then I saw a cub climbing a tree right next to the nest tree, or it could have been the nest tree. Both cubs had climbed the tree and were clinging onto the trunk looking scared. So the cubs had been treed (by MOM I guess) right where I needed to go. I couldn't see where she was, so didn't want to risk getting any closer to the tree. Left them to go check on N71 which is unused and not in good shape now. Will have to come back later. Spot checked N132 and it is gone now.

22 MAY: In for second search. No dog or bears this time. N 54 is still good but unused. I searched the stands and walked N past the original nest along the 2 track further where there is some good habitat. No sight/sound of goshawk . I will try to get back to call in this direction later.

3 JUN: In for called search. Called area and N toward Bear Valley track marked "BSC 6-3-02". No sight/sound of goshawk . I got a RTHA to fly by me once though.

## 2003

7 MAY: In for initial nest check. Walked the stand between and around the nest sites, all unused. N54 is the only one in good shape, N71 is partially gone, and other all gone. No sight/sound of goshawk.

10 JUN: In for second called search. Had camped overnight here to get up early in am to search. Called a long pattern from here up between Damon and around. Track = 10-jun-03 BSC. No sight/sound of goshawk at all. I called the good habitats left in some parts of the draws that run between BSC and DAM. I called and circled the good stand SE of DAM#35. Picked up some ravens on this side of Dam again. Nothing picked up in these territories.

## 2004

4 MAY: In for initial nest check. Large PIPO is down across rd 274 at creek crossing, have to walk in about 1 mile. All but one nest is gone now. Walked stand between and around nest sites but no sight/sound of goshawk. A RTHA nest is right along road close to where I parked and has a nest high at top of PIPO that looks like a mistletoe clump. She flushed both times I walked by so must have chicks about 1 week old?

18 JUN: In for second called search. PIPO still in road so again have to walk in. Called stand and surround immediately near this but no sight/sound of goshawk . The RTHA was calling and 1 chick is still in nest. I am going to drive around to access the road that comes in from the W of stand to see if any good habitat is along this way. Not much. Looked at some of the draws but nothing seen. Territory Unoccupied this year.

## 2005

12 MAY: In for first check. Unused and only one nest is up, but won't be for long. No new structures seen. No sight/sound of goshawk. This is now a long time that no goshawk have been found here. Last used in 1999- so 6 years vacant.

## 2006

31 MAY: In for first check. Will call a transect along a line through stand, but all nests are gone. Not too hopeful for this area- it has been abandoned for 6 or more years now. Unoccupied- no nests left at all- No sight/sound of goshawk- Called all along stand between nest sites, no response.

## 2007

*Did not visit/check again this year.*

**2008**

4 JUN: NOTE: When driving along road 3780 at junction with the road leading down toward BSC- saw a goshawk flying. This was one of only 3 goshawk seen this year.

**2009 and 2010**

*Did not check this territory these years.*

**2011**

15 July: Into measure but no sight or sound of goshawk while there. The habitat seems remarkably the same as I remember, there has not been as much of a breakdown in the small dbh thickets in here as I would have expected in the last 5 years.

## BURNTCABIN CREEK

BCC <sup>9</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	09	8/13/92	N	S	2	
1993	19	5/10/93	Y	OCC/F?		There were 2 nestlings that disappeared- see notes
1994	19	5/4/94		Usurped		GHOW
1995		4/27/95		UNO		GHOW and RTHA in area of #9
1996	93	5/15/96	Y	S	3	RTHA using area of #9
1997	194?	5/3/97		A		GHOW in nest #93?
1998		5/9/98		UNO		RTHA using area of #9
1999	93	5/19/99	Y	S	3	RTHA using area of #9
2000	145	5/24/00	Y	S	3	
2001		5/13/01		UNO		
2002	145	5/10/02	Y	S	2	
2003		5/9/03		UNO		
2004		5/4/04		UNO		
2005	93	5/3/05	Y	S/F		
2006		5/30/06		UNO		
2007	93	5/15/07	Y	S/F		
2008				DNC		
2009	93	6/4/09	Y	S/F		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

In 1983, a historical nest was marked at the springs directly to the north of where the first located nest (#9) was rediscovered. In 1992, this whole area of the forest was undergoing timber cutting planning and it became quite a fight to get these stands protected after nesting goshawk were known to be there. In the long run, the acreage around nest #9 and 19 was renegotiated out of the particular sale; yet despite these efforts both nest sites were severely compromised in the 1993 logging activity. Nest #9, was exposed due to proximity to the main road, and a major scoured-out log landing was placed directly across from this tree (as well as a large PIPO next to the nest tree that was illegally felled). In this year, the goshawk had moved their nest to #19 away from this main road; but again unfortunately, logging activity started up during nesting season directly across from this tree causing the loss of fledglings. (See field notes for these years.)

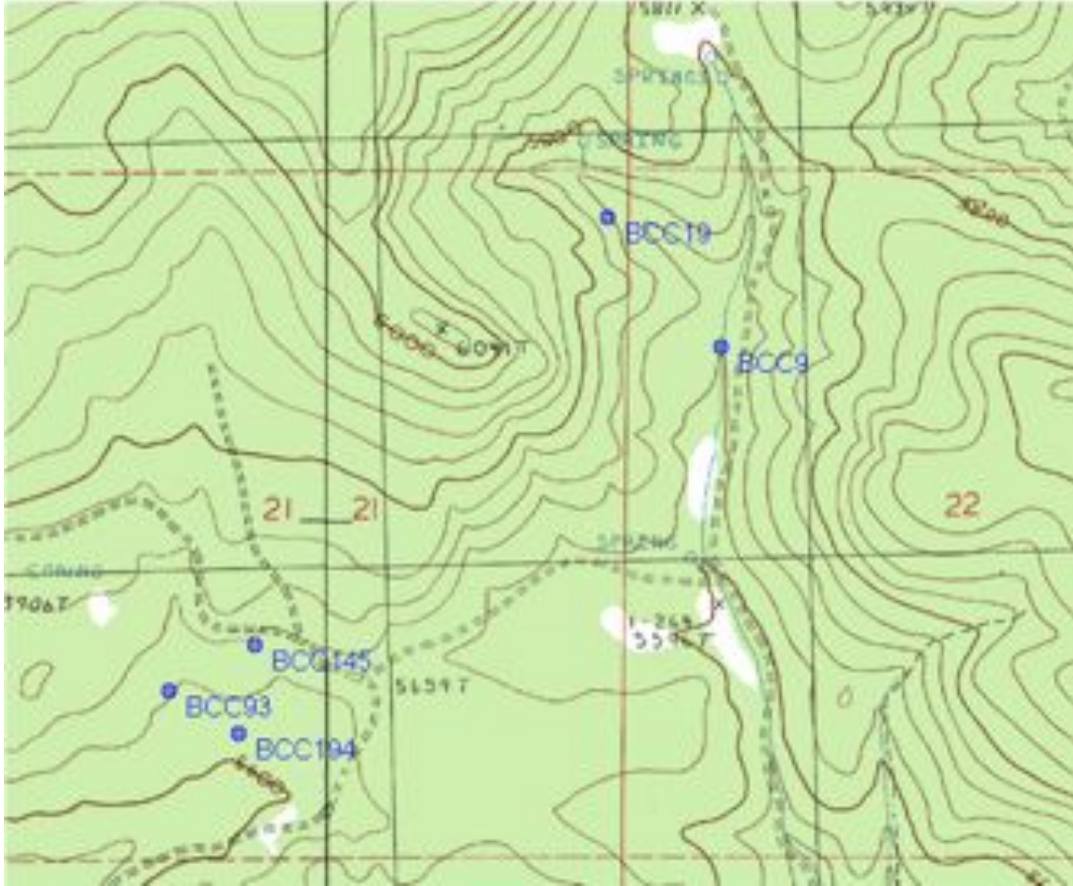
Photo to right: View of Nest tree #9 as of 2011, photo taken from across the road in the log landing.



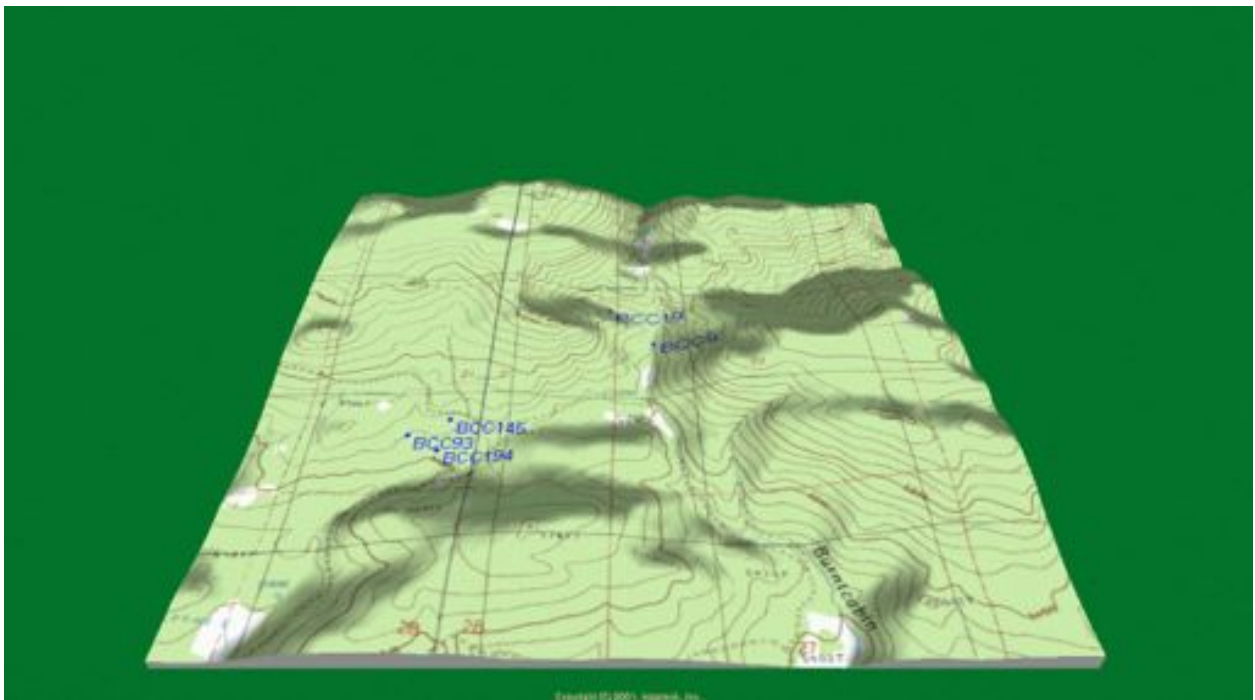
During the ensuing years, this stand became more used by RTHA and GHOW than goshawk, which I discovered had moved their nesting site less than one mile to the southwest (nest stand of #93 and #145). Both nest stands were a classic example of the large diameter old PIPO scattered throughout and around meadow areas. The understory is not as dense as in other places with small thickets of fir. In fact, the fir component is generally not as prevalent in this area, and the secondary story consists mostly of multi-aged PIPO. The forest here is reminiscent of the historical pictures of the eastern ponderosa forests in the last century.



View of Nest tree #19 as of 2011, taken from the road-gravel pit that was active during the 1993 timber cutting.



North up



BURNTCABIN CREEK



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BURNTCABIN CREEK -09	TAG	5643	PIPO	32	E	30	350	10 to W
BURNTCABIN CREEK -19	TAG	5724	LAOC	33	SE	42	flat	flat
BURNTCABIN CREEK -93	TAG	5639	PIPO	28	150	70	228	12 to SE
BURNTCABIN CREEK -145	TAG	5670	PIPO	25	140	50	200	5 to SE
BURNTCABIN CREEK -194	NO TAG *	5612	PIPO	35 range	nd	nd	flat	flat

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
09	A	I	I	X						
19		A	U	I	I	X				
93					A	U	I	A	I	I
145									A	I
194						(A?)				X

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
09					X		DNC		DNC	X
19					X					X
93	I	X		R/A	I	A		A		I
145	A	I	X		X	X				X
194										X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 444 acres established probably for the stand around nests #9 and 19, but no data if acres were incorporated for the stand to the SW where nests #93 and 145 reside.

### Recordings

In 1996- Juvenile and some female adult vocalizations  
*burntcabin creek 96 Jul4.mp3*

### Trapping and Banding History

In 1993- Female adult: She was found at another territory (ESC) in 1994, 1995, 1996, and 1998 (see Figure #4).



## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BURNTCABIN CREEK

#### 1992

13-Aug-92: 1130: Heard juvenile wail while driving through area to check historical site. 1 juvenile seen; searched for nest but only found alternative nest. Historical nest #0021 from '83 is gone, but its location was to N of this new nest.

14-Aug-92: Followed 1 Fledgling to nest and heard another calling in area. Nest site data collection; while there, we think adult came in with prey- heard but did not see this exchange. Out with Cam today.

#### 1993

26-Apr-93: 0800-0900: Nest compromised due to logging in adjacent area. No activity at nest. A sale unit right across the road from nest tree had been cut with a large landing placed there. Also, a large PIPO that was next to nest tree and on the roadway had been cut, it was not in the sale! I wrote up an incident report to put in the goshawk file of this year, but I doubt little was ever done about it. Search conducted in May that established a pair of goshawk still in area using nest #0019. They had moved up the small drainage NW but still close to the road # 077 that also was used for logging.

10-May-93: 1600: 1 adult (female) incubating. Found nest 1/4 mi. from nest #0009. Observations conducted through last week of incubation until 5th week of nestling phase. Timber activity intervened and juveniles disappeared. This also was compromised by timber logging, the road adjacent to this new LAOC nest tree- a huge area was excavated out for timber activity. They didn't actually enter the stand the nest was in but it was too close, with direct line of sight to nest.

14-Jun-93: 0455: Trapping and banding successful; adult female caught and released by 0655.

#### 1994

04-May-94: 1300-1700: Stand watch at 2 OP sites- had to move because of rain storm. Watched areas above #0019 and #0009 nests- both areas appear unoccupied; No sight or sound of goshawk. Detailed stand watch notes on page 94-20 of field notebook.

24-May-94: 1300-1630: 2nd stand watch- 3.5 hrs. (detailed notes on page 94-31 to 94-32) OP site on ridge above nest. Had view into nest and there are 2 GHOW nestlings. No adult goshawk or GHOW seen or heard. Direct takeover of goshawk territory by GHOW.

07-Jun-94: 2 GHOW nestlings on branches, still downy. Called stations at #9 and #19 stand but no responses. The cut unit #12 goes all the way to the end of road#077 and has really opened up this side of the stand.

#### 1995

27 Apr: In for initial check. Both nests unused. Nest #9 is deteriorating and #19 looks unused, but did not walk down to the tree. Walked the drainage between 9 and 19, no sight/sound of goshawk. I did startle a pair of varied thrushes and walked right through their territory at corner of 3780 and rd #077 in amongst small fir clump.

23 May: In to do stand search starting at #19. Walked all around the nests and south into the DOG unit (see map). This territory is occupied by a RTHA and GHOW. The GHOW is in a mistletoe clump in a PSME about 250m south of nest #19 and about 250m west of nest#9 on a flat bench. The RTHA is also in a PSME mistletoe clump about 300m south of nest #9, right along rd 3780. Tree is between road and creek right on edge of meadow. I saw one adult owl calling and flying around nest, and saw 2 adult hawks calling and flying. No sight/sound of goshawk. Thought I heard a mimic to north this AM, so am going up drainage to check a few places. Walked the area around the spring to north (where the original nest of this territory was found years ago). It has been logged in here and to the east - no signs of goshawk.

22 June: Checked on the RTHA nest here. Female at nest still with 1-2 chicks, still downy heads with eye masks, but no evidence of feather eruptions.

5 July: A RTHA fledgling was still in the nest on this date.

## 1996

1 May: In for initial check. Nest #19 up but unused. Nest #9 is gone. The RTHA nest is unused. Searched this drainage and no sight/sound of goshawk. What happened here? Still good habitat, but maybe too many generations of trauma and failure put upon the goshawk here. (The logging that essentially took out #9, and then the road and logging that compromised #19) Maybe the "memory" of this place is lost, because no young have "seen" it for many years now. Will they ever come back?

15 May: In to do search using the caller. There is a RTHA nesting down by the junction of rd#488 and 3780. Spent 2 hours searching the 9-19 stand again. No goshawk. There was a partial clearing of clouds and rain for ~1.5 hours, but still overcast and wet today. Did not even get a response from the RTHA this am. Walked along rd #488 to west, still some good habitat along here. Went to call the area leading up to the "503 COHA" nest west of the BC drainage (see map). This looks like good habitat last year and decided to do some calling stations in here along the road. When I called a stations at the junction of rd 3502 and 503, I heard a response to the SW of me, but it could have been a mimic. Walked into the COHA nest and it looked unused. I searched and called down this drainage till I came to rd#488 again. There is a good drainage at this bend in the road where it crosses the stream. Called a station just west of junction with rd #047 and got a goshawk response. Adult goshawk (female) called back 2 times. She was perched watching me as I walked down into the drainage. She flew off low, downstream, and I only saw her once more flying back upstream. Searched and found a structure but it does not appear to be used. Marked it with flagging so I can come back. This is about 1 mile SW from nests #9 and 19. It is over the ridge, but the next major drainage with suitable habitat.

1 June: In to see if the nest I found is used. Yea! Female is on nest incubating, she did not flush or make a sound. I had to flag the tree and was walking around a lot to find a good OP. The nest is in a PIPO and it is way out on the end of a limb near top, hanging over a small opening. Very little wh/wa on rim, not much down even, but she is tight on eggs or very young chicks. She just gave a few beg calls. I have marked the way in from the Rd#488 starting at the large PSME (see map). I was worried that my calling her out in May, on a rainy day, may have harmed her, but she appears to be fine.

25 June: In for first nestling check. Two possibly 3 chicks in nest @ 30 days? (Pin feathers on head and flight feathers developed but still downy tracks on back and legs). Female was perched on branch above nest when I entered. She did not call at all, but flew down by me and perched elsewhere. I did not see her after this, very quiet non-aggressive bird. The OP uphill from nest is best, saw one chick preen, one move a wing, and possibly a third chick is there also.

4 July: Fledgling check - 3 chicks all standing on nest rim @ 36-38 days. Both adults in stand, but not vocal or aggressive. One came to check me out as I walked into stand, and another perched on snag watching. This one gave a few beg calls while I was there. Recorded one set of adult alarm calls and several juvenile alarm calls. Collected pellets at this time.

## 1997

3 May: In for initial check. Started at nest #19 - unused and almost gone now. #9 is completely gone. Nest #93 has GHOW incubating in the nest. So this territory appears unoccupied by goshawk.

15 May: In for first silent search of stand around #19 and 9. No new structures seen, no sight/sound of goshawk. No RTHA this year either here.

29 May: In to do second search around nest #93 and using caller. Curious! #93 does not have a GHOW in it now, there is no down on rim and it looks unused. GHOW failed this year or was run off by goshawk, perhaps. I got a response to caller right at nest #93. Adult goshawk flew off to the SE toward roads #047 and 048. I searched the stand over in this area, saw the goshawk 2 more times, and it circled back toward #93. Searched some more and back toward #93. Looked at the nest again and it still looks unused with no bird in it. Goshawk are active here but did not find the nest this year. (*Note: I found nest X (now 194) in this area to SE in the year 2000 and believe this was the nest used by these goshawk, but did not find it in the right year!*)

19 June: In for second search and calling. Started at Rd #048- called stations down 047 back to 048 and toward DOG unit. Nest 93 is still empty. This time I saw a goshawk circle a ways off to watch me, but no vocal response. Seems like the behavior of a male. Went and ran a few calls around the #19 nest, but no sight/sound of goshawk. Territory active this year, but did not find nest.

## 1998

9 May: In for initial check. Nests 9 and 19 are both gone now. Searched stand around here and no sight/sound of goshawk. Checked N#93, also unused and no sight/sound of goshawk.

13 June: In for search using the caller. Had started at BCS to call the total drainage. Called around meadow area of #9 and picked up a RTHA again, but not in the same nest as last time. Worked over to the #93 area. Called drainage around and to north up to rd#503 (see map). No sight/sound of goshawk.

*Did not visit/check again this year.*

## 1999

19 May: In for initial check. Was able to get into area through the snow banks from the south entry route. Checked 9-19 areas, nest gone and no new structures seen. Again, I was buzzed by a RTHA that is nesting somewhere in or near the meadow area. Went over to the #93 drainage. N93 is occupied with lots of down on rim. Could not see or find female but knew she was there, watching. Ted (*Ted Fremd*) was with me searching. I don't remember a year where there was this much snow and drifts on the road this late in May.

6 July: In for fledgling check. Three chicks still in nest @ 24-26 days. All still young, late nester this year. No sight/sound of any adults. All was quiet and all seemed healthy, GPS'd the site.

## 2000

25 Apr: In for initial check. Could drive in on road, but still some snow drifts. N93 is unused. Drove by #9 and 19 area but started raining hard, and nests are gone anyway, so will come back.

24 May: Out with Ted in camper to camp here. In for second search. Found new nest site right along road at Junction of 488 and 047. Can see nest clearly from road and a good OP site. I checked #93 first and then walked and called area here and to the SE. Found an old structure "X" that I GPS'd (*now #194*). Female is on nest incubating and did not response to the caller that I used about 100ft from her. She stayed tight on nest and just watched. I clearly passed this tree on my first visit in. Went to walk stand by 9 and 19 just in case, but no sight/sound of goshawk and no new structures.

28 June: Out with Sarah Herve. In for first nestling check. Three chicks in nest @ 14-17 days. This is much younger than the other nests we have visited so far- late nesters. No adults present. Sarah got some photos, which I have a blow up of, and she stayed watching at nest awhile to see if the adult would come in so she could photograph them - no luck.

9 July: Out with Matt Smith. 3 chicks still in nest - 2 @ 32-34 days and 1 @ 28-32 days. All looked well fed and healthy- even after yesterdays storm. No adults in evidence. Looked below nest for pellets, prey - chicks did not move much nor respond to us there.

## 2001

13 May: In for initial check. Nest #93 appears to be occupied. No adult is on the nest, but I can see a white downy top of a head. Down is on the rim. Is this a goshawk or GHOW? I can't tell. Will have to come back. I walked down the drainage and to the SE around nest#145 and around "X" which now is gone. This area is still good habitat.

29 May: Went in to watch nest#93. No activity seen while I watched with the scope. Old fluff on rim could be old GHOW - white with light brown bands. No wh/wa, or down, or feathers, or pellets under the nest either. So, it was a failure this year by owl or goshawk, or the down was from an older use of nest. So don't know what happened here this year.

*Did not visit/check again this year.*

## 2002

10 MAY: First check of N#9 and 19 stand- unused and no new structure seen – all nests are gone from this area now. Drove to #145 stand and female is on this nest incubating. I did not even have to get out of the car to see her.

26 JUN: In for first nest ck. 2 chicks @ 22-24 days. Younger than the other nests I checked today. Female was perched on branch next to nest and was silent and just watched me the whole time. She did not seem agitated at all.

4 JUL: Last check and 2 sleepy guys in nest. 1 @ 34-36 days and 1 @ 32-34 days. No adults in evidence.

## 2003

9 MAY: In for initial check. Checked N93 which is gone now and N145 that had a piece of down on rim from last year it appears. As I walked into stand of 93 I saw a large bird fly out through the trees but no good ID on it. It looked more owl shape

than goshawk. I did not see any other structures as I walked stand. I tried to drive up to check the other stand where 9 and 19 were but it was snow packed and could not get in. Both of these nests are gone anyway.

10 JUN: In for second called search. In for initial check at old N9 and N19 but will walk and call the stand. No sight/sound of goshawk nor any new structures seen. I was driving up road 3780, coming from the BSC side, at the top near the first nice meadow but before you get to the cattle guard, I saw a goshawk soaring along meadow. I stopped and called about 2 stations in here, but no response. I did get ravens to come in. In for second called search at N93 and 145 stand. No sight/sound of goshawk. No new structures seen either. All these are marked tracks in GPS.

## 2004

4 MAY: In for initial nest check. All nests are gone now. Drove around original nest stand to look at nest areas, but nothing new. Drove to the secondary stand to walk area between nest sites and the large PIPO stand. No sight/sound of goshawk nor any new structures seen.

3 JUN: Camped out in Burmtcabin route for a 3-4 day stay. In for second called search of N9 and 19 nest site. Spent 2 hrs calling and nothing so this side of territory unoccupied. Drove up road that runs parallel to this stand, see photo 2101-43, cuz it looks good. It is still open and a steep slope though, and surrounded by cuts. Did not do any search here. Hot day, took a break. Drove over to stand of N93 and 145. I am camped right in middle of stand along the little opening in road 047 just below the little spring. I listened for awhile then rode my bike down 047 around and back up 048 calling and listening. At camp site I thought I heard a beg or mimic call so searched this area. I circled the whole area but heard nothing again. Back at camper, I walked in a crisscross pattern the large PIPO stand to try to find any new nest. Nothing. Saved track on GPS. It seems Unoccupied but there is a real good GRJA mimic here and what I thought was a beg call. I will spend the night here and listen for early morning calls. Both of us, Jade (*German Shepherd dog*) and me, are real tired puppies, we need some rest.

4 JUN: Early AM heard 3 good kek calls. It must be this good mimic for it is coming from the same area of GRJA when I first arrived here yesterday. Can't find a nest in here. And if I am camping close to nest, I should have been stooped or watched by now. So will try to come back later.

*Did not visit/check again this year.*

## 2005

3 MAY: In for first check. Checked stands of #93 and 146 first. Occupied female on nest incubating. Wow, Nest #93 is rebuilt! TJF (*Ted Fremd*) saw tail feathers and lots of down on rim first. This is such a story-the nest was gone in 2003 and now it is rebuilt in same place exactly. This nest also was taken by GHOW in 1997 but then reused by goshawk again in 1999. So the thought that goshawk will not retake a nest used by GHOW is not altogether correct. Although this is technically not the same nest -this nest is a new rebuilt one in same spot even- out on the same limb, same direction. It had lots of down but as we walked around, it looks weakly built on one side. Oh well- it did last for years before. SO- there is something very attractive about this stand for nesting goshawk etc!

21 JUN: Out with TJF on his B-day. Nest check-well, successful to a point but they are all gone. Lots of white wash on ground, lots of down on nest rim, molted feathers on ground. Had seen female incubating, so they were sure here, but no info to say if successful or failed by predators or other means. Definitely occupied with assumed successful by signs here with early fledging.

## 2006

30 MAY: In for first check. Unoccupied-no new nests seen and only 1 up now. Just walked the area of nest #93 and 145. Did not check other area and not a real thorough search. So Unused really only.

*Did not visit/check again this year.*

## 2007

15 MAY: In for first check. Occupied in #93 amazing! She was standing on the nest watching me and did not flush. Had to take a nap, very tired today.

*Did not revisit this territory again this year due to contract with FS re: Thorn Fire Recon. Assumed that nest successful.*

## 2008

*Did not visit this territory this year. Due to limited field time and after seeing the dismal non occupancy of the more heavily used goshawk territories, I did not search the farther out territories.*

## **2009**

4 JUN: In for first check. Occupied in #93 again. Female incubating and had given beg call as we (*Ted Fremd*) were going into stand. Heavy T-storm just passed through and another one is imminent as I write this.

*Did not visit/check again this year.*

## **2010**

*Did not visit/check this year.*

## **2011**

13 July: Out with TJJ (*Ted Fremd*), Kutya (*English Shepherd dog*) camping in Bambi (*Airstream trailer*)- we are west of our usual spot in Burntcabin meadow because surprise! someone is already camping there, very unusual for this time of year. Walked and measured #93/145/194 area. Only #93 up now and no sight or sound of goshawk while there. #194 gps marker is in the stand area but nest tree not pinpointed. Drove by other nest stand of #9 and 19 next day to do dip and strike.

## BURNTCABIN SOUTH

BCS <sup>22</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	36	6/25/93	N	S	2	
1994		5/11/94		A		
1995		4/25/95		UNO		
1996		5/1/96		UNO		
1997		5/3/97		UNO		
1998		5/9/98		UNO		
1999		5/15/99		UNO		
2000		4/25/00		UNO		
2001		5/29/01		UNO		
2002	153	5/10/02	Y	S	3	
2003		5/9/03		UNO		
2004		5/4/04		UNO		
2005		5/3/05		UNO		
2006		5/30/06		UNO		
2007		5/15/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		
2011		7/14/11		A		In area of nest #195

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This stand is along the southern end of Burntcabin Creek before it empties into Camp Creek. Cutting units surround the parcel, but there is a large meadow to the north that retains a fringe of older structure forest. The habitat here has changed little in the years of monitoring.

The monitored usage here is one demonstration of many that territories may lay dormant for quite some time (in this case eight years), but if the stand and surrounding forest is maintained, goshawk will still use them to nest in the future. In many cases, the new nest will be built in almost the exactly same area of the stand, with similar characteristics (see 2002 notes). There are other examples from this study that the new nest will be reestablished in the same tree and located in the same position on that tree where an old nest once was (the old nest having been gone for years). This is compelling evidence to challenge forest service regulations that incorrectly assert that stands may be put back into the general management base for which cutting activities can be planned if a territory is not used in 5 years.

In 2004, I broadened my search pattern, moving further east of the nest stand. There is an extensive historical timber sale that covers much of this area except for a steep draw that also empties into Camp Creek. Here I found two good nests, both with goshawk characteristics (e.g., size of nest, height and location on tree) dispersed in an old growth PIPO stand. Only one of the nests has been marked with a number (#195) for I never personally observed any goshawk using these nests. But in 2011, while measuring trees, an adult goshawk was active in this draw. As

suspected, this is a heavily used alternative nest cluster (they probably were nesting here in the years that I had responses but could not find any used nests). I have kept these nest sites in the database, because in the future if anyone is doing research on goshawks again, this is a stand that should be included.



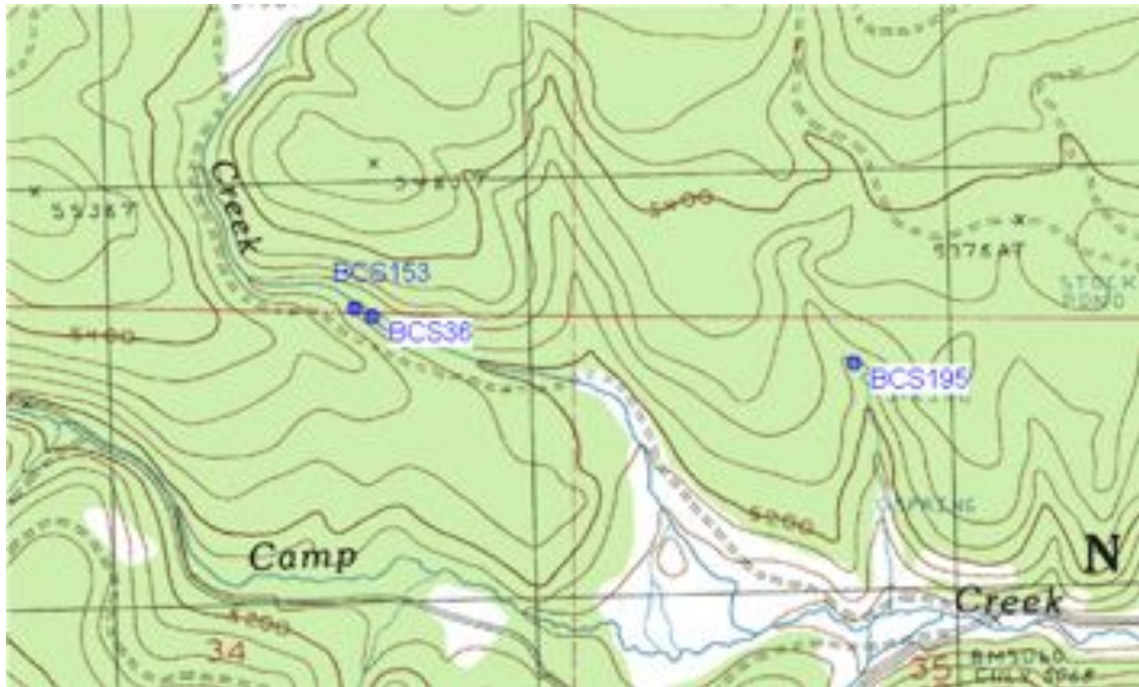
Photos are of nest area of #195:

To left is view of nest stand  
Below is close-up of nest tree

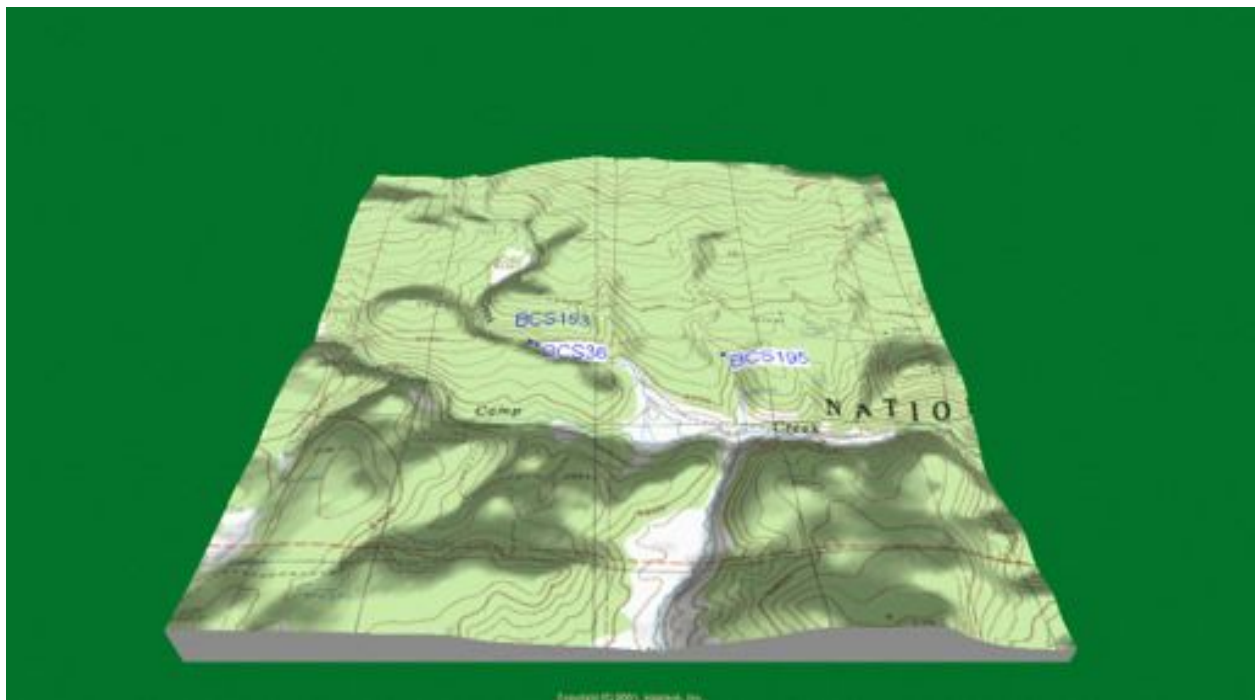
This is reminiscent of the habitat that surrounds nest area of #36 and #153







North up



BURNTCABIN SOUTH

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BURNTCABIN SOUTH –36	TAG	5259	PIPO	33	SE	79	308	10 to S
BURNTCABIN SOUTH –153	TAG	5256	PIPO	28	nd	nd	292	20 to N
BURNTCABIN SOUTH –195	TAG	5259	PIPO	38	180	40	290	10 to S

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
36		A	I	I	I	I	I	X		
153										
195										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
36			X		X	X	DNC	DNC	DNC	X
153	A	I	I	P	X	X				X
195			I	I						P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 419 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BURNTCABIN SOUTH

#### 1993

25-Jun-93: 1740-1830: 2 adults vocalizing and 2 Nestlings, 1 at 24-26 days and 1 at 19-22 days old. Nest is visible from road.

30-Jun-93: 1215-1230: 2 Nestlings preening. Blow-down tree was cut and dragged out of drainage just 75 m from nest tree.

03-Jul-93: 1245-1250: 1 nestling at 34-36 days and 1 at 36-38 days old.

17-Aug-93: 0800-1000: Nest data collection. 2 Fledglings heard

#### 1994

Territory occupied but could never find the nest. Got good response at nest site when calling stations, but nest not used. Searched again with Sonya Daw during nestling checks and went back in with group on 7/6/94, searched meadow stand S of road 620; and again with Sue (*member of Sonya's field crew from OSU*) on 7/7/94 to search N of road 620. Good habitat but did not find birds. GRJA mimics in area still.

11-May-94: 1045-1134: Walk-in to nest, nest appears inactive. Searched the drainage a little downstream, no sign or sound of goshawk

07-Jun-94: 0940-1300: Calling stations in area, called up drainage on road#656 to meadow to north then back down road#3780. At station across from nest, 1 adult kerked & perched in area. Nest still looks inactive, but goshawk flying and staying in area as I search stand. Must be occupied territory with this reaction, but no new nest found. Was stooped by RTHA in nest that is along road#3780 to north at edge of meadow.

23-Jun-94: 1100-1230: Nestling check and still inactive nest, no goshawk in area. Searched along rd# 656 to E (old stick nest up here on east slope) & N to good meadow area. Did a few calls up at top of road#620 where I had seen a goshawk? fly off to west into habitat above meadow- no responses. Sm. belly feather found at nest, looks like RTH. Occupied Territory but could not find a new nest. Possibly the defensive behavior was of a hunting male or non-breeder. (*Status is actually Active, not really Occupied*).

#### 1995

25 APR: Nest appears unoccupied, no sight or sound of goshawk. Was in the area less than 30 minutes. There is a snow block on the road up from here, so could not get into BCC.

31MAY: Broadcast call in drainage around #36. No sight or sound of goshawk here. Still need to call more of area though.

22 JUNE: Search and calling drainage to the E of N36, up road 656 to check old nest found up there by M. Penniger (*FS wildlife biologist at the time*). Called several stations up this and dropping over into the meadow area to N of nest, along Rd 3780. No sight/sound of goshawk. At top of ridge between this E draw and N36, I came into a very aggressive Hairy Woodpecker territory, male and female that was adjacent to a White-headed Woodpecker vocal adult. BCS is unused this year- moved.

I headed over to an area I saw goshawk in 1992, just to look at the habitat. This is between BCS and an historical (Crooked Creek to the SW) territory that is no longer viable it appears. I spent about 3 hrs on a wild goose chase in stand NE of junction of roads #195 and #192. I got a response on my first call- thought a mimic but then saw the goshawk fly away. By the behavior and the slow cadence, lower "croakier sound to alarm call - he was probably a hunting male. I kept getting feedback from him on ridge just W of road#192(129), then he would fly N into the stand I had just searched. I got a response from him also down in drainage along road#597. Never saw any structures and he never came very close - I would approach him and he would fly away. I walked over and did a few calls along Crooked Ck. down by nest #30 (historical nest). No sight/sound of goshawk. There must be a territory over here, but can't find it. (*Note: the Lost Cabin nest was found later in this season and I think I possibly had the male from this nest site responding here at this time.*)

## 1996

1 MAY: in to do first nest check. Nest is in good shape but unused. Limited search at this time up along the road- no goshawk. Walked up road to east, where M. Penniger (*FS wildlife biologist at the time*) found old nest structure and it is unused.

15 MAY: Spent 4 hr. calling stations all around the drainage and in PFA designated area. No sight or sound of goshawk at all. Called up drainage toward good meadow area and along the creek proper. Searched and called to the W and S of the nest area. There is a nice drainage toward the W, but got no response there. A lot of the area over here (along Camp Ck.) is logged. Have covered roughly ½ mile radius around area of the drainage, within most of the PFA area. Will call territory unocc.

## 1997

3 MAY: 1620 Checked on nest and it is unused. Still up and in good shape. Did not spend time in stand at this time.

29 MAY: 1230 Walked the stand of N36, rainy so did not use the caller. Nest unused and it is 1/2 gone. No goshawk seen or heard, no new structures. Walked up to meadow area and back down main road.

*Did not visit/check again this year.*

## 1998

9 MAY: In for first check. Nest still up but unused.

11 JUNE: Search and calling in stand and working N up drainage all along the Burntcabin Ck. area. Called stand of #36 and to N of the meadow along creek. No sight/sound of goshawk, but there were good GRJA mimics. Called from road#620 junction N and up to W into the DOG unit (S edge along what I call the Burntcabin meadows with the little grave). The grave this year has new set of flowers poinsettias this time. Lots of buttercups blooming in meadow now.

## 1999

15 MAY: In for first check. Nest #36 is gone and no other structures seen. Walked and searched briefly the stand here but nothing seen. This year there was also a snow block on road so could not get into BCC at this time.

*Did not visit/check again this year.*

## 2000

25 APR: In to check nest. Nest has been gone for some years now and did not see anything new. Very brief stop here, did not search much.

*Did not visit/check again this year.*

## 2001

29 MAY: Checked and searched the stand. Unoccupied. This is a case of how much we don't understand. This stand has remained unchanged since first found in 1993. This stand was used that year and I have not seen any goshawk in here since. It is not because of a disturbed forest structure! No activities have gone on in this or in adjacent areas in these 8 years. So why hasn't it ever been used again?

*Did not visit/check again this year.*

## 2002

10 MAY: In for first check. Unbelievable!! New nest is in a PIPO not 50 ft. from the original one that phenotypically looks identical to the original- same side and height on tree, out toward the end of the limb. Small nest with lots of down on rim. I had to walk under to GPS it and really didn't see the down till close up. I flagged 2 OPs just below the road. Hard to see into nest at this time, so not sure that female was on nest. WOW this was last used in 1993 – not used in 9 years. I have called in the years all around here and never picked up an alternative site. And now, they return after 9 years and build almost the same identical nest in the same spot! Go figure!

26 JUNE: In for nestling check. 3 chicks @ 28-30 days. All alert and plump, preening and walking around. An adult was in the stand for I saw the chicks keep checking out the adjacent tree, but I could not see them from my OP. Did not get any response from them at all.

4 JULY: Final check for this year. All 3 still at nest but 38+ days. 2 were hopping in and out of the nest on to the branch. Out with Ted (*Ted Fremd*), and we sat and watched their antics for about 30-40 minutes. All was peaceful. Did hear an adult beg call to N toward meadow area and thought she/he may show up, but they never did.

### **2003**

9 MAY: In for initial check. Searched the draw at the road closure #656, where years back a nest structure was found. Nest might have been used by RTHA at one time also, but no nest there now. Searched the nest stand at goshawk nest, last year's nest still good but unused. I re-GPSd the trees to get a better accurate reading. I thought I saw a goshawk soaring over the stand coming from NW to SE, not too high, but didn't circle or take notice of me. So again there is a goshawk somewhere around the meadow area, sigh.

10 JUN: In for second called search. Called stand and surround area, but did not have time to circumvent the meadow area as I have in years past. No sight/sound of goshawk. I was camping out so did this search late in the afternoon, cooler. But I am getting weary- haven't found any nesting birds in a long time now.

### **2004**

4 MAY: In for initial nest check. Parked by nest stand along road and had to take short nap, real tired. Walked around the nest sites, only one nest still up, no sight/sound of goshawk. Did not hear anything the whole time I was in area.

2 JUN: Out camping on Burntcabin Route for 3-4 days. See photo 601-42. Started walking into the spring area in the draw to the E of nest stand. Unbelievable! I found 2 new nest structures in this draw. It is a much better habitat than where the original nest was found. Marked nests as "BCS X 04 and 2X 04" on the track of "2 JUN 04 BCSX". Need to find a better way into this draw for coming in from the lower road is a long haul. This stand is just shy of the 1K circle from the original N36. Drove camper to landing at end of road that comes around meadow area to the top (N) of the N36 drainage. Will stay to listen for calls tonight. Jade (*German Shepherd dog*) and I are tired. (*Note: only one nest is marked as N# 195, other is down draw from this site*)

3 JUN: Started early in morning to search and call the N36 strand and surrounding area. See photo 601-42. Nothing seen or heard. Did have a good GRJA mimic right by my camp site in AM. Unoccupied territory after spending a night and day here searching, calling.

### **2005**

3 MAY: Walking into check the draw to east where the "X" nests are that I found last year. Parked at rd closure (#656) where I always park to search BCS. Not too bad a walk from this side rather than going in from the paved road. Still such a nice grove, there is something about it that is calming, peaceful, old. Both nest structures still up but not real good shape and both unused (*Nest # now of one is BCS 195*). At original stand- Unused, only the one nest still up and no sight or sound of goshawk. I only walked just along the stand and stream bottom, but stream is running well now.

*Did not visit/check again this year.*

### **2006**

30 MAY: Real brief visit to original stand. Was very tired and stopped on road by nest stand and napped! Did not hear anything while on the road and with brief check on nest – now all are gone- no sight or sound of goshawk.

*Did not visit/check again this year.*

### **2007**

15 MAY: Checked on original stand area and nothing new and no sight or sound of goshawk. I am too tired to walk over the ridge to east nice drainage where old X nest are (#195). If they are there, they are protected well enough!!!

*Did not visit/check again this year.*

### **2008, 2009, 2010**

*Did not visit/check these years.*

## **2011**

14 July: Measured in stand of 36 and 153. No photos and no sight or sound of goshawk. Stand still in relatively good shape- a good running stream in here this year. A few more down/dead large PIPO but the understory still healthy. Will walk into the other draw of #195. Active goshawk over in this draw somewhere. This is still pristine and healthy as when I first walked here. Multistory old growth with aspens etc. After marking tree #195 and walking north uphill out of the draw- at top where it meets the logging road- an adult goshawk flew in to perch and watch me. She/he did not call or move out, I searched a little around this area but no nest found. As noted in old field notes, I have found 2 structures in this draw, but only one marked for records for I have yet to find the goshawk nesting here. The "Active" years that I could not find them they would have been over in this drainage. In years to come, if people want to search- they will find goshawk in here.

## DAMON CREEK

DAM <sup>21</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	35	6/23/93	N	F		
1994		5/10/94		UNO		
1995		4/27/95		UNO		
1996		5/1/96		UNO		Immature goshawk active in area
1997		5/3/97		UNO		
1998	35	5/9/98	Y	S	3	
1999		5/16/99		UNO		
2000		4/19/00		UNO		
2001		5/13/01		UNO		
2002		5/10/02		UNO		
2003		5/7/03		UNO		
2004		5/4/04		UNO		
2005		5/3/05		UNO		
2006				DNC		
2007		5/15/07		UNO		
2008		5/30/08		UNO		
2009				DNC		
2010		5/7/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

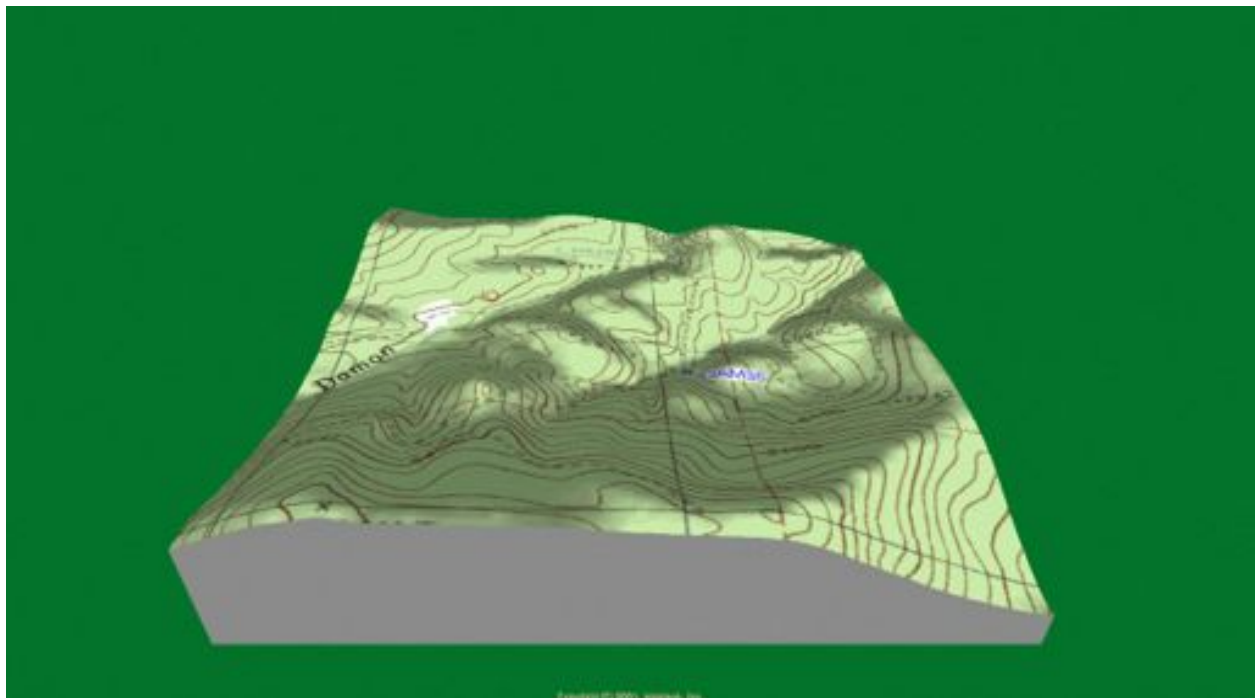
This is a curious territory in that the first year it was found, it failed. A lone adult was found wailing around the nest area and a dead chick wing was found at the base of the tree. However, the FS was in the stages of planning this region, so a PFA was established that included 30 acres around the nest tree and approximately 422 acres in the surrounding drainages. Much of this acreage was made up of the DOG unit along the Damon Creek draw to the west, which was, in my opinion, a misrepresentation. A lot of this DOG was already cut over and was one of the examples of the misrepresentation of “setting aside” old growth in the late 1980’s (see field note of 2004).

This territory was dormant for 4 years after discovery, then used only one other year. There was one other nest structure (about 1400 feet to the northwest, up over a small ridge, toward Rd. #3780 and into the Damon Creek drainage) that was occupied by a GHOW in 1995. I continued checking this nest, as a possible alternative nest site, but it was never seen used by goshawks.





*North up*



DAMON CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
DAMON CREEK -35	TAG	5322	ABGR	27	nd	72	282	2 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
35		A	I	I	P	P	A	I	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
35	I	I	X		DNC			DNC		X

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)**= 421 acres established according to FS records. In '93, 30 ac. at nest site and 421 ac. (with 235 ac. in high canopy closure) established

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### DAMON CREEK

#### 1993

23-Jun-93: 1020-1205: 1 adult male constantly wailing, is not defensive when approached, except for a weak kek. Can't find nest.

26-Jun-93: Found nest #35 used this year, whitewash and pellets below it. Dead nestling wing (down was wooly) found on log under nest tree. Adult goshawk briefly in area, not defensive. Sonya Daw said earlier in season, adult, she thinks male, came in and just wailed at her in response to caller.

#### 1994

10-May-94: 1430: Walk-in to nest #35. Nest is inactive, no signs of activity. Searched up drainage about 1/2 to 1/4 mi. but no signs of goshawk. Territory appears unoccupied.

14-Jun-94: 0950-1630: Calling stations in area- to the adjacent drainage which is Damon Ck proper, then over into Burntcabin Creek drainage along road#3780 and into the DOG unit- to the SW of nest area. At end of road#581(following the road that goes past nest#35 to dead end), adult kekked once & perched in drainage. Searched area, poor habitat thought, has been logged of all large trees. Goshawk didn't respond again and I didn't see which direction it took off in. Must be down drainage, which is more toward Boundary Scotty territory.

22-Jun-94: 0854-1300: Called drainage off road#581. Saw goshawk fly over when down near junction of road 318 and 274- near the new Boundary Scotty nest. Think I have been calling in the hunting male of this pair perhaps? No other responses to call.

#### 1995

27 Apr 95. First visit and had to walk into area, Rd #3780 is blocked by snow drifts and down trees into here. Stayed briefly, nest appears unoccupied but not in good shape. No sight or sound of goshawk.

PFA: In '93, 30 ac. at nest site and 422 ac. (with 235 ac. in high CC) established

23 MAY: Walked the lower part of drainage where #3780 has junction with road#581. I found the possible alternative nest site Sonya Daw found in 93. It is occupied by GHOW and 2 chicks in nest, young and downy with only a little pattern on feathers yet. No adults present. This nest is in a PIPO up a small draw that runs SE from Damon Ck. A well developed game trail goes up here and connects to draw where nest #35 is.

24 MAY: In for search and calling area. Called up drainage from nest and into area to ESE. No sight/sound of goshawk. Found what may be an old structure in drainage to the SE in crotch of small diameter LAOC. This stand is just S off road #581

*Did not visit/check again this year.*

#### 1996

1 MAY: in to do first nest check. The nest is almost gone now and unused. I walked over to the east to the old structure I saw last year and it must be gone, could not find it. I also checked the nest in the DOG along road. 3780, used by GHOW last year. It also in unused.

1 JUNE: In to do called search. Called within PFA area, spent approx. 2 hr here. An immature goshawk perched and watched me when I was walking up WSW from N#35. This goshawk gave no other response and flew off down drainage to NW- going into the OG area along Damon Creek and road 3780 itself. I called 3 more stations along this area but no sight/sound of goshawk. Jasper (*German Shepherd dog*) scared up 2 young coyotes and gave them a good chase in here.

#### 1997

3 MAY: 1400 Checked on nest and it is almost gone now. No sight/sound of goshawk, but didn't stay in area very long. Checked on the old nest to NW of this, in DOG area, unused this year. GHO was here last year or year before?

26 MAY: 1530 In to call and walk lower part of stand. Didn't stay long, got very tired and lost faith in what I was doing. Walked over the ridge into the DOG area to check on old structure, used the caller about 3 times but no sight/sound of goshawk.

*Did not visit/check again this year.*

## **1998**

9 MAY: In for initial check. Nest #35 is occupied! Female incubating on nest, the surprise of the season. Last year the nest was almost gone. This was first used years ago and that was a failure. I thought that perhaps since there was no "memory" per se of chicks raised here, that it would never be used again. Well, it is now, so other factors are involved. My view of a familial memory or instinct may be all bunk. Checked on the nest in the OG area to NW – still up but unused.

17 JUNE: In for nestling check. Success. with 2 in nest @ 12-14 days. Female was in stand and flew over but only silently watched – no vocals.

4 JULY: In for final check. 3 chicks at nest, 1 @ 30-32 d and 2 @ 32-34 days. All sitting in nest or on rim still. No adults in evidence. GPS'd the tree and did not get any response from them.

## **1999**

16 MAY: In to do first check. Nest is unused but still in good shape. Walked over to old "GHO X" nest to NW in OG area and it also is unused. Many territories were hard to get into this year because of the snow blocking the roads.

9 JUNE: In for search and calling area. Walked and called stand up drainage from nest then went over ridge to SE to where possible old structure was in LAOC. Thought I saw what was left of nest, but unused or not rebuilt. No sight/sound of goshawk. This year I checked many of the drainages that run off the main road #3780 between Damon and LSC. Did not find any goshawk.

## **2000**

19 APR: In for first check. Snow pack on road had to walk in from the junction of #3780 and BSC turn off. Nest up but unused. Walked in to GPS the "GHO X" nest, also unused. Only walked and searched between these two nests. No sight/sound of goshawk.

14 JUNE: In for second search. Nest still unused. I walked to the E, around on the road side, to area where I saw a semi-structure years ago. No nest found nor any birds seen.

## **2001**

13 MAY: First check of nest. Still in good shape, but no sight/sound of goshawk.

*Did not visit/check again this year.*

## **2002**

10 MAY: In for first check on nest. #35 unused but still OK, a little dilapidated though. Walked over to "GHO X" and it is unused also

*Did not visit/check again this year.*

## **2003**

7 MAY: In for initial check. Nest unused but I didn't stay very long here to search. No sight/sound of goshawk.

10 JUN: In for second called search. Called this in conjunction with BSC = track 10-JUN-03 BSC. No sight/sound of goshawk, see notes for BSC.

## **2004**

4 MAY: In for initial nest check. N35 is now gone. I walked over to the owl "X" nest and it is unused. No sight/sound of goshawk this time.

4 JUN: On a day when I had stayed out in camper for 3 days in Burntcabin Route. I have driven down road 3780 toward meadow at the top of ridge before it drops down into Damon/LSC side of ridge. Parked at junction of road 505 to walk along road that runs along top of this draw calling all the way over into DAM site, running by owl "X" nest, and then back up along 3780. See photo 2101-45. Was following old skid trails and logging roads that have started to grow over, some just large game trails now. It is sad that this area is posted with those plastic Old Growth signs put up in 93-94, and they are all deteriorating. They won't be up many more years and then nobody will remember this joke of designating this cut over chopped up part of the forest as a DOG! The large fir stands are really only on the direct drainage or on the really steep slopes, not good to get to. These stands have a lot of down wood and dog-haired thickets. I wonder what this will look like in another 20 years. No sight/sound of goshawk at all, so territory Unoccupied. Drove out along road 581 past N35 and around to next spring/drainage at end of road. I did a few calls along top of draw, sat about 1 hr to listen, but no sight/sound of goshawk. Again there are a lot of thrushes vocal in these areas, mainly Hermit thrush.

## **2005**

3 MAY: In to check on the two nest area- original stand and the old "Owl X" nest going NW over small ridge toward Rd #3780 in the old DOG unit along Damon Ck. Nest #35 in gone and no sight or sound of goshawk in area. Just checked briefly these two areas and did not really totally search areas.

*Did not visit/check again this year.*

## **2006**

*Did not visit/check this year.*

## **2007**

15 MAY: Checked nest stand of #35. Nothing new- nest gone and no sight or sound of goshawk.

*Did not visit/check again this year.*

## **2008**

30 MAY: Called stand and along the "road" that runs through this draw. No sight or sound of goshawk. The nest has been gone for years now and no other activity seen. Unoccupied.

*Did not visit/check again this year.*

## **2009**

*Did not visit/check this year.*

## **2010**

7 MAY: This hasn't been used since 1998 – 12 years. But FS activity planned for this area and C. Kranich wanted me to check sites. Nest is long gone, but will walk over to old Owl X nest to check. This nest is still up but unused. It is right at the edge of a "DS unit" marked with yellow flags and such now. New activity for here. If goshawk have moved, I would suspect that the drainage/draw to East of N33 stand is more suitable, but I have called and searched here several of the years and have not found any new or old structures. The road #3790 is snow bound, so didn't get over to this eastern direction. Don't know if there are any "units" laid out in the draw for FS project or not.

*Did not visit/check again this year.*

## **2011**

15 July: Sunny warm today, but it got to 35\* last night. In to measure and no change. Unused and nest gone and stand looks about as I remember it always.

## EAST SCOTTY CREEK

ESC <sup>20</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	33	6/24/93	N	S	1	Female banded-62/L
1994	59	7/7/94	N	S	1	Female band-60/L Male also banded but no ID
1995	33	5/3/95	Y	S	2	Female band-60/L
1996	59	5/2/96	Y	F		2 nestlings Female band-60/L
1997	33	5/15/97	Y	S/F		Female band-60/L? likely
1998	33	6/2/98	Y	S	2	3 nestlings Female band-60/L
1999	59	5/18/99	Y	F?		3 nestlings – one killed for sure, others not found No bands on this female
2000		5/2/00		UNO		Good GRJA mimics
2001		5/13/01		UNO		
2002		5/22/02		UNO		Good GRJA mimics
2003		5/7/03		A		
2004		5/14/04		UNO		
2005		5/12/05		UNO		
2006		5/31/06		A		
2007		5/15/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The importance of this territory is that this is the one place where a banded female returned to nest in successive years. In 1993, we banded the female at this territory; however, that particular female was never seen again. In the next year (1994), the female that was banded at an adjacent territory (BCC) took over this territory and used it for five consecutive years. This is the only verifiable individual bird that I observed in the years (see Figure 4). (A banded male was partnered here with her in 1994, but I could not verify the number on his band.) I obtained recordings of her vocal calls for 2 successive years (1995 and 1996) and was able to evaluate her behavior over the years. It was her changing reactions to me as a recurring observer each year that strongly suggests that goshawk will recognize and habituate to observers. In the beginning, she displayed a high level of aggressiveness when the stand was entered; but, by 1998, she was silent and passive to my entries to where I could get very close to the nest and her without any response. These observations, while not subjectable to any statistical analyses, nevertheless provide compelling anecdotal evidence of goshawk/observer interactions at this and other territories.

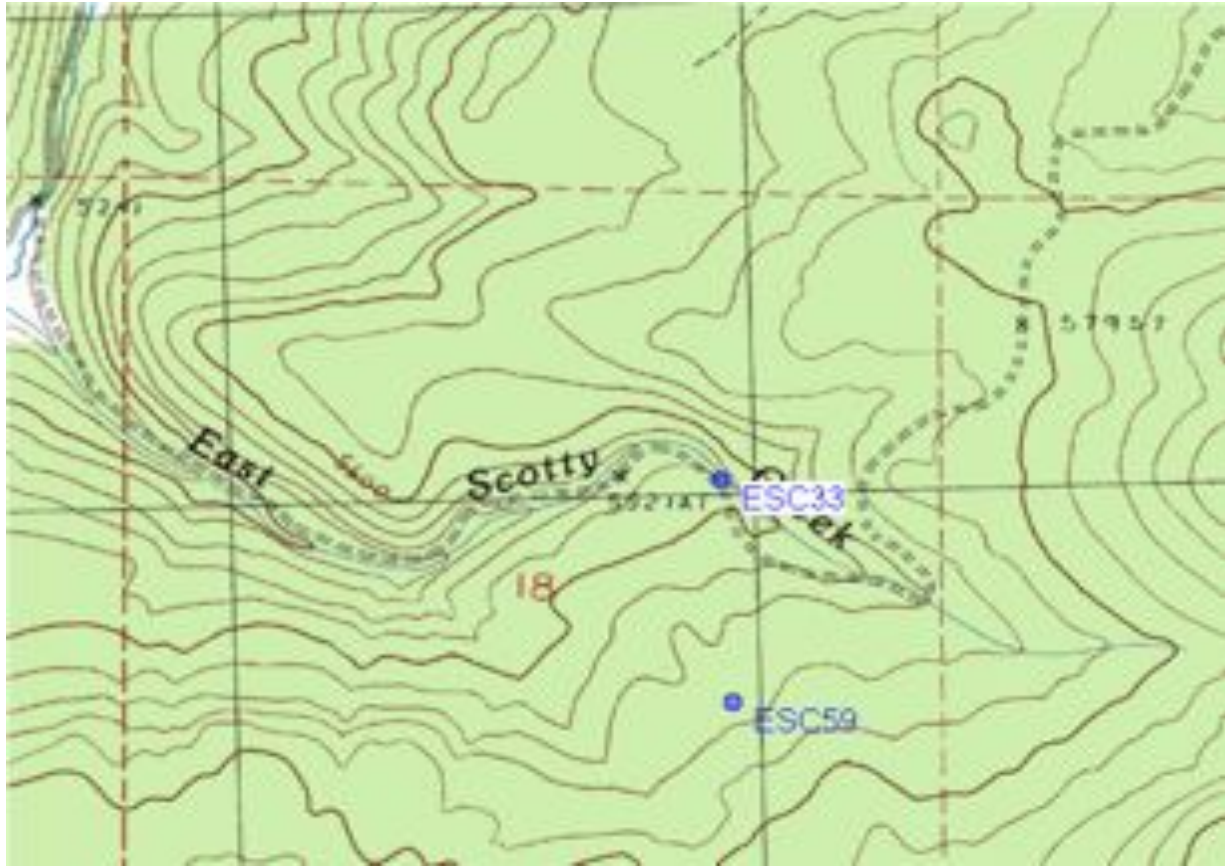
These nest stands have suffered cutting disturbances through the years. A thinning timber activity occurred during the breeding window in 1995, directly adjacent to nest site #33. Continual activity of fire wood gathering has notably changed the forest structure here. The larger trees are being removed, the middle canopy cover is diminishing, and there is an observable increase of two-tracks running adjacent to and through the stand, particularly proximal to nest #59.

I received responses from goshawks and good GRJA mimics while surveying this area in several of the later years, but never found an alternative site being used. I noted good GRJA mimics responding to the goshawk call, which in my experience, indicates that a goshawk is occupying or very near the territory.

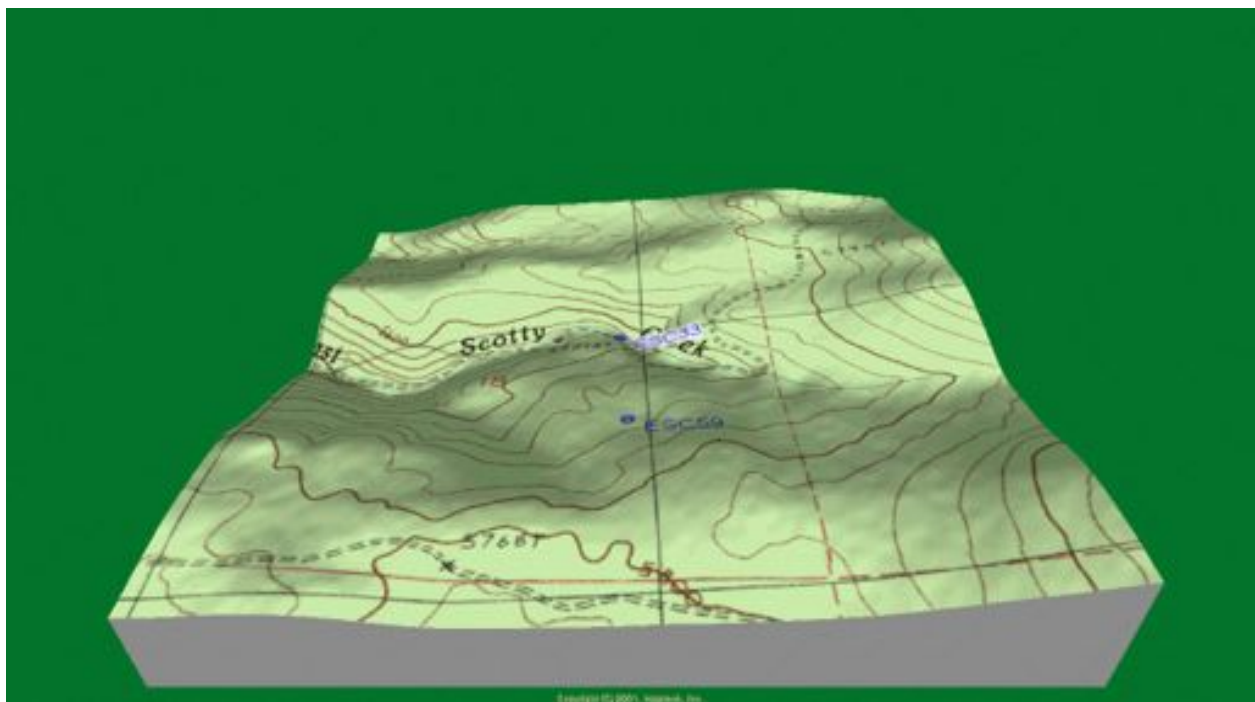


Photo is of Nest tree #59 (mid-center of photo) and surrounding area.





North up



EAST SCOTTY CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
EAST SCOTTY CREEK -33	NO TAG *	5581	PSME	34	W	56	flat	flat
EAST SCOTTY CREEK -59	TAG	5712	PSME	30	W	70	214	3 to NW

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
33		A	I	A	I	A	A	I	I	I
59			A	I	A	I	I	A	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
33	I	I	I	I	I	I	DNC	DNC	DNC	Tree down
59	X	X	X		X	X				X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 452 acres established according to FS records.

### Recordings

In 1995- Female (band 60/L) and male adult and juvenile vocalizations *east scotty creek 95 Jun17.mp3 and east scotty creek part1 95 Jun23.mp3 and east scotty creek part2 95 Jun23.mp3*

In 1996- Female adult vocalization (band 60/L)  
*east scotty creek 96 Jul4.mp3*

### Trapping and Banding History

In 1993- Female adult: She was never known to return to the Malheur. However, the female banded at an adjacent territory was recovered here in 1994, 1995, 1996, probably in 1997, and 1998 (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### EAST SCOTTY CREEK

#### 1993

24-Jun-93: Nest #33 found- 2 adults in area and 1 Nestling

25-Jun-93: Nestling is approx 21-25 days old. 1 adult in area. We only stayed 5 min. to observe.

26-Jun-93: 0430-0800: Trapping and banding, caught female but no sign of male. Female appears to be 2nd yr or 3rd yr bird for entire rump had juvenile feathers (brown) and some coverts and flight feathers juvenile -also brown eyes, youngest female we trapped this year. Finally at 0530 the female came off nest- problem was apparently she could not see the GHOW directly, we had to make a lot of noise to attract her. Released her at 0730, she was very gentle and docile. Sexed her by looking at brood patch and measure wing and tail.

03-Jul-93: 1 Nestling approx. 27-29 days old.

19-Aug-93: Nest data collection. 1 young heard up drainage.

#### 1994

09-May-94: 0830-1225: Stand watch, 3.75 hrs. Territory appears unoccupied, no sight or sound of goshawk. Walked down to look at nest #33 itself -looks unused. Detailed notes of watch on page 94-24.

26-May-94: 0830-1200: 2nd stand watch, 3.5 hrs. O.P is upslope from nest. Heard goshawk wail from area of nest tree, but nest still looks unused. As leaving, saw 1 adult goshawk fly 15 ft. over me heading to nest area. Territory occupied, but may be different nest. Detailed notes of watch on page 94-36.

23-Jun-94: 1330-1400: Nest check again- still inactive. Walked down into drainage, searched around nest a bit, used wail call with no response. Did not have time to search much. Need to come back to find new nest. This is another territory where goshawk seen and heard, but can't find them directly - like BCS.

30-Jun-94: 1300-1640: Called along E Scotty Creek about 9 stations along road# 403 working down drainage toward Scotty Creek main. Called down into DOG and around to the N drainage- no response.

07-Jul-94: 0930-1100: New nest #59 found. Stand search to the S side of drainage, called a few times and had good GRJA mimic. 1 adult came in silent, perched. 1 Nestling @34-36 days old on branch. Sue (*member of field crew from OSU*) and I were there at the creek crossing the road at bend when heard call and ruckus with a PIWO. See pages 94-68 to 94-69 for details. 1245: Went back in with scope to see bands on birds. Adult female there with B/W 60/L, aluminum on right. Male also had aluminum on left, could not see his number on his right. SSHA with nest nearby was stooping at goshawk this time - as well as PIWO in area coming in to hound goshawk. Female is the BCC #19 bird

#### 1995

3 May: In to do initial check. Much snow on roads still, so have to take a long walk into nest drainage. Nest #33 has down on it - thought I saw a curve of head, but am not sure, view was obscured. Appears nest occupied. Did not go up to check #59 at this time. It is very snowy on hill there still, will re-check it just in case when I come back to area.

17 June: In to do nestling check and get recordings. 2 older chicks at nest- 1 @ 24-26 days & 1 @ 28-30 days? Female was at nest feeding when I first started observing. Both chicks active and standing at rim after female left. The oldest was frequently flapping wings and running across nest - almost out onto the branches. Female still was feeding, but the oldest chick could take the food by herself. Female stooped from behind only when I was within 10-15 ft. of tree. Recorded her call. This is banded goshawk 60/L - this is the same female from last year that used #59 nest. She was close when she stooped. 1st and 2nd calls on tape, I was shooting up at her in the trees about 70 ft away. Other recordings I was closer at about 20-30 ft. I learned from a

silviculturist of USFS that the thinning in a unit across the road from nest had occurred last week. So there had been noise and activity in the direct area.

23 June: In for fledgling check. I still by nest on branch @ 40 days, and could hear the other juvenile off in the distance to south. WOW - what a set of recordings I got this day. Collected pellets on ground and was searching the local area for prey etc. As I got back by the nest tree, the female stooped me. She was 60/L for sure. I recorded her alarm calls interspersed with the fledgling alarm calls in response to her. As I was moving to leave, the male gave some "croak" calls and 60/L started beg calling and flew off toward him. I was walking away, uphill back to car, and she came after me, beg calling still, and perched over me, away from nest, with a chipmunk??(Eutamias?) in her talons. This had been a food exchange between them. All this is recorded on last cut of tape SR695-6. I ran out of tape, damnit, because just then the male flew in, stooped me, and started calling. I quickly changed tape and got a few bouts of the male alarm call -first cut on tape SR695-7. Recorded his alarm call and in the background can still hear the female beg call. The male followed me all the way back to the truck, gave one last call, then flew off. I was shooting up at them when recording but was always within 10-15 ft. Sometimes the female was very close in her stoops and can hear these on SR695-6.

## 1996

2 May: In to do first Nest check. Nest #59 in occupied. First checked #33 and it was unused. As I was walking up drainage, noticed that trucks and equipment had already been on this road. Perhaps this activity had occurred at courtship time and this placed seemed too busy for goshawk? As got to road#420 to start up to other nest, I felt my "electric sensation" - my thought is that this is "right" or "Observe! something nearby". I'm not sure of this sensation yet, this is my intuitive feeling -my bioscanner - but don't know how to really operate it fully. As I got closer to #59, I felt a deep stillness about me. I thought "she's here" and yet I was a little surprised that I saw down on the nest. Then I saw her head and eyes. Female on nest incubating, calm. The nest looks like it is falling apart, but she is tucked right up against the bole of tree.

30 May: In for first nestling check and possible recording. Female is still on nest very quiet and calm - did not flush or make a sound, thus no recordings done. No wh/wa on rim so probably on eggs or very young chicks.

25 June: Nestling check. 2 chicks, very downy, hardly any pin feathers and auricle area still downy- they can look about and preen - maybe @ 20 days? They seem relatively young compared to other nestlings this year. Female sat on nest the whole time watching me, she did not call or move. The chicks were moving around and preening.

4 July: This nest failed for some reason! Nobody home - in nest, branches, or on ground. Female 60/L is here, could ID her this time. This makes 3 years in a row that she took this territory. She was banded at Burntcabin, I think. I was walking under nest to investigate and she came in after awhile. She stooped once and perched and alarm called a few times. I sat for quite awhile to see if any other goshawk would respond to her, and this whole time she just perched above me and watched quietly. I got a response again when I walked toward the nest, recorded her. So I have a recording of same individual from 1995 and 1996 to compare. This was very sad to me, that this same goshawk who I had greeted each year, we were both sitting and mourning it seemed.

## 1997

3 May: In to do initial check. Walked in to check #59 first - unused but in good shape. Spent time walking through stand searching on way to #33 on creek. Nest looks unused at this time but when I walked under it I saw a bit of down on nest bottom. Could be old fluff but nest itself looks substantial. Some of nest material has fallen onto branch below. Walked up to OP on the hill above and still didn't see anyone on the nest. Will have to re-check this first before I start my calling next time.

15 May: Actually saw the hunting male at the BFL -Cornell site I had picked near ESC -See notes pg. 97-31 and 32. Nest #33 is occupied - female on nest incubating. I was right when I came in here the first time. It was early and they were probably in egg laying mode, but I thought the nest looked tended. I had to walk right down to nest again in order to see the down on the rim. Then when the sun came out, I could see her head in the nest. So, that most probably was the hunting male I saw this morning near Smith Meadows while doing the BFL plot!

6 July: Successful, but number of fledglings unknown. Lots of down on nest, some wh/wa around and at base of tree, so judging by condition of nest it appears they fledged. Could have fledged long time ago - early nesters? Never did get to see the female standing - to check if she had a band!

## 1998

9 May: Tried to get into drainage, but a large PIPO had fallen across the road way down from Smith Meadows even. Will have to come back.

2 June: In for initial check. Nest #33 is occupied - female on nest incubating. Had to walk on road down to nest to see the down on rim, then could just barely see her head in nest. GPS'd the other nest #59 but not #33 yet.

17 June: Great news. It is female 60/L again! She was beg calling as we (*out with a FS volunteer that wanted to see a goshawk*) were walking into the OP above nest. That must have been a food exchange, because she was feeding the chicks when we started observing. 3 chicks in nest, still very young, probably @ 14 days? It did my spirit good to see her again.

4 July: Chicks still in nest. Was walking in on road to GPS the tree, but when got there the female was on the nest feeding them. They sound very young yet, so will have time to come back next week and age them.

7 July: 2 fledglings @ 26-28 days? It is 60/L female and it appears she is much calmer than years before. Is it my wish or does she perhaps truly know me after all these years of me showing up to check on her? Who knows how their memory functions? I walked down to tree to GPS it. She was perched on lower limb of tree watching me as I approached. She stayed like that a long time even as I sat on the ground below her about 15 ft from tree watching her. After awhile, she lazily flew over me and called 3 times, not aggressively as I know she can be. It was very peaceful to be there with her. Verified that there were only 2 chicks in the nest, they were up stretching and walking about. T-storm passed over and I left.

## 1999

18 May: In for initial check. Long walk in because there are big drifts of snow everywhere this year. Nest #59 in used - female in nest incubating. Re-flagged route into site and found a new OP site on different side of nest.

22 June: In for first nestling check. 3 chicks, 1 @ 24-26 days? and 2 @ 14-22 days? These are older chicks it seems from other nests. I got disoriented trying to find the new OP and she surprised me with a close stoop. She perched above me but made no other sound. No bands on this female! She just watched me then as I walked around the nest to verify chicks that were low in nest.

6 July: Fledgling check and nest has Failed. At least one of the chicks was eaten for sure. I found plucked juvenile feathers on the ground near tree. No chicks in the nest, and there should have been from the age I last saw them. As I was searching the ground, I heard a beg call off in the distance. It's possible that one of the oldest may have survived - or it could have been the adults calling. (*Note: Thinking on this at this time of year, the begs are from juveniles and the adults are more silent, so it possibly was a fledgling.*) This is the pits! This is the second time of a failure at this nest. It is a very exposed nest and easy pickings for an owl.

## 2000

2 May: In for initial check -and could drive all the way in this year, this early. Both nest unused. They both are still up and in good shape, but no sight/sound of goshawk.

14 June: In for second search and using the caller. Still no sight/sound of goshawk. I picked up some real good GRJA mimics - who are they listening to??? The goshawk have moved from here this year. I need to see when my banded friend used this last. Perhaps she is no longer alive, and this territory won't be used until another one comes (*Note: I did verify that last year's goshawk was unbanded - so it was used by another goshawk already*). I should probably come back here in mid-July to see if I missed them. 2 territories that have always been used are unoccupied this year (BSC and ESC).

## 2001

13 MAY: In for first check. Both nests unused, but in good shape. No sight/sound of goshawk. This stand has opened up a bit through the years. Some wood cutters are in the stand by nest #59 taking out the large downed trees, making the 2-tracks larger as they do this.

NOTE: I have a feeling that yearly usage of the same territory is a familial trait, remembered from the year before. The same banded female here used these nests only- even when she failed at #59. It was the same individual between the 2 nests. Now she is gone- probably dead- and only one other goshawk has taken nest 59-perhaps a fledgling of hers??.

## 2002

22 MAY: In for initial nest check. N33 unused and N59 gone. Walked down drainage of nest 33 then along road that borders the bottom end of N59 stand and worked my way up along ridge to N59 and that stand. No sight/sound of goshawk.

13 JUN: In for second called search. Doing a late afternoon call this time to see if response better. Track= "ESC 6-13-02". There are good GRJA mimics here so where did they learn from? I called further along road that runs along top of ESC drainage

rather than the lower road I have used in past years. There is good habitat along here and up on edge of the cut unit that is to the S of N59. No sight/sound of goshawk.

## 2003

7 MAY: In for initial nest check. There is a log down in the road again and I will have to walk in about 1 mile. Nobody home, so sad. N33 is still up but unused. N59 is gone but now there is a 4-wheeler track plowed right by the tree and through the stand. Woodcutters and hunters I guess marking up the ground when they motor through here. Searched the stands around the nest sites, no sight/sound of goshawk.

9 JUN: In for second called search. Out with camper and Curly (*German Shepherd dog*) to camp and call territories for 4 days. Will do evening calling here. I parked truck on road above N33 area where I usually do. On my first call I got a response 2x in the area above N33, up that draw to NE. I searched and searched this draw above and over around N33 area, called, and never got another response nor saw goshawk. N33 is not used. Track = "9-JUN-03 ESC" It sounded like a male. So, perhaps in these low nesting years these territories are still used by adults and will still respond to the caller only briefly. It makes me doubt though. Are they nesting nearby and I can't find them or is it just a non-breeding adult or even a failed nester that is near. I can't say. I will call this an Active territory though- it reinforces the need to protect these stands even when an active nest is not found. Goshawk still depend on these and use them regardless.

1 JUL: In for another search. In to recheck the area where I heard the goshawk, just to see if I can find some noisy juveniles. I sat and listened awhile first. I searched the draw, down to N33 back up and on the ridge further over toward Scotty Ck drainage, but still found nothing. No response to the caller, no sound of goshawk this time. Didn't spend a large amount of time here, but mid day may not have been the most opportune time to listen for activity. But no new nests seen in this area that I had missed.

## 2004

4 MAY: tried to drive into territory but a large tree is across the road 254 right at about Smith Meadows. Too far to walk in right now. Will have to ask the Forest Service to clear road first.

14 MAY: In for initial nest check. Road is cleared but there is a wood cutters pickup parked at top of territory where I usually park. This will cramp my style, but I don't hear anything. Only N33 is still up but in poor shape. Walked stand between the 2 sites and no sight/sound of goshawk. While near the second nest site, I separated 2 elk in woods, and the contact calls between them were ones I have not heard before. It was a gurgle/bark/slight bugle all in one given in short bursts.

15 JUN: In for second called search. Out with TJF (*Ted Fremd*), and when we first got out of car by stream, Ted thinks he may have seen a wolf, large furtive canid. Using the new CD with "Swedish" goshawk call on it= the goofy one. See photo #601-216. Walked and called all good looking habitats with in 1K. No sight/sound of goshawk. At top of road #420, we saw a RTHA and COOP come in very close to check out this call. The Coop called back 2X but the RTHA just watched. They flew by right at eye level, very close to us. So don't know if this is a successful call to use or not. They were interested in it but no sight/sound of goshawk. So Unoccupied this year. (*This is about the time that the Yellowstone wolves were dispersing, so most likely a wolf seen. They are more commonly reported now in this area as of 2011.*)

## 2005

12 MAY: In for first check. Late start (building crew at home- putting on new deck) Clear, sunny temp= 70 deg a nice day after several days of cold rain. Got all the way into stand on road but clouds gathering and probably will have T-storm soon. Unused-#33 nest is still up and in good shape, #59 is gone. No sight or sound of goshawk nor new structures found. No mimics, but jays present in stand.

*Did not visit/check again this year.*

## 2006

31 MAY: In for first check. Will check the one good nest (#33) and then will call the stand. ACTIVE at least. After a lot of years of not seeing any goshawk here, I did call one in this time. N33 is still good but unused. Started calling there and then walking back up road to truck parked at the junction of Rd 420. When almost to truck, saw a large goshawk perched in draw that flew when she? saw me. So they are near somewhere but I haven't been able to locate new site. Walked up draw to top of logged units them back down- calling along road that comes into this draw from the top. No other response or sighting.

*Did not visit/check again this year.*

## 2007

15 MAY: In for first check. Sunny and clear but fog on road leading into area at cattle guard- will walk in forest leading from hill into draw. This will give me a chance to walk the whole draw down into nest area. Unoccupied – nest #33 is still good but unused, but no sight or sound of goshawk otherwise.

*Did not visit/check again this year.*

**2008, 2009, 2010**

*Did not visit/check these years.*

**2011**

15 July: In to last measure and it was utterly painful. Tree #33 is down on ground. The tag is still on the tree, but tree has blown down across the stream. I could touch the nest now because it is so well built and still intact. I took a stick from it as memento of my time and “hers” here. #59 tree is still up and tagged, but no nest. I don’t quite understand this sadness, but such an end here. My real connection with one female for some years and now gone....ah impermanence still carries a wallop for me !



## FISK GULCH

FSK <sup>8</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	08	8/16/92	N	S	2	
1993	08	4/23/93	Y	F		2CHICKS
1994	50	6/13/94	N	S	2	
1995	08	4/25/95	Y	S	3	
1996		5/1/96		A		
1997		4/29/97		UNO		
1998		5/7/98		UNO		
1999		5/15/99		A		
2000		4/25/00		UNO		
2001		5/13/01		A		
2002		5/10/02		UNO		
2003	158	5/9/03	Y	F		
2004		5/6/04		A		
2005	178	5/3/05	Y	S	3	
2006		5/30/06		UNO		
2007		5/15/07		UNO		
2008		5/6/08		UNO		
2009		6/4/09		UNO		
2010		5/6/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This is a curious territory, in that the habitat is not what would be considered prime for goshawk. It is dominated by fir trees, many with prominent mistletoe clumps, with a scattering of large PIPO in the draws. The surrounding area has been subjected to significant timber cutting as well as heavily overgrazed.

There have been several years in which active goshawk have been observed in this territory, but the nest localities were never found. Because of this, I feel certain that many nest areas in this region still have yet to be discovered. Lacking sufficient time to grid call this area in later years, I suspect that some nest sites may be found to the SE in Fisk Gulch draw. This region's aspect consists of northward-dipping draws on the edge of the FS boundary that open into the meadow lands of Bear Valley to the north. This is a large open area of about 240 km<sup>2</sup> dominated by sagebrush and grasses. For some reason, all of these territories on this south side of Bear Valley (including SHTT, RD 651, and RCB) show continual usage by goshawk. A reason for this might be the accessibility to prey (ground squirrels) in this opening while nesting in the nearby forest (DeStefano et al. 2006).

Several nests in this territory highlight the variety of sites that goshawk will exploit. For example, nest #50 was one of the most unusual nest trees I have observed. It was in a clump of dead and dying Grand Fir of small diameter. The nest tree itself had fallen into its neighbor and was on approximately a 40-degree slant. The resultant nest was quite exposed, yet they

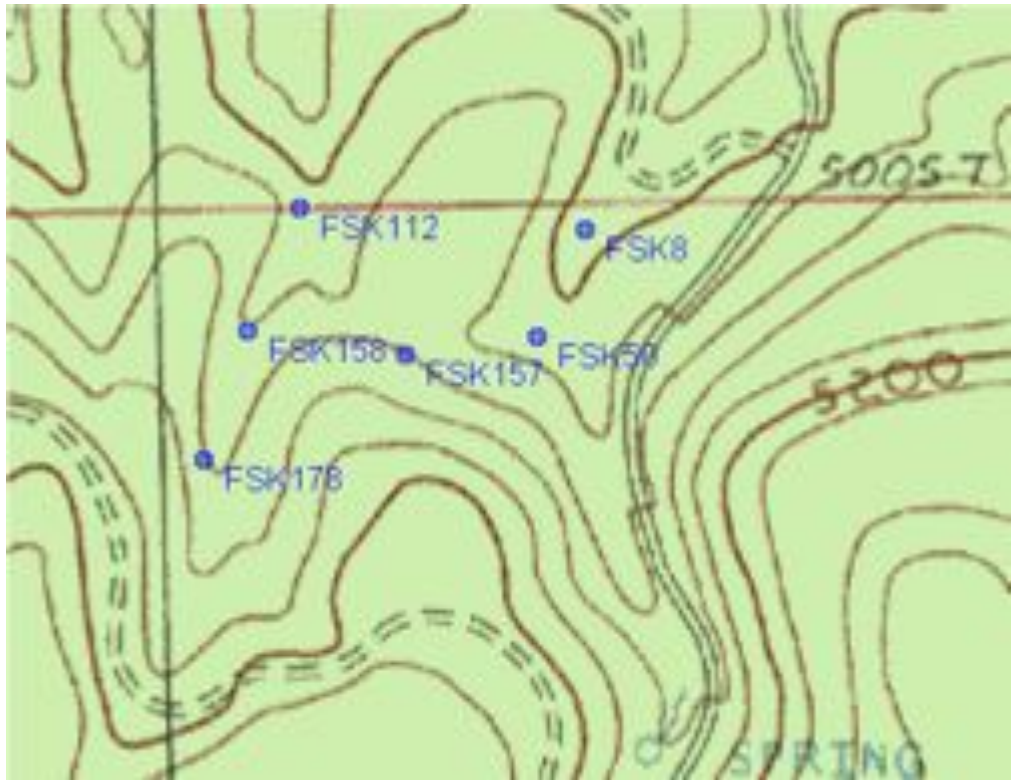


successfully fledged 2 young. It definitely was in a habitat in which one would *not* look for nesting goshawks.

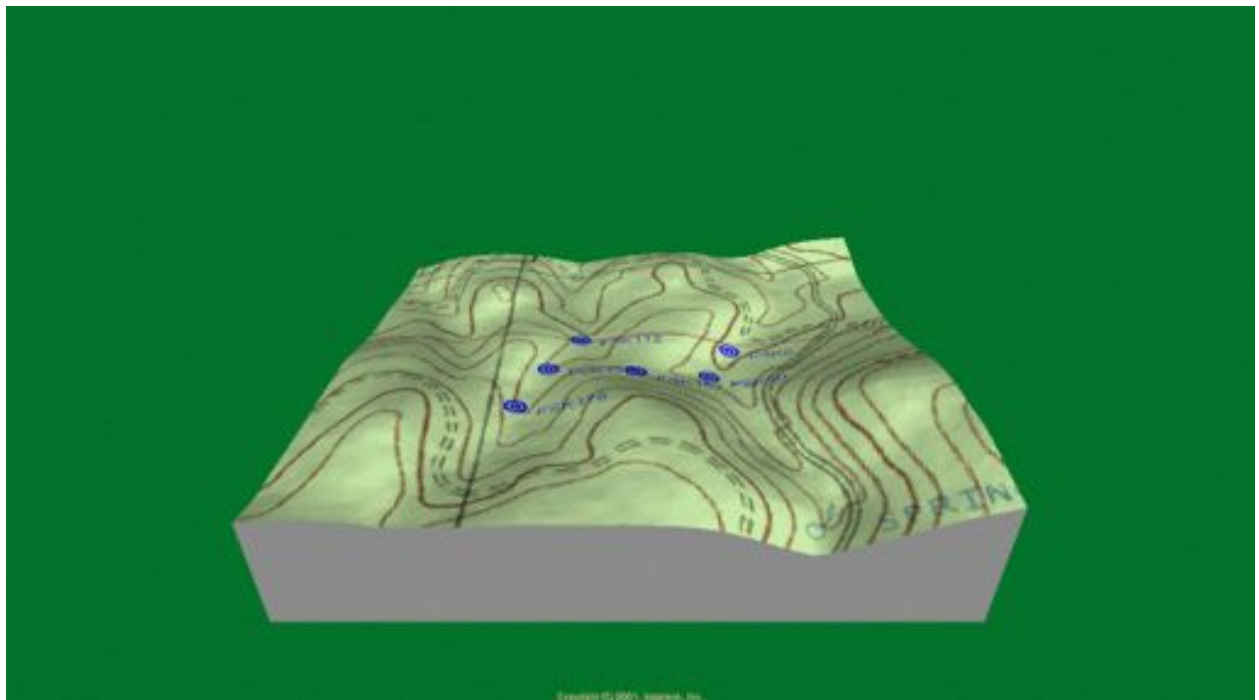
Photo above: Nest tree #8  
(in bright sunlight) and  
surrounding area.

Photo right: Nest tree #157





North up



FISK GULCH

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
FISK GULCH -08	TAG	4999	PSME	25	SE	40	256	5 to N
FISK GULCH -50	NO TAG *	5035	ABGR	20	SW	20	280	12 to N
FISK GULCH -157	TAG	5092	PIPO	34	176	40	274	15 to N
FISK GULCH -158	TAG	5064	PSME	17	10	70	210	20 to NW
FISK GULCH -178	TAG	5101	PIPO	26	270	60	334	20 to E
FISK GULCH -112	TAG	5019	PSME	15	250	60	350	20 to E

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
08	A	A	I	A	I	I	I	I	I	I
50			A	X						
157										A?
158										
178										
112										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
08	I	I	I		X					X
50		X			X					tree down
157	I	I	I	I	I	P	P	P	P	P
158		A	I	X	X	X				X
178			I	A	I	I	I	I	P	P
112			I	I		I	I	I	P	P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 456 acres established according to FS records in 2010. But in 1993-1994, 31 acres at nest site #08 protected and 404 ac. established . All area in poor quality due to past harvest, but FS deferred treatment on 478 ac. in PFA

### Recordings

In 1995- Female and male adult and juvenile vocalizations

*fisk 95 Jul1.mp3 and fisk 95 Jun17.mp3*

### Trapping and Banding History

In 1993- trapping attempted but with no success

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### FISK GULCH

#### 1992

16-Aug-92: 2 Fledglings in area; one very vocal. Moderate whitewash around tree, one prey item collected, no castings. Searched for alternate nests- none found; plucking post up drainage 50 m.

02-Sep-92: 1 Fledgling heard in area. Marking and taking measurements on nest tree and area.

#### 1993

29-Apr-93: 1 adult on nest (female) incubating; left after 5 min

11-Jun-93: 0950: Cleared area for net set. 1 adult in area vocalizing; 2 Nestlings approx 14 days old, no pin feathers.

16-Jun-93: Trapping and banding attempt unsuccessful

19-Jun-93: Chicks gone- Nest failed; Only 1 adult (male) in area exhibiting strange behavior. Suspect 1 adult was left alone to care for chicks but was unsuccessful and had a late failure in season.

#### 1994

10-May-94: 1600: Walk-in to nest; Territory appears unoccupied- nest shows no signs of activity. Searched a small area in drainage, no sight or sound of goshawk.

13-Jun-94: Ann Frost (*FS seasonal employee*) found new nest (see notes on #0050 ) Up drainage from #08 & #29. 1 adult vocal and defensive. Directions: from road# 473, walk 112 paces @ 187deg. Tree is white fir, 20 dbh, near dense fir stand.

27-Jun-94: Nestling check: 2 in nest, 1 @ 26-28 days and 1 @ 28-30 days old. 1 adult in area defensive, probably female and did not have any bands.

02-Jul-94: 0835-0840: Fledgling check- 2 in nest still @ 31-33 days old. Adult male? comes in and keks briefly then flies off. Couldn't check for bands

#### 1995

**PFA:** 31 ac at nest site protected and 404 ac. established in '93-94(?). All area in poor quality due to past harvest, but FS deferred treatment on 478 ac. in pfa

25 Apr: In for initial check. K. Haines (*FS wildlife biologist at the time*) wants me to check this early because of impending road work in area. Nest #8 has goshawk incubating on the nest. Went over to check on N#50, nest is gone. Did not check on the old structure 29? because as mapped, it is too close to #8 which is occupied. But still need to see if tree was ever marked or nest there at all. This represents an historical site prior to this study.

17 June: In for nest check. 3 chicks in nest @ 17+ days old. I did not illicit any response while I was under the nest but female stooped me from behind as I was walking away. Recorded the first set of alarm calls as she was up about 20m and I was 20m from this fir. I was trying to see if she had any bands, when I heard the male give a few guk calls from down the drainage. She started the series of begs with alarms, and hopefully the male will be on the tape too, then she flew off down drainage to the male.

1 July: In for second check and recording. All 3 chicks are branched @ 36-38 days. One adult took a lazy flight over me as I got out of the truck, male? and flew on. No response until I got within 10-15m of tree. First alarm calls on tape are from 1 juvenile up in nest tree. The last alarms are of the adult female. She was perched away from nest tree at about 20-30m. The recordings were taken at 80db and birds were 10-15m away. Did not collect pellets at this time. Looked like someone has been cutting firewood

right below nest tree. Also lots of cattle in drainage and quite obvious! Nest still was successful though. Adult female had no bands.

11 July: In to collect pellets and GPS'd the tree. Did not see and birds but can hear juveniles begging and calling to south in stand. Walked down to where N#50 use to be and saw 2 juveniles on the ground on the hillside. The female then came in and stooped me/ called. Didn't find any plucking post.

## 1996

1 May: In for initial check. Nest #8 is unused but still intact. Other nest gone. Walked stand in the immediate area, but no sight/sound of goshawk.

14 May: In for search and using the caller. Near last call station (see Map) got a response from goshawk that was a slow cadence, croaking sound. Only 1-2 bouts of alarm call, think it was a male. Walked toward it uphill and it flew off to the SW. Did not get any other response when used caller up on the hillside. Thought I heard a mimic up drainage from this. When I got back to truck, the goshawk had followed me and silently flew right over me. Will now go back S on road 310 toward the nest site marked as #20 on old map and search those areas. Now have spent 4.5 hours here with caller. From behavior and vocal pattern, I got a call and fly over by a male up drainage from the #50 nest and that is the only area I saw goshawk. I have a concern because it has rained on and off today, sometimes hard. It is not cold, but perhaps female is still tight on nest and would not respond. I will have to come back in June to search this again just to make sure.

15 June: In to do second search with caller in area of last goshawk sighting. Spent 1 hour calling in area where I got a small response last time, mainly around the nest stand. No sight/sound of goshawk. Territory is unoccupied but did see adult goshawk - male by behavior- utilizing the area, probably for hunting.

## 1997

29 Apr: In for initial check. N#8 is unused and in the area where #50 was, there is no new structure. The nest tree here is broken and almost completely down now.

*Did not visit/check again this year.*

## 1998

7 May: In for initial check. Walked the stand - no sight/sound of goshawk.

*Did not visit/check again this year.*

## 1999

15 May: In for initial check. N#8 is still up but unused. N#50 gone and all of tree now. Thought I saw a goshawk flying high over head to NE, but not sure.

15 June: In for second search and using caller. Have to go in blind and just call stations, because I have no idea where they might have moved. Appears unoccupied. Called stations around the local area of stand, marked track with GPS. Heard ravens again here and pileated woodpeckers - no sight/sound of goshawk. Drove N to another drainage at north edge of NF boundary to see if any good habitat there. Nothing. I then drove south along road to the hunting camp at the road junctions. Good habitat here. I stopped at the camp and did one call and got a response in the drainage to north of camp. I searched a long time, called again, GPS has track log, but no goshawk seen again. No structures seen either. If it was a GRJA mimic it was very good. I'll at least call this area active and do a search again when I come back into the RCB area.

*Did not visit/check again this year.*

## 2000

25 Apr: In for first check. Stopped at the hunting camp to search drainage first. Then checked #8, unused. Searched the stand here but no sight/sound of goshawk.

25 May: Started at the camp at road junction, with caller. I searched and called stations working down the ridge paralleling the road, and a few drainages to west. No sight/sound of goshawk. Walked down to #8 and still no goshawk. As I was walking back to truck, I got a GRJA mimic right at the stand below the camp again. Very frustrating. This is the area where I keep getting

responses, now from a good mimic, but cannot find any structures or goshawk. If a good mimic is in the area, a goshawk is not far off. Would need to recall this whole place again in later on perhaps.

*Did not visit/check again this year.*

## 2001

13 May: First check on N#8 while driving out, late in day. Nest is still up but not used. Did not walk any of the stand at this time.

29 May: In to walk stand and search. No sight/sound of goshawk. The stand where #50 was is all down now, all the dead firs are on the ground.

last week of June: K Haines had a volunteer, Grayal Farr, call the Fisk area. He got a response to caller near the cluster of #8 and #50 nest sites. This appears right where I got a response one year. No new nests or goshawk found though. Fisk is active yet the alternative sight for these past years has not been found!!

## 2002

10 MAY: In for first check. Unused, but I did find the nest that was used last year (#157). The other volunteer of Karen's (*see above notes*) did report a call response here, but didn't look far enough up the drainage from the #50 nest. Typical nest in a large PIPO, flagged, right at the ridge that separates this side (along road) from the draw to the SW.

*Did not visit/check again this year.*

## 2003

9 MAY: In for initial check. Found a new nest with female on nest incubating. 2 other nests still up and as I was walking up on ridge top checking N157, I saw an adult goshawk male? Soar up above me and going toward the valley. I at least knew they were here then. I followed my intuition to keep going past N157 and into the small draw further to the W-SW. I found the new nest in a tight clump of firs. Nest is in a PSME up at the top with no access to it open to see into it. I walked all around trying to find a good OP, none really. I flagged and marked the nest tree. Marked "OP FK 03" also that marks the first point of seeing the nest when you walk into this draw. I did get a glimpse of her back when she moved, and the behavior was goshawkish also. If it was a GHOW, by this stage in their incubating, I would have seen a big head watching me. This is a bitch to see into- but hurray, I found them, they're back!

11 JUN: In for nest check. Can barely see into nest. I do see movement occasionally and while Curly (*German Shepherd dog*) was walking around base, I think I saw her head pop up briefly to peek at him. She does not flush or move much even at this time. I doubt that even the caller would elicit a response. If with this behavior it indicates that she is just still on very young chicks and/or hatching still, this puts the next check into the last week of Jun. These are not old enough to have the BSU student come here.

27 JUN: In for nest check. It looks like it has failed. After a long time watching, there doesn't seem to be anyone in the nest. No adults evident in the area either. Almost no whitewash on the ground and very little down on the nest rim. With her behavior last time, she seemed like she had very young chicks yet, but it was late in the season for that, at least compared to the rest of the breeders. Perhaps the eggs never hatched at all, and she was still trying to incubate, or maybe the male got killed and she abandoned the nest. Who knows! Can't see into nest to see if eggs still there, but anyway this is another failure.

## 2004

6 MAY: In for initial nest check. All nests still up unused. No sight/sound of goshawk. I did find a new X structure "FS X04" that is up the draw from last year's nest that also was new. So Fisk has been occupied at least 1 more time than I think on this side in this draw.

1 JUN: In for second called search. Started calling from the top of this draw from the road 3790 that runs S of nest stand, near campsite. Pretty sure this is occupied. As calling from top walking into draw, I got a beg call response when at N157. I searched thoroughly this area but did not see or hear goshawk again nor any new nest. Continued on down draw to road that runs along N side of area. See photo 2401-204. Kept calling stations all along here. Walked back up draw and when close to last year's nest N158 I saw a new nest in a small fir (#112), looked like a mistletoe clump. I do not remember seeing this on first visit when searched here. Perhaps they were still working on this when first here and it was not so obvious. There was not much down or wh/wa on nest rim, but a little on ground. I could not see anyone on the nest either. I will know when I return later. As I was walking up draw, rechecking the new X nest, I heard a startled cry from a small bird (robin?). As Jade (*German Shepherd dog*)



and I were watching this area where cry came from an adult goshawk flew over us and into trees beyond. My thought on hearing this cry was that somebody got nabbed by goshawk or it was a close call. So, it is occupied with seeing goshawk here and another new structure, but if nest not the one used when I return, I'll just know that territory is Active. I got the one response to the caller when near nest, but all other calls done in this area got nothing. I guess I was being watched and known as an imposter. Even now, I should have been stooped and/or called at when adult seen, but no response what-so-ever.

17 JUN: In for nest check. Can't tell. The nest is clean with only one spot of wh/wa on a branch at the nest. But it is deep, so if chicks less than 17d they would be out of sight. No adults in evidence. I was in here 16 days ago and got the call, so if they were just hatching this might be the case. Or it has been abandoned. Since I never observed her on this nest incubating, I can only call this Active if in fact this nest is empty on next visit.

*Did not visit/check again this year.*

## **2005**

3 MAY: Out with TJF (*Ted Fremd*) on Burntcabin route. Clear after rainy yesterday and night, about 45-50 deg. In AM, no wind so far but will probably have scattered showers. In for first check. Walked in from the top road down draw with 3 nests in it. Occupied with female on nest incubating. This is the nest "FSK 04" now being used (now #178). We walked to check other nest- one now gone (#158) and the other "X" (112) and #157 still up. I marked a tree with flagging along road below an orange banded seed tree to left side as drive in on road 3790. This is the fastest way into OP site to get a good look into nest. A small fir has green/black flag along ridge here.

21 JUN: Nest check. Successful with 2 chicks @30 days with one a little bit younger. This is the first time that the female was snoozing in nest with chicks, facing away from us (*Ted Fremd*) at the OP- that she didn't fly away. Flew off when I walked around to get a better view into nest- then she flew off calling and the 3 chicks sat up to watch. All of them alert and healthy looking.

## **2006**

30 MAY: In for first check. Unoccupied at least the known nesting places are unused. No sight or sound of goshawk nor any new structures seen.

*Did not visit/check again this year.*

## **2007**

15 MAY: In for first check. Unused- walked the stand and measured all nest trees etc. No sight or sound of goshawk.

*Did not visit/check again this year.*

## **2008**

6 MAY: In for first check. Could drive to top of draw but not beyond- road blocked with snow bank. Walked the area of known nesting sites- only 3 up still- but no sight or sound of goshawk. Cannot go onto Shirttail or RCB now so will try to come back. This year will be truncated due to being gone to Sutrayana Seminary in June at SMC. I am checking the priorities set out by FS activity- which is the activities being done in Scotty Ck-Shirttail and my Middle route area.

*Did not visit/check again this year.*

## **2009**

4 JUN: Has rained for last 2 days- sometimes constant and hard. Today is sunny and warm in Am. In for first check. Unoccupied and no sight or sound of goshawk. TJF (*Ted Fremd*) found another old nest site way below known nests in draw. I had a feeling of presence and TJF saw a large bird- no good ID- fly over draw. But no sign of them in this stand this year.

*Did not visit/check again this year.*

## **2010**

6 MAY: In for first check. Unused- walked all along known nest stand and draws- no sight or sound of goshawk. No nests used and only 3 remain in partial condition.

*Did not visit/check again this year.*

**2011**

14 July: In for final measure. All nests unused and no sight or sound of goshawk while there. Only took a few photos.

## LITTLE SCOTTY CREEK

LSC <sup>24</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	40	7/7/93	N	S	2	
1994	49	6/3/94	N	S	2	
1995		4/27/95		UNO		
1996		5/2/96		A		
1997		5/3/97		UNO		
1998		5/8/98		UNO		
1999		5/16/99		UNO		
2000		4/19/00		UNO		
2001		5/13/01		UNO		
2002		5/10/02		UNO		
2003		5/7/03		A		
2004		5/4/04		A		
2005		5/3/05		UNO		
2006	182	5/31/06	Y	S	2	
2007		5/15/07		UNO		
2008		5/30/08		A?		
2009				DNC		
2010		5/7/10		UNO		
2011	2011	7/15/11	N	OCC/S	>1?	At least 1 juvenile seen

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Initially, this was labeled “Smith Meadow” territory in 1993 and the cutting units for “Scotty Timber Sale” were in the process of being laid out when the nesting goshawks were first found. Their nest (#40) was found in a large PIPO that had already been blue-lined for harvest. The TSO on this sale worked with the wildlife biologist at the time to preserve 34 acres around this tree and established a PFA of 423 acres in the surrounding area containing the highest potential habitat. The next year in 1994, when the nest site had moved to the south into Little Scotty Creek drainage, this PFA still provided support for this new stand thus no other cutting units had to be renegotiated.

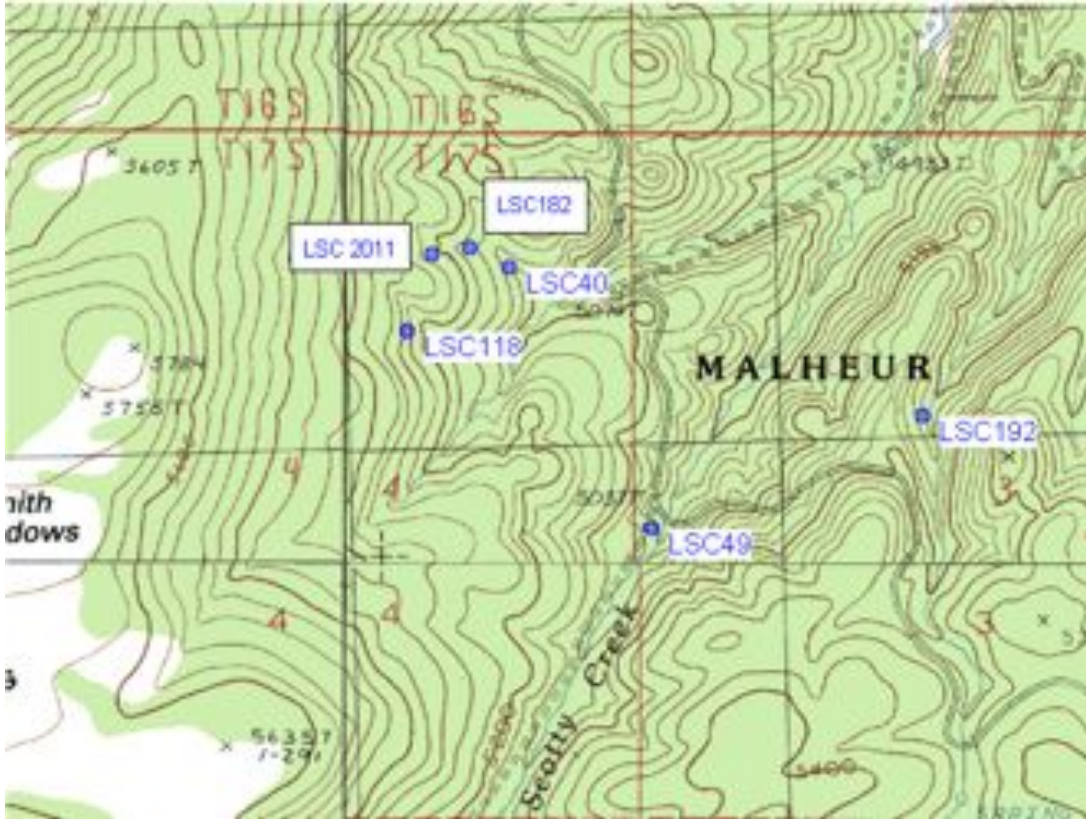
In this particular part of the forest, the terrain has many small draws that run in a SW to NE direction that border onto the south most edge of Bear Valley itself. (See Fisk Territory for description of this area.) In many years, an actively responding goshawk would be observed in these areas, yet the nest for that year could not be found. I did find other structures (nests #118 or #192) that were characteristically goshawk but were never observed in use. So, the potential for other nests to be found in here is high.



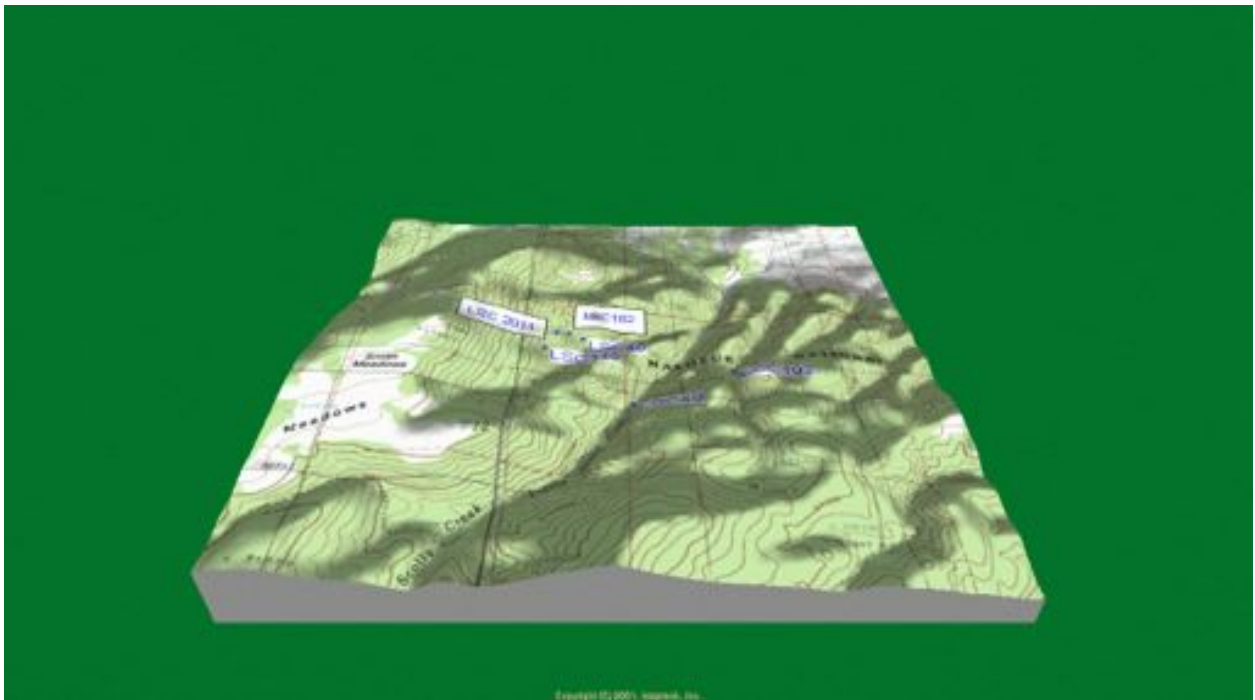
Photos are views of nest area found in 2011, left is view of nest tree and below is a close-up of nest

This is representative of the forest type and conditions surrounding the nests in this territory





North up



LITTLE SCOTTY CREEK



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
LITTLE SCOTTY CREEK -40	TAG	5135	PIPO	30	140	50	204	5 to SE
LITTLE SCOTTY CREEK -49	TAG	5033	LAOC	18	S	42	flat	flat
LITTLE SCOTTY CREEK -182	TAG	5172	ABGR	19	278	50	328	10 to E
LITTLE SCOTTY CREEK -118	TAG	5225	PIPO	28	120	40	360	12 to E
LITTLE SCOTTY CREEK -192	TAG	5124	PSME	32	152	50	190	24 to W
LITTLE SCOTTY CREEK -2011	TAG	5208	PIPO	39	108	35	314	8 to NE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
40		A	I	I	I	I	I	I	I	I
49			A	I	I	I	I	I	I	I
182										
118										
192										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
40	P	P	X		X	X		DNC		X
49	I	I	I	I	I	I	I		I	X
182					A	I	I		I	I
118			I			P	P		P	P
192		I	I						P	P
2011										A

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= approx. 453 acres established according to recent FS records. In '93, 34 ac at nest site protected and 423 ac (with 318 in high canopy closure) established.

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### LITTLE SCOTTY CREEK (AKA: SMITH MEADOWS)

#### 1993

07-Jul-93: 1100-1120: 1 adult at nest #40 vocal and defensive. 2 Nestlings approx. 36-38 days old. Nest tree freshly blue-lined for harvest.

#### 1994

10-May-94: 1330: Walk-in to nest #40, nest appears inactive. No sight or sound of goshawk. Territory appears unoccupied.

03-Jun-94: Timber markers found goshawk in Little Scotty Ck., the next drainage over from #40, very close in proximity. Think this is where the birds moved to this year (see notes on # 49)

1000-1040: Check on nest #49 found by timber crew. 1 adult (female?) standing on nest, quiet & did not flush. 2 +? nestlings seen in nest, very small @ 4-7 days. 1 adult heard, weak kek to SE side of drainage. Good OP on SE side also.

30-Jun-94: 1203-1220: Nestling check- 2 standing in nest, @ 32-34. 1 adult vocal and defensive, female?, no bands on this bird.

#### 1995

PFA: In '93, 34 ac at nest site protected and 423 ac (with 318 in high CC) established.  
27 Apr 95. Nest #49 appears unoccupied, but 1 adult goshawk flew low over road# 3780 as I was driving into area. Assuming that territory is occupied, either in this drainage or over at Smith Meadows nest ( this is LSC #40 now). Checked nest#40 appears unoccupied, but will re-check later. PFA: In '94, placed timing restrictions on any harvest in nest area for Scotty TS. Did not defer any new units because it is adjacent to the pfa of "Smith"

12 May: Drove to walk drainage. As driving up road#254 by nest, a small black bear walked across road and down into creek and ran off. Parked up drainage (S) of nest #49. I walked down by it, across road#2480, continued down drainage where the old logging occurs. Walked back up other side of drainage, checking 2 side drainages to W off road #254. Did not see any other structures and no goshawk. Walked a little ways S on road#262 that branches off road#254 that follows drainage. Called and tried out the CD player and worked OK with bullhorn. As walking up drainage to W, thought I saw goshawk fly overhead SW. Followed it and came down drainage by nest #40. Did 3 calls in this area but no responses. Re-checked #40, still not in use and no response to calls done at the nest area.

24 MAY: Went to search up drainage from #49 in places that Sonya Daw told me about. Found a RTH nest up road#250, female incubating and she flushed as I came near. There are several structures along these roads# 268 and 266 that branch off of road#254, but no sight/sound of goshawk. I drove back on road#268 to junction with road#3780. Walked the drainage that runs east from main road here. Did a few call stations, but no sight/sound of goshawk. T-storm rolled in, started to rain. It is a possibility that I am seeing the Boundary Scotty hunting male in here along road#3780 or the LSC bird is eluding me.

23 JUN: Called the drainage to the east of nest #49 – no sight/sound of goshawk. I have seen an adult flying along road #3780 near this area, but never got any response from any goshawk while calling and searching the surrounding areas. So, I suspect that I am seeing a foraging male from another territory, or one I have not found – or this bird may be a non breeder.

#### 1996

2 MAY: In to do first nest check. #40 (Smith meadows) is still in good shape but unused. # 49 also good but unused. As driving up the road#254 to check on structures at top of drainage( all unused), saw adult goshawk fly across the road about 1/2 mile up from #49 nest, near the junction of the 1st spur road that parallels the main road.

5 JUN: Started a called search of whole drainage. Spent 4 hrs. calling along road#254, up and over into #40 drainage, even up on top of ridge that overlooks Smith Meadow where Sonya Daw thought might be plausible. About 3 stations S of nest 49 along road, I got a response. 2 brief calls from an adult goshawk that perched and watched me but then flew off to West, toward top of



ridge. This is about the same place I first saw the goshawk on 2 May. Not a very good territorial response though, and I did not see or hear him/her again.

### **1997**

3 MAY: 1100 Checked on both nests #40 and #49- and both unused, but still in good shape.

15 MAY: 1100 Did silent search of upper drainage along road. No new nests seen. Then walked down road to N49. A little upstream from N49, I heard a ACST begging across the creek. As searched the slope and marked the area with flagging, one adult was seen, begging all the time, but it flew off a ways.

3 JUN: I got a note from K Haines that they want a release of timing restrictions for a timber sale in this area, so will do extra search here. I started in adjacent drainages, up road#203 and around to the LSC drainage. Walked around and below the #40 area and drainages. No goshawk seen/heard. I saw one GHOW on lower slope, but no other raptors. It started to rain and I am very tired. I am leaving to go to Calif. for my niece/nephew graduation – last field day for awhile.

### **1998**

9 MAY; In for initial check #40 unused and #49 unused.

*Did not visit/check again this year.*

### **1999**

16 MAY: In for initial check: #40 unused but still in good shape. GPS'd tree then walked the road that follows drainage a ways. No sight/sound of goshawk. Checked #49, still in good shape but unused also. After lunch, walked up to search the side road S of #49 at the meadow area. The nest that a RTH was using years back is gone, and other old structures are in bad shape.

9 JUN: I checked and did limited calling- about 3 stations in each- in drainages between Damon and LSC. The road that goes to a spring and “camp”, the drainage of #49 and the drainage of #40. No sight/sound of goshawk.

### **2000**

19 APR: In for initial check. #40 and #49 still in good shape but unused. No goshawk seen/heard.

*Did not visit/check again this year.*

### **2001**

13 MAY; In for initial check. #40 and #49 still in good shape but unused. No goshawk seen/heard.

*Did not visit/check again this year.*

### **2002**

10 MAY; In for initial check. #40 is unused and now ½ gone. #49 is unused and still in good shape. Did not do any search at this time. Tried to get up road to ESC, but log down across road and will have to come back.

*Did not visit/check again this year.*

### **2003**

7 MAY: In for initial check. Checked N40 and it is unused and almost gone now. N49 still in good shape but unused. Only really checked the nest stands briefly.

9 JUN: In for second called search. Out to camp for 4 days to do major calling of territories. This territory is Active for I picked up a goshawk but cannot find any new or used nest. I walked about 7 miles and 5 hours in this drainage and the surrounding draws calling stations. In the am, at about the 5<sup>th</sup> station up the drainage SW from N49, I heard kekking and a beg call. This all coming from the area of N49. I walked around nest area and it was still unused. I did see the goshawk here and it sounded female, then she flew off to the north. The rest of day I spent walking the area, and that of N40, and that across the road and areas to the north. I never saw or heard her again. I did find a new-old nest structure (192) in the drainage below the road to the

east of N49. It also had a brown new version of the wildlife tree FS sign on it. Who did this and not tell us? I don't remember. So, actively used territory but no active nest found.

## 2004

4 MAY: In for initial nest check. Checked N40 first- nest is pretty much gone now and no sight/sound of goshawk . N49 is in good shape but unused. I did not walk any of the stands at this time. I walked in the lower drainage below the road to check on X (*now #192*) nest, but it also is unused. No sight/sound of goshawk .

18 JUN: In for second called search. Using photo #2101-48. I am using the CD I made of calls for I now have little confidence in the response to taped calls. After spending 4 hrs and walking 5.6 miles- this is Active, they are here, but I'll be damned if I can find them. I started at road 233 closure and called up by N40 to top and along this slope, see photo. I did pick up a hunting male apparently 2X with a call in AM that lead me to search the slope to W and S of N40. I found a "X" structure in a good stand but unused. I searched drainage, up over to N49 side and when coming back toward car in this same area, after doing a call above the X site. He? came flying in low past me to check out this call. He perched in area watching me, called once, then took off toward drainage again. I searched all along where he flew, but could not find anything. I thought I heard beg calls, or a good mimic, at top of draw. I crossed stream and searched where this was coming from but it really doesn't look good here- logged. This is the E side of stream just above the road junc. So territory is Active for sure but did not find their location this year. I did find the major good habitat here that apparently is used more through the years. I also searched the stand that looked good off to S of 3780 just before it turns S into Burntcabin Ck. See photo #2101-47. There are some big trees here on top, but in the draw it has been logged awhile ago. It is steep thus it looks good on the photo.

## 2005

3 MAY: Checked the draw with #40 which is gone. Searched this stand, up draw and area of "X04" nest (*which is #118 now*). No new structures found and no sight or sound of goshawk.

12 MAY: Checked draw of #49 and it is unused. Driving up road #254 to try to get into ESC. Logs are down in road- no go. Got to LSC X area- old nest that was found years ago up LSC creek about 1.5 miles to spring area- but no nest now. I have now checked on the 3 known nest areas and all unused. I need to call all of the little draws off road #3750 along here to re-establish where they are. The last 2 years I have picked up goshawk active in this region here but not found the new nest sites.

## 2006

31 MAY: In for first check walking up draw of #40 and X (#118) nest sites. Occupied in new nest right close to #40. Female incubating in nest in medium size PSME along an old 2-track that runs off to NW a little past the #40 PIPO. A hunch drew me up this way, because I was heading straight up the road going to the old X (#118), but stopped and decided to pass by #40 first and angle up along this 2-track instead. Nest is in a crotch of PSME at top of tree. Found a good OP to see into nest.

21 JUN: successful with 2 chicks @ 19-20 days, a bit younger than other nests. Heard adult beg call a few times nearby, but they did not come into us (*with Ted Fremd on his B-day*).

## 2007

15 MAY: In for first check. Unoccupied no nests used. Old X (118) is partial, and last years (182) measured for FS data, but no sight or sound of goshawk in this stand. Nest #49 is still a solid nest but unused.

*Did not visit/check again this year.*

## 2008

30 MAY: In for first check. Checked stand of #40 and #182. No nests used. Did see a flying goshawk at road closure, where I park, as I was walking back to truck. Goshawk was checking me out and as I got close, flew off toward nest #49 direction. But that nest is unused. So goshawk in area, but not at known sites. So marked as ACTIVE.

*Did not visit/check again this year.*

## 2009

4 JUN: Checked only #49 for sure. Tried to walk the original nest stand of #40 et al, but heavy T-storm came in- so really did not check this territory well this year.

## 2010

7 MAY: In for first check. FS doing new monitoring and needs these areas checked. #40 unused so is #118 and #182- walked stand and no sight or sound of goshawk. Nest #49 also unused. I walked the stand and drainage to the east here, that is northeast of Road 3790. This area along a creek (I guess a tributary to LS Creek) is still fairly good habitat and I had found an old structure years ago. That nest (*now #192*) is still up but partial in a PSME thicket. It always has looked goshawkish to me, but has never been occupied while I monitored it. But today no sight or sound of goshawk.

## 2011

15 July: While driving to site, stopped and talked to a contractor fencing in the riparian zone in here. He works for one of the ranchers along Scotty Ck Road and it is good to see that they are finally being made to put up fence (one wire though) to keep cows out of stream. The draws all along Boundary Scotty and Little Scotty will be fenced in most areas- GOOD!

OCC/S in here in new nest! Found this year's nest and by size, amount of wh/wa and down on it, it probably had 2-3 chicks. I saw one juvenile for sure. This is a nest in a large PIPO right up from #182. I heard them calling while I was at #182 and found new nest when walking toward the call. While measuring new nest, the juvenile flew in and called at me. I could tell on her approach that she was young- squeaky voice. Big girl, I think, and she could hardly stay on her perch, clumsy and flew off shakily. Apparently she is the last to fledge.

## RAIL CREEK BUTTE

RCB <sup>31</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994	58	7/5/94	N	S	1	
1995	61	5/31/95	N	S	2	Found late in season by FS personnel
1996	61	5/1/96	Y	F		1 nestling
1997		4/29/97		UNO		
1998	58	5/7/98	Y	S	2	
1999	58	5/15/99	Y	S	3	
2000		4/25/00		UNO		
2001		5/13/01		UNO		
2002		5/10/02		UNO		
2003		5/9/03		UNO		
2004		5/6/04		UNO		
2005	58	5/3/05	Y	S	2	
2006	58	5/30/06	Y	S/F		
2007		5/15/07		A		
2008		5/30/08		A?		
2009		6/4/09		A?		
2010		5/6/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory consists of two nest sites (1.1 miles apart) on the north and south sides of Rail Creek Butte. I combined them instead of making them separate territories because goshawk activity was consistently observed on the ridge of the butte between these nests.

In 1996, there was heavy use by logging equipment on the road that runs directly around



nest stand #61; as well as many entries into the nest stand by FS personnel. I strongly believe that the failure of this nest in this year was the result of this increase of activity (see notes). After this timber harvest, the nest stand started to deteriorate with a lot of blow down (particularly in 1999) that opened up the nest site. In 2000, there was a road closure in force here, so perhaps this area will rehabilitate and become suitable habitat again in the future. The north side of the butte, however, has had

Close-up of Nest #58

consistently greater usage by nesting goshawk.

In general, these north facing slopes that border the southern edge of Bear Valley itself have had continual goshawk activity. This incorporates the stands and areas between Rail Creek Butte, Road 651, Fisk, and Shirttail Creek (see Fisk Territory for further description). In some years the known nest sites were not being used, but goshawk were observed frequenting the many draws that come off of Road 3790. This indicates that all alternative nest clusters have not been found yet.

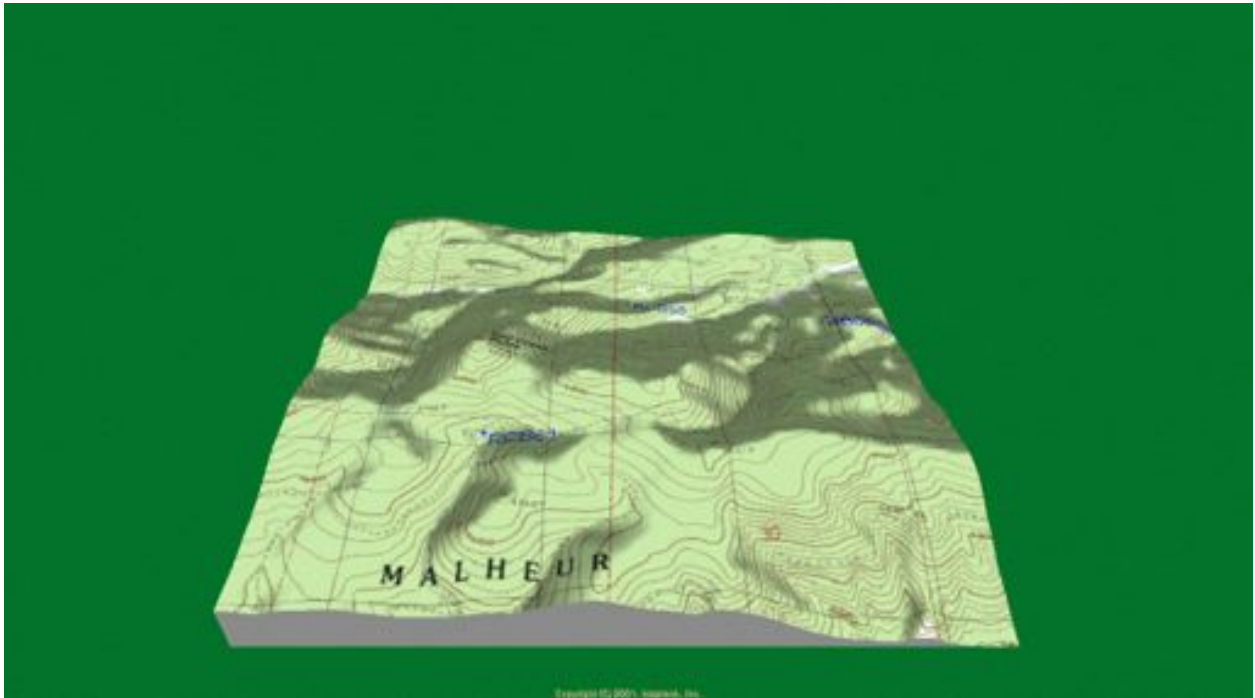
Photo of Nest tree #58  
and area







*North up*



RAIL CREEK BUTTE

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
RAIL CREEK BUTTE -58	TAG	5100	PIPO	26	130	50	278	6 to N
RAIL CREEK BUTTE -61	NO TAG *	5561	PIPO	31	80	50	nd	nd

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
58			A	I	I	I	A	A	I	I
61				A	A	I	I	I	I	P

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
58	I	I	I	A	A	I	I	I	I	I
61	X	X	X	X	DNC	DNC	DNC	DNC	DNC	DNC

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

\***No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= Two areas of 445 acres and 421 acres are listed according to FS records. These could be areas on both sides of the butte where each nest resides. No further information available.

### Recordings

In 1995- Female adult and juvenile vocalizations

*rail creek butte 61 95 Jun22.mp3 and rail creek butte 61 juvs 95 Jul21.mp3 and rail creek butte 95 Jul5.mp3*



## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### RAIL CREEK BUTTE

#### 1994

Knew this goshawk territory was here since 91, but never got in to check it, but Sue (*member of OSU field crew for Sonya Daw*) picked it up on her transects. Directions: Rd#3790 to Rd#600. Go up (W) #600 .8 miles to green/black flag on S side of road in small PIPO. Bearing of 180 deg. and walk about 90 paces. Just before the nest is a small opening, a 55 gal. old drum was on ground. Nest is in large PP (20-22 dbh) surrounded by a lot of thinned small stumps on ground. Nest tree is just before the rise going uphill.

05-Jul-94: 1500: Found nest #58 that Sue had picked up adult from transects in area. 1 fledgling on ground, not a good flyer yet @ 38-40 days. 1 adult vocal as walked up to nest. May have been others that had fledged already-only saw the one.

#### 1995

First visit 25 Apr 95. Walked into nest#58, on NE side of butte, and it appears unoccupied. Was in the area for 30-40 minutes. and did not see or hear any goshawk.

31 May 95: Broadcast call in area of #58. See map for coverage. Spent approx. 4 hrs. calling in stand and the most likely drainages/habitat and still no sight /sound of goshawk. Good GRJA mimic in nest area though. Called 3 stations up road#660, but it has been logged in past. Drove up road# 400 to the Spring and called a few stations along road# 026- no response at all. It has been heavily logged along Rail Creek itself. Called this territory unocc at this point.

3-10 JUN: Sometime in here, the FS personnel found the new nest site #61. This is over the ridge from nest #58. Goshawk were heard at top of this ridge last year, when they were nesting at #58.

22 JUN: In for nest check and recording. Female flew by me to the nest to feed chicks. Got a recording of chick whistles about 50 ft for tree. When she heard me, she came out to call at me. She has no bands. She was up in tree at about 10-15m from me, she did one stoop heard on tape. 2 maybe more chicks in nest @ 17-19 days

5 JULY: In for second check. Female came out to me as I got near. Second recording of her alarm call. Only saw 1 chick, branched near nest @ about 36-38 days. Stayed in area about 1 hr. and did not see or hear any other chicks. I walked near the tree to get good look, but still didn't see any one else. I backed off a ways to watch awhile, but female only watched me. Recording of her is about 10-15m away, recording level 85dB. I could have missed any other fledglings, or there may only be 1 chick.

21 JULY: In to do measurements at nest#61. Finally saw both fledglings flying uphill from nest site. Got recording of both the juvenile alarm calls. So 2 chicks were successful this year.

#### 1996

1 MAY: In to do first nest check. #58 on north side of butte is unused, but in good shape. Drove over to #61 on south side and it is Occup. Female on nest incubating, did not move off nest.

1 JUNE: first nest check. Still down on nest, but I cannot see her anywhere. If she was incubating, she is hunkered way down in nest. There seems to be no activity in nest, but several mosquitoes are hovering just above so there must be somebody home. Noticed that loggers had started moving equipment along the road that passes close, as K. Haines (*FS wildlife biologist*) said they will use this road. Perhaps she is staying low because of this activity, but I really don't think the trucks would impact her.

Talked to K. Haines on 3 JUN and she said that a silviculturist had walked into nest stand to see nest. He thought it had failed. So Karen sends Anne Frost (*FS seasonal*) in the stand the next day to check also. It makes me mad- I don't know why she did that. This is way too much activity at this time! There was no reason that any of these people should be going in here, especially with the logging activity happening. If it fails I would pick it up later in the season. Boy, I get tired of this lack of regard and coordination!

25 JUN: Yes- failed. We fucked up here by letting all this activity proceed. Too much traffic and too many people entering the stand. I did see the female incubating on nest in May, but not since then. Down still on nest rim as it was on last entry. Not sure if eggs even hatched, or small young abandoned.

### 1997

29 APR: 1630 Checked on nest #58 and it is unused at this time. No sight/sound of goshawk

3 MAY: 1640 Checked on N61 and it also is unused. Still up but is deteriorating now. No sight/sound of goshawk.

27 MAY: In for stand search on N#58 side. Out with new FS volunteer, John Shaeffer. May or may not use caller- overcast and rainy. Walked along drainage of N58 and up the DOG unit to road#651 at the end and top. Walked along road651 to just W of nest #57 (road 651 site). Used the caller 3 times but no response. Did see a lot of possible ACCO/ACST structures in the area. The spring/meadow at S of road #600, going up road #596, is worth checking again later, possibly Coopers here. No sight/sound of goshawk.

29 MAY: In to search the N61 side. No other structures seen and nest still unused. Walked to W of junction with road#898- possible habitat in here, but logged a lot also. Walked a bit down road# 890, habitat here also. Still rainy, so did not use caller.

### 1998

7 MAY: In for initial check. Nest #58 is occupied with female on nest incubating. She flushed as I got close and called one time and flew off. I left right away. Due to this behavior, might be an early fledge, like Starr, or she is just beginning. Checked on Nest #61 on other side, and it is unused.

17 JUN: In for nest check. Too young to see them in nest. Female stayed on nest and did not flush for a long time while we walked around (*out with volunteer K. Bush*). She was still on newly hatched chicks, so this is a late nester. She finally flew and we left.

7 JULY: In for nest check. At least 2 chicks still very young, maybe <14 days- all very downy and no auricle spot. Female stayed perched at nest just quiet and watching me. I sat and watched for about 20 min. – peaceful. Then she had enough, came straight off nest at me and chased me off. She had no bands. Will have to return to age chicks.

12 JULY: 2 chicks in nest @ 22-24 days. Female called while there.

### 1999

15 MAY: First check at N#61- Nest is still up but unused. A lot of tree blow down had occurred in the nest tree stand, so the nest itself is more exposed. Check at Nest #58- Occupied, female incubating on nest. Marked good OP on hill past nest.

6 JULY: In for nest check. 3 chicks in nest @ 26-28 days. One is younger about 24 days maybe. Female was perched in stand but flew off as I came in to GPS site.

### 2000

25 APR: In for initial check at N#58 side. Still up and in good shape, but unused. Did not search stand at this time. In at the N#61 side. Nest also unused. I am glad to see that the road has a closure gate here and the aspen are fenced in now to regenerate. In years to come this may be a great meadow area again, as long as the grazing stops!!!

25 MAY: In for search at nest #58. Called a few stations and walked stand, but no sight/sound of goshawk. Drove up road#600 to the creek crossing and called a few times, but nothing. It is logged as I remember it, but if have time should call this area and all the way over the top to the N#61 area sometime.

*Did not visit/check again this year.*

### 2001

13 MAY: In for first check at N#58 side. Nest unused and did not check anything else at this time.

29 MAY: Checked N#61 side. This nest is almost gone now. Unused and the road closure was open for some reason.

*Did not visit/check again this year.*

## 2002

10 MAY: In for initial check. Searched stand where N#61 use to be. Nest gone and no new structures seen. No sight/sound of goshawk. On the #58 side- nest still up but unused. I had a feeling that this would be used this year, but wrong feeling!  
Temp=49\*

*Did not do any other searches here this year. See notes on Rd 651 territory. To see if that was incorporated into this search.*

## 2003

9 MAY: In for initial check. Checked the stand of N58. Nest still good but unused. I walked the stand and marked a track that leads to the adjacent draw to call later. No sight/sound of goshawk. Drove to check the N61 side and nest is gone now. There is a lot of blow down here now and it has opened it up. No sight/sound of goshawk.

11 JUN: In for second called search. Camped below N61 area and will call this and over the top of butte today. No sight/sound of goshawk. There are some good stands left that I circled on map and marked on the track I ran. I remember this W facing side of RC Butte itself now. It has been logged all along Rail Creek up to the butte. This was one of the "DOG" units I ground-truthed in 91-92. I was shocked that so much of it had been logged and still called an old growth unit. Will drive over to the N side now and call area of N58 and Road 651 territory. Walked a track up Shirttail Creek, into the parallel draw to N58, up to top ridge that is the DOG unit, back down road 651, to the old X nest by the road and gravel pile. No sight/sound of goshawk. I did hear the RTHA chick beg calling at Rd 651 area. Adults called at me when I just got past the nest area, they must have been off hunting in AM when I started calling. Actually, it is very quiet in the forest these last few days. Not much bird noise at all, robins mainly.

## 2004

6 MAY: In for initial nest check. On the N58 side and that nest is unused. I am driving up road 600 to top again just to see if I can walk over to the other N61 side. I could so I walked over top and down through the habitat I had marked last year, but found no new nests. N61 is gone and no sight/sound/ of goshawk.

2 JUN: In for second called search. Camped at meadow campsite along road 600 to NE of stand last night and did not hear any early morning calls. Walked and called stations all along the DOG unit here that surrounds N58 for 2 hrs in AM. No sight/sound of goshawk. The area in places are rejuvenating at least the meadow area is coming back, but still a lot is overstocked with small trees and some deadfall. I had strange dreams last night but it was peaceful. Jade (*German Shepherd dog*) was very good, would growl at passing elk or deer, but would not take off after them. I can hear the helicopters and trucks from the Flagtail fire activity even over here! Parked at N58 to take bike up road 600 up and over into the top of Rail Ck drainage. Spent rest of morning and early afternoon, calling along the top of this area over to the spring head of Rail Ck. There is an old track that runs right along the drainage from spring that is now a major wildlife road. It is hard to image those days when they just ran a track and logged right into the stream. This draw is high elevation, 5400, and ratty. So, I have been here calling a long time and no sight/sound of goshawk. No mimics either. This territory is Unoccupied.

AS I was driving out along road 3790, just about at the level of RCB N57, a goshawk buzzed over the road in front of me. I stopped and searched this area, but found nothing. Figures!! A little further on at the 651 drainage and junction of roads, I heard a call or a good GRJA mimic. So, a goshawk had been in this area the whole time and not once responded to the caller. If I have time, I may come back to walk stand in July to see if I can pick up the juveniles.

Drove over to the S side to call around N61, the stand to E and W of nest site, but nothing. So RCB is Unoccupied this year.

## 2005

3 MAY: In for first check. Checking north side by #58. Occupied with female incubating on N#58. Great- this territory has not been occupied for 5 years now, so this puts it back on FS list!!! She was low in nest watching while in stand but she didn't flush- all cool.

21 JUN: Out with TJF (*Ted Fremd*). Successful with 2 chicks @ about 21-25 days, younger than other nests right now. Still very downy on head and on wings. Female was still standing in nest and was very tolerant to our presence. She watched us along time while there and then took off and alarm called. We left. TJF talked about the orientation of nest to aspect orientation to hill around and correlated to timing of hatching. RCB seems always to be later in fledging than other in same year. Why is that? Is it cooler in this area or what? Called stations along the road below RD 651 nest area. TJF did calls while I checked nest sites up from his station. I did hear some of his calls but it is directional with only a range of about 600-800ft. But no sight or sound of goshawk.

**2006**

30 MAY: In for first check. Checking N58 side only for now, and not other side of Butte, that nest has been gone for years now. Occupied in nest #58, female incubating

*Did not visit/check again this year.*

**2007**

15 MAY: In for first check. At #58 side only. Nest unused but territory is ACTIVE. While I was in the stand looking at nest, I heard a very faint croak- what I thought sounded like a male goshawk- but just thought it was trees rubbing together. But as looked around some more I saw male goshawk leave the stand and fly nonchalantly out toward road 600. I searched a little down stand, but would not be able to locate any new nest today. I would have to come back and call total area. This male could be miles from the nest, or well hidden. Anyway, use of area therefore called ACTIVE

*Did not visit/check again this year.*

**2008**

30 MAY: In for first check. Nest #58 still up but unused. Walked a little of stand, but not a good search. No sight or sound of goshawk.

This year while searching this area along Rd 3790, told FS that there is an active goshawk territory here somewhere. Between Shirttail, RCB, and Rd 651 goshawk seen several times. No nesting bird found but they are utilizing the area. So any FS activities will have to be on guard that they might run into them.

**2009**

4 JUN: In for first check. Checked on nest #58 area. Nest unused but territory is ACTIVE again. As walking out heard a beg call (could possibly be a good GRJA mimic) but regardless, if good mimics like this in area, there is a goshawk here or nearby. Again would have to come back to call stand but probably won't have time this year to do that.

*Did not visit/check again this year.*

**2010**

6 MAY: In for first check. Checked on #58 and it is unused. Did not do any further checking of this stand and no other sites on this side of Butte.

*Did not visit/check again this year.*

**2011**

14 July: Tried to drive the road up to #61, but large tree across road way down from nest. So the original data for this nest will have to do. Nest gone and stand deteriorated years ago. Could get in other side to re-measure #58. Nest still in good shape and immediate stand in same condition. A dye-off of some of the smaller diameter tree clumps is still occurring in here.

## ROAD 651

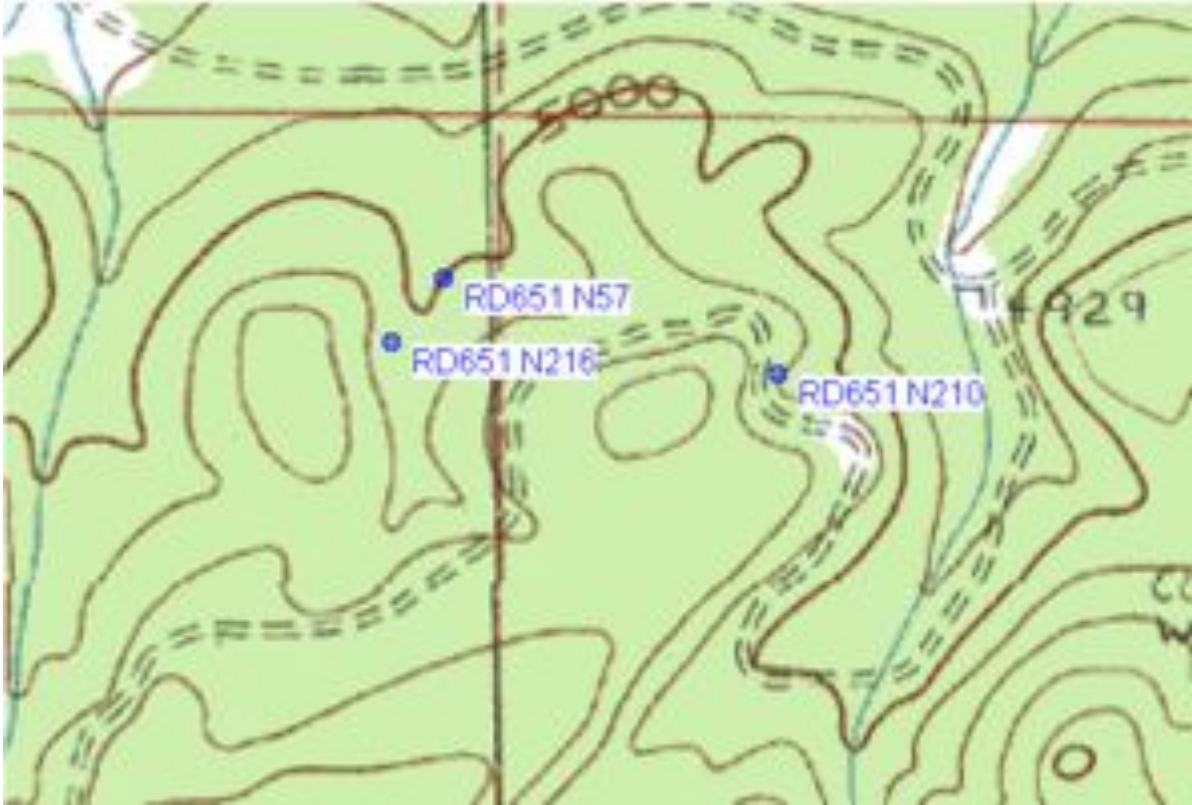
RD 651 <sup>30</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994	57	7/5/94	N	S	3	
1995	57	4/25/95	Y	S	3	
1996		5/1/96		UNO		RTHA nesting in adjoining stand
1997		4/29/97		UNO		
1998		5/7/98		UNO		
1999		5/15/99		UNO		
2000		4/25/00		UNO		
2001		5/29/01		UNO		
2002		5/10/02		UNO		
2003		5/9/03		UNO		RTHA aggressive in stand
2004		5/6/04		UNO		
2005				DNC		
2006				DNC		
2007				DNC		
2008		5/30/08		A?		
2009				DNC		
2010		5/6/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

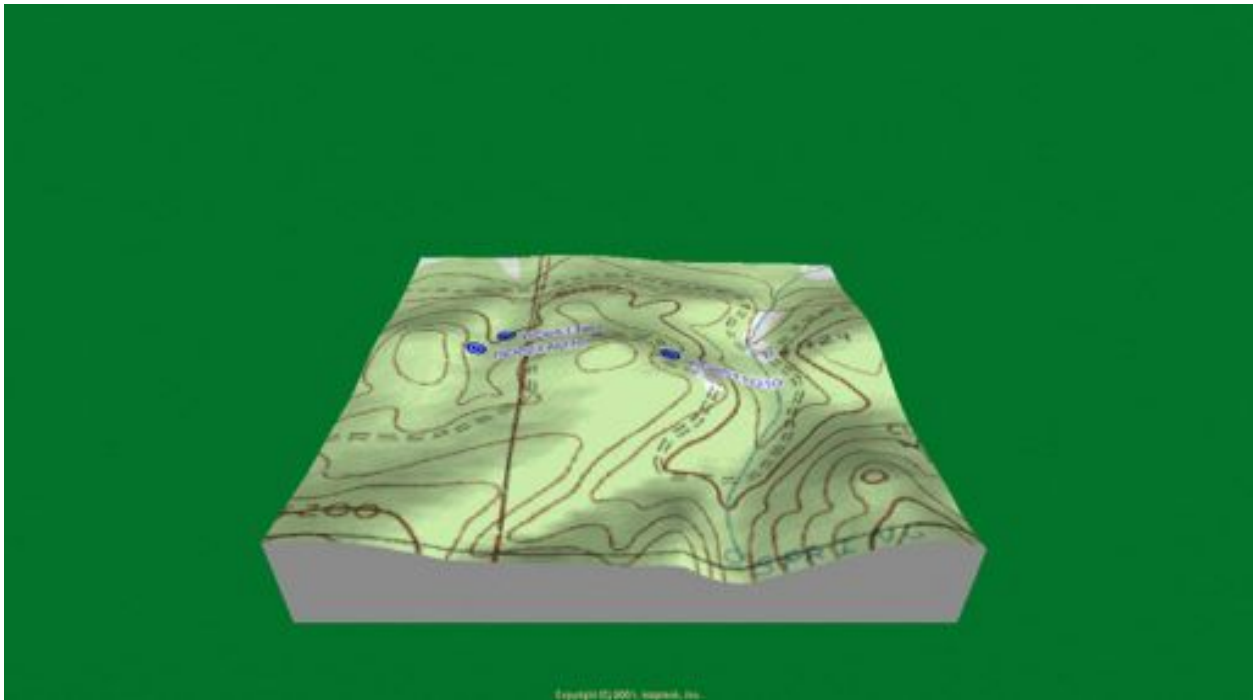
While performing the original grid-called surveys in 1993, aggressive goshawk activity was observed here, but a nest site was never pinned down. However, since this part of the forest was undergoing a large timber harvest planning, a PFA was established roughly in this area. It wasn't until the next year that a nest site (#57) was found.

The draws, running in a roughly SW-NE direction, that converge onto Road 3790, provide suitable habitat for nesting goshawk and seemingly have continual usage although I suspect that all alternative clusters have yet to be discovered. Several years goshawk were seen and/or heard but the nests could not be found in that particular year. In addition, having not checked this territory for some years, when searched again in 2008, a new nest (#216) was discovered near #57 and apparently had been used sometime during 2005-2007.

These draws that run along Rd 3790 contain 4 known territories (RCB, FSK, RD651, and SHTT) and the distance between the nest clusters averages around 4500 feet. This represents a tighter spacing of territories than observed elsewhere on the Malheur. Perhaps there is some component of the open Bear Valley land directly to the north that influence nesting distances (see Fisk Territory for this discussion). Or, perhaps there is a more fluid pattern of usage of this "mega" territory that we cannot discern yet.



*North up*



ROAD 651

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
ROAD 651 –57	TAG	4998	PSME	15	242	70	244	10 to NW
ROAD 651 –210 (old historical)	TAG	5060	PSME	26	180	40	310	15 to NE
ROAD 651 –216	TAG	5037	PIPO	31	162	70	324	15 to NE

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
57			A	A	I	I	I	I	I	P
210				I	I	I	P	X	X	
216										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
57	P	R	P	DNC	DNC	DNC	P	DNC	P	X
210							X			X
216							I		I	P

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)**= 458 acres established according to FS records.

### Recordings

In 1995- Female adult vocalizations

*road 651 95 Jul1.mp3*



## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### ROAD 651

#### 1994

Represents "Manuel's" (*name of FS seasonal that year*) bird that PFA was done in 93 but no nest was found.

Directions: Rd#3790 to road#651. Go up 651 0.9 mi to green/black flag on N side of road. Bearing of 165 deg. walk about 175 paces down drainage to nest. As start from road, in about 20 paces, there is an opening with large fir stumps. From here, follow the grassy, well traveled game trail down drainage. A green/black flag hangs from a branch bent over trail, about 40 paces past this is the nest tree to the right (E). DF clump of trees, nest is in one of these-a 12-15"bdh

18-Jun-94: Sonya Daw and Sue (*member of her field crew from OSU*) did stand search trying to find nest of goshawk that Sue had picked up from doing transects. Searched stand with 1 adult flying in area, but did not find nest.

05-Jul-94: 1430: Found nest #57 in same area that was searched before. 1 adult vocal in area, 3 nestlings on nest @ 40+ days old. 2 flew off and 1 flew just to a branch above nest. This represents "Manuel's" goshawk that PFA was designated for but nest was never found.

#### 1995

25 Apr: Walked into nest #57, lots of down on nest and could see what appears to be tail feathers of an adult low in nest. Assuming adult goshawk incubating on nest. Another adult goshawk flew close overhead while I was in the drainage. There is an old nest (*now #210*) in good shape right along road #651 as you are approaching the drainage to #57. This old nest is in the drainage to N of road right at the hairpin turn that is a large gravel area (approx. 1/8 mi. before the #57 drainage).

17 JUN: Walking in for nest check. I can hear beg calls from the road. No adults at nest but 3 chicks, 2 @ 14-17 days and 1 @ 13-14 younger. No recordings made because no adults showed up. I waited 15 min. with scope and walked 2 times right to the nest, but no response. I had a feeling that she was around and watching but she is very un-aggressive. Did not hear any food exchange or male voice, so male was way away hunting. There is a good OP right along game trail by the nest. Will come back earlier to observe next time.

1 JULY: In for 2<sup>nd</sup> nest check and try to get a recording. 3 chicks still, 1@ 28-30 days and 2@ 32-34. Adult female was near nest when I arrived, she flew out to me and called 1 time. So got first recording of her alarm. She has no bands. She did not call more than that and did not stoop at all. I was within 10-15 m while recording her shooting up at her in tree top. I was within 30m of nest. Did not collect pellets at this time.

11 JULY: In to collect pellets. One chick still at nest and saw one other fly away and call down drainage. After a while, the adult female flew in and started calling and stooping. Of course, I did not have any recording equipment with me so I did not get a 2<sup>nd</sup> recording of her, sigh.

#### 1996

1 MAY: In to do first nest check. Nest is unoccupied. Old nest along road as you drive in is also unused. Limited search at this time- no goshawk.

14 MAY: In to do first with caller. It is overcast, rain on-off. Spent 2.5 hr calling stations in surrounding area of #57. Thought I saw a goshawk fly into the stand at the nest area when I was calling to the SW of nest. Went back to call and search but no response. I will make another call day on lower road #3750 where goshawk seemed to be heading and also around nest again. It essentially stopped raining but it still may be a little early for a goshawk response.

15 JUN: In for 2<sup>nd</sup> calling of area. Called the nest stand again – no sight /sound of goshawk. I did get a RTH in the area that I thought I saw a goshawk fly into last time here. So, will call this territory unocc. It could be utilized by goshawk this year, but the ID on the bird I saw flying is not good, it could have been a RTH.

#### 1997

29 APR: 1530 Checked nest and it is unused, but still in good shape. The old nest along the road coming in is still up also. No sight/sound of goshawk

27 MAY: 1100 Walked the drainage of N57 in the pouring rain, did not use the caller. Nest unused and no goshawk seen.

*Did not visit/check again this year.*

### **1998**

7 MAY: In for initial check. Road is blocked by down trees, will be a long walk into nest stand. Walked area from the old nest just at the curve in road, down through to the meadow area to W of nest #57. Old nest is almost gone now. N#57 is still good but unused, no sight/sound of goshawk.

*Did not visit/check again this year.*

### **1999**

15 MAY: In for initial check. Nest #57 is in poor shape and will probably be gone soon. There is lots of deadfall in this drainage now. Old nest along road is now gone. No sight/sound of goshawk.

15 JUN: In for 2<sup>nd</sup> search and calling area. Called route kept in the GPS and marked all the nest (2) in area. I also marked the RTH nest and was called at by her. No sight/sound of goshawk. Unoccupied.

### **2000**

25 APR: In for initial check. Could drive the road into nest this year. Old nest is gone, #57 is unused. Walked the stand around to W and up along the spring drainage but no sight/sound of goshawk. The marked RTH nest of last year is gone, probably blew down.

25 MAY: In for 2<sup>nd</sup> search and called area. Started at the meadow where old RTH nest was, walked up this drainage and over along road 651 on top of nest area, over to old goshawk nest at curve in road, then came back down to the lower road to car. No sight/sound of goshawk. Unoccupied

### **2001**

29 MAY: In for initial check. Nest #57 is mostly gone now and unused. Walked a little around the immediate stand but did not take much time here.

*Did not visit/check again this year.*

### **2002**

10 MAY: In for initial check. Nest 57 is almost gone, still, but unused. The deadfall has gotten worse and this drainage has a much more open canopy to it now.

*Did not visit/check again this year.*

### **2003**

9 MAY: In for initial check. Check nest and unused, but interesting that it looks rebuilt. Last year I had it marked as "partial" for 2 years in a row, deteriorating. But it looks stouter with greenery on it and a flat platform top again. Not used though. The RTHA are in the nest just over the ridge, as they were a few years ago. Both of these adults were agitated and calling as I walked this draw. It was cold so I did not spend a lot of time looking for their nest. It is possible that a goshawk started to rebuild and take this nest, but was chased off by these RTHA. I saw this happen at RSS in years past. Or perhaps the RTHA started to use this goshawk nest, but switched- or some other bird did this. I doubt that a goshawk is here anywhere with these aggressive RTHA here.

11 JUN: In for second called search. Combined search with that of RCB (see those notes). Walked a track up Shirttail Creek, into the parallel draw to N58, up to top ridge that is the DOG unit, back down road 651, to the old X nest by the road and gravel pile. No sight/sound of goshawk. I did hear the RTHA chick beg calling at Rd 651 area. Adults called at me when I just got past the nest area, they must have been off hunting in AM when I started calling. Actually, it is very quiet in the forest these last few days. Not much bird noise at all, robins mainly.

## 2004

6 MAY: In for initial nest check. Unused and nest partially gone. I walked briefly down draw and around back to car, but no sight/sound of goshawk.

1 JUN: In for second called search. Out with Jade (*German Shepherd dog*) on first day of camping out in Burntcabin route. See photo 2001-156 in checking the good areas around nest site. Got on bike and road up 651 calling stations all along. No RTHA in this area this year were the old nest was. I walked good habitat at meadow area to S of old nest site, nothing seen or heard. Walked a little up most of draws that looked good off of photo and around but no sight/sound of goshawk. Will have to call this Unoccupied.

## 2005

3 MAY: Tried to get into site but large tree blocking road in.

*Did not visit/check again this year.*

## 2006 and 2007

*Did not visit/check these years.*

## 2008

30 May: Out with TJJ (*Ted Fremd*)- more sun today. Hasn't rained heavily since last night, now about 62 deg, light overcast and showers. Had lunch @ camp on road junction above Fisk area and will drive down road 3790 to RCB than work back along road with caller. May try a few calling stations. TJJ left me at road junction with #600 to call stations back toward east along road. TJJ saw a goshawk fly over road into RD 651 sites. So will search this area. ACTIVE. We searched the draw where #57 is and found a new partial structure just up draw from #57. (*now #216*). Since I have not checked this territory is several years, a new nest was built and apparently used at sometime. Didn't find a nesting bird though in our searches. They are utilizing this territory somewhere though.

## 2009

*Did not visit/check this year.*

## 2010

6 MAY: Unused, Walked the stand where nests were but no sight or sound of goshawk. I did not drive over to check the stand of the Old nest site (*now #210*) for it has been gone many years now and too much snow on road yet.

*Did not visit/check again this year.*

## 2011

14 July: Tagged and measured all known trees. No sight or sound of goshawk while in these stands. The stand of #57 is well deteriorated now, most of the small diameter PSME are down and dead. The immediate area of the nest tree is very open now.

## **Middle Route**

**Coal Pit (CP)**

**Geary Creek (GEA)**

**Herberger Springs (HS)**

**Mason Springs (MS)**

**Old Growth 238 (Swick Old Growth) (OG)**

**Pearson Creek (PEA)**

**Starr Camp (STR)**

**Vance (VAN)**

## COAL PIT

CP <sup>48</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997	99			S/F		Found by FS personnel
1998	126	5/6/98	Y	S	2	
1999	131	6/9/99	N	S/F		3 Nestlings
2000	126	4/18/00	Y	S	2	
2001	131	5/1/01	Y	S	3	
2002	131	4/29/02	Y	S	3	
2003	126	5/12/03	Y	F		
2004	165	4/27/04	Y	S	2	
2005		4/22/05		A		Possibly in #211 but not known
2006	183	5/1/06	Y	S	3	
2007		5/7/07		UNO		
2008		5/5/08		UNO		
2009		6/8/09		UNO		
2010	233	5/3/10	Y	S/F		
2011	233	4/29/11	Y	S/F		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Forest service personnel discovered this territory on a random search late in 1997; and since this area is only a mile above my home just within the FS boundary, it has been visited each year. It also appears as one of the more highly used territories with an 80% usage rate for the 15 years of monitoring.

The forest structure here is a mature mixture of large trees and complex understory and



has exhibited little natural deterioration through the years, but is being impacted by human incursions. One immediate and escalating impact is from a two-track that runs into and along one side of this territory. This has received heavy and inappropriate 4-wheel ORV traffic and constitutes an illegal entrance into the Ingle Creek roadless area where vehicular traffic is prohibited. This 2-track is not an official roadway and erosional damage has been

View of Nest tree #183 and area





increasing each year. It has also expedited the intrusion further into the nest stand that seems to be the result of woodcutters. If it could be enforced, it would be most appropriate to install a road closure at the junction of Road #49.

In 2003, this is one of the territories where I tested the early detection procedure as proposed by Penteriani (1999). (See description of method in Penteriani Listening Test section).

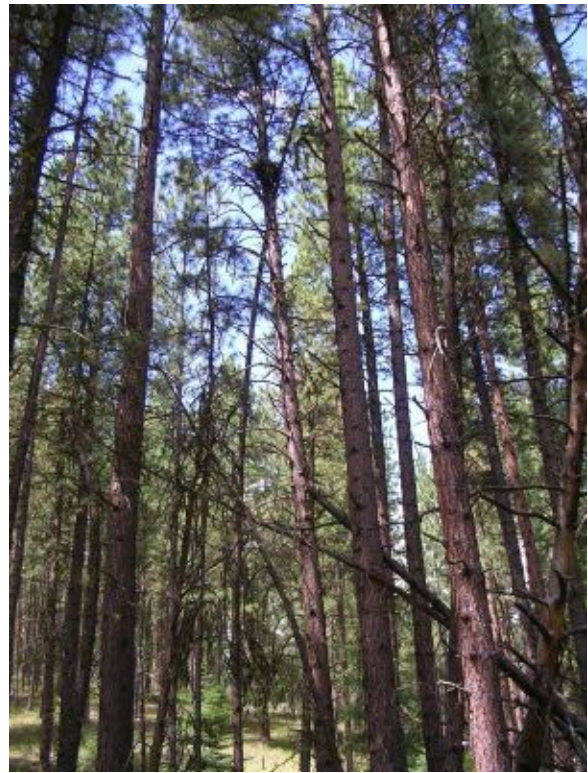
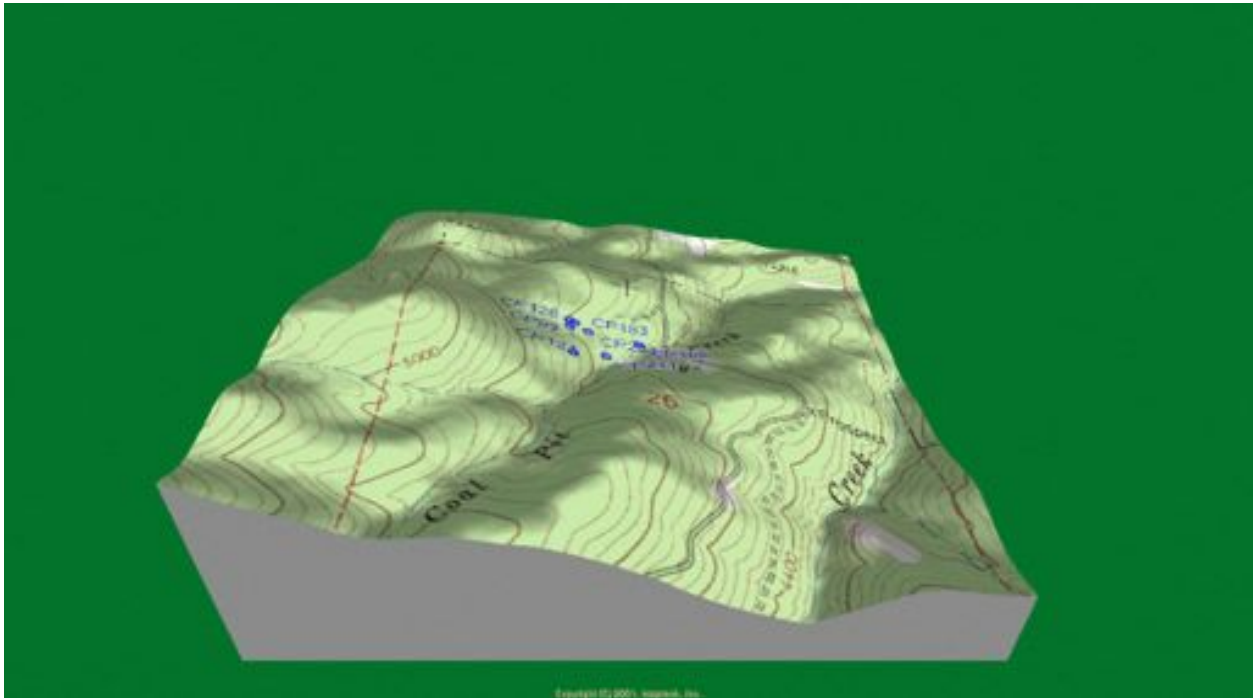


Photo top left: Nest tree #126  
Photo bottom left: Nest tree #211  
Photo above: Nest tree #233



*North up*



COAL PIT



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
COAL PIT -99	NO TAG *	4633	PSME	19	SE	65	320	10 to NE
COAL PIT -126	TAG	4636	PIPO	27	92	40	360	12 to E
COAL PIT -131	NO TAG *	4642	PIPO	nd	nd	nd	334	20 to E
COAL PIT -165	TAG	4499	PIPO	34	nd	nd	40	20 to SE
COAL PIT -183	TAG	4621	PIPO	35	90	60	10	20 to E
COAL PIT -211	TAG	4554	PIPO	23	nd	50	360	20 to E
COAL PIT -233	TAG	4590	PIPO	19	90	65	310	10 to NE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
99						A	X			
126							A	I	A	I
131								A	I	A
165										
183										
211										
233										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
99					X	X	X			X
126	I	A	I	I	P	X	X			X
131	A	I	I	P	P	P	X			X
165			A	I	P	P	P			X
183					A	I	X			X
211				A?			X	X		X
233									A	A

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 423 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### COAL PIT

#### 1998

6 MAY: This territory found late last year and this is the first time I have been here. In for initial nest check. Looked for the nest marked on Forest Service sheets but it is gone. Found new nest just to W of this area on the ridge. Large PIPO with female on nest incubating. Nest is out at the end of a lower branch amongst the pine needles. Directions written in notes but nest and area has since been GPSd. This new tree is in a small flatter-open space with more large PIPOs around.

17 JUN: In for first nestling check. Success with at least 2 chicks in nest still very young but could not see them well. No sight/sound of any adults.

4 JUL: Final check. One in nest and one branched already so 2 successful. Again, no adults present.

#### 1999

9 JUN: Journal says that this is my second search so I must have checked the nests earlier perhaps on one of my runs and did not remark on it. Today though I found the new nest. PIPO is on the edge of the stream drainage that runs down through here. I was calling stations, but never got a response to the caller. I spotted the nest with down on rim with 3 nestlings in nest. Never saw or heard any adults during this whole time. I marked directions to nest, and have since GPSd the route and OP. This is SE and on the stream edge away from the original nest sites.

7 JUL: final check but late. All had already fledged but I could hear them in the stand begging and with the condition of the nest I will call this successful.

#### 2000

18 APR: In for initial nest check. N 126 is occupied with female on nest incubating. Had heard a faint wail call as I started to walk in, but it could have been a mimic also.

10 JUN: nest check after a run. It had been a spell of cold rain/snow lately. She was on nest but sitting to the side and rim showed a lot of down. So, chicks must be older.

29 JUN: final check. 2 chicks still in nest @ 32 days about- both sleepy. Female was in the stand and stooped us 2x (*out with S Herve*). SH got photos of adult but not of the nest. I am surprised that they are even still here for she started incubating early.

#### 2001

1 MAY: In for initial nest check. Female on N131 incubating. She was calm and no activity seen. Walked to check on other nest sites and nothing seen. Out with dogs on run and it was my favorite Spring weather- some sun with breaks of snow/hail very clear.

19 JUN: In for nestling check. Out with L. Vella today. 3 chicks in nest I think @ 17-20 days. Quiet as we walked in, but female stooped and called at us soon enough. No bands on the adult and she looks to be a very mature older female.

10 JUL: Final check. 2 are still in nest @ 32-34 and one already branched @ 40+. It appears that I did accurately age them on the first visit.

#### 2002

29 APR: In for initial nest check. Female on N131 again incubating. One month ago, while running up #850, I saw an adult goshawk hunting and heard a call from along the road but below nest area and road 49. After reading Penteriani's paper on more frequent goshawk calling during courtship I think that the listening experiment of Feb-Mar may be of value.

24 JUN: In for nest check. Female was very aggressive this time. Could see one chick head in nest @ 22-25 days? but could not see into nest well. These seem younger than others I have checked so far. Will have to return to get a count.

3 JUL: Final check. 3 chicks in nest all @ 32-34 days. One is standing on the rim while the other 2 are lying down. Knew adult was in the stand but she was not aggressive this time. She did not show herself all the time it took to really scope out the nest. But as I was walking, well away from the nest, she came in for one close stoop and called at me, that was all. Perhaps just saying goodbye for the year- as was I.

## 2003

9 Feb: Listening exp Site A1-CP. Out with TJF (*Ted Fremd*) before dawn to sit and listen. When first arrived heard a single note call= Pygmy owl. Near 0700, nuthatches, robins, ravens, pileated WP, STJA. It was a very cold am from 0624 to 0800 close to -6 to -10C and 1-2 inches of snow on ground. No goshawk heard. NOTE: In late Feb while running up 49 road I saw adult goshawk flying in Laycock drainage. Ted says that he heard on up here during Feb also.

19 MAR: : Listening exp Site A2-CP (second time, same point). 0525 to 0600 and warmer nearer high 20-30F. At 0530 a goshawk called at me. I had no sooner settled in when an alarm call came from behind- from where I had walked in. It was a slower cadence call (male?) and definitely an alarm at me. It was not a chirped call like that at Starr. I left immediately and went back to the truck on road 49. I waited and heard the other plethora of birds start up, but not the goshawk again. It was a full moon so perhaps it is bright enough for them to start before sunrise. This is by far the earliest I have been in a territory so we'll see how bad a disturbance this will be. These goshawk have been here since late Feb- for I have seen goshawk flying up here on my runs occasionally.

12 MAY: In for initial nest check. Yes, female is on N126 watching as I was walking up, but when I finally located the nest I was close and she flew off and called at me. So these guys have been here early, will have to check them first of JUN. There has been a lot of motorcycle tracks on the 2 track that leads in here and runs by stand. The nest itself is a little protected, but there has been a lot of activity right up here more than usual. I should follow my instinct better, learn to trust it. I had that feeling that they would be in this nest, yet I checked the other one first.

17 JUN: In for nest check. Failed- nobody home at all. Searched ground, no bodies nor egg shells. No adults in evidence and nest did not have any down or wh/wa on it. Failed early due to weather, predators, or maybe the eggs were addled and never hatched (*or perhaps all the activity that I noticed here in May*).

## 2004

27 Jan: approx. 1400 on walk with pups, I heard a kek call coming from the nest area along the creek. I was on Rd 49 walking back to truck. I had just spooked a pair of pileated WP that flew across the road here at the stream crossing. Possible that it was a very good mimic, but we'll see.

27 APR: In for initial check. Spent 1:07 hr @ 1 mi. Occup. New structure somewhere down slope from N131. I started search toward last side and no known nests used. As I was walking by N126, I heard a faint beg call. I walked past 131 and then up stream into area that I have been meaning to scope out. Nice riparian area. I came back down and when below 131 in nice PIPO area I saw a goshawk fly off. I continued walking in that direction and got called and stooped by male and female. I walked through trying to see a new nest, but didn't. It was too early in season to stay and poke around- they might still be laying with both out of the nest- so I will come back. The area is toward stream at the 1<sup>st</sup> Y-junc. As you walk in up two track. Need to search down slope from N131. I hope I did not disturb them, but they both were already pretty territorial.

16JUN: In for nest check. Out with Chadski (*friend that wanted to see a goshawk*) this year. 2 chicks still young @ 14-17 days. We walked in and started searching and she came up to call at us. It took a little while to find her nest. It is smallish in a medium PIPO straight in from Y-junc. Marked "OP 04" for now (*now #165*). Watched a long time, for she called and stooped briefly at first but then quieted. Chicks never did move much. Female has brown eyes, still a 1-2 year old bird.

25 JUN: In for last nest check. Succ with 2 chicks @ 32-34 d. Both standing in nest watching. I heard female give 2 beg calls away in stand but she did not come in to call or stoop at me this time. I did mark the nest tree "CP 04" and it is right in sight of the road 49 at the turn. Walking in from 49 would have been easier.

Note: During first part of Aug, both TJF (*Ted Fremd*) and I have seen and heard the juveniles here on our morning runs.

## 2005

22 APR: Weather-Sunny today after a full day's rain yesterday. High winds of 10-15 mph, cool at 40-50 deg- muddy roads and ground still. Occupied - female was perched and gently kekked at me as I approached nest #131 area. I did not continue on to

see nest but that is where they are or at least close to this nest. She did not flush or stoop- just a gentle warning. Other nests are in similar condition as last year. Heard a good GRJA mimic here first before she herself called at me.

21 JUN: Out with TJF. Not there!!! The nest I thought she was near when she called at me is only partial and no new nest found here. TJF searched the stand along the draw and I went to check on all other nest areas but nobody seen or heard. I did find a new (to me) nest (*now #211*) but can't tell if it is an old partial nest or a new partially built and abandoned nest. Not enough info to say failure here for I did not see female on nest incubating. Perhaps this was an early failure or just not started at all when I saw her here??? Call it ACTIVE at least.

## 2006

1 MAY: In for first check. Occupied in new nest that is right by #126 and old #99. Female on nest incubating (*now nest #183*).

21 JUN: Successful with 3 chicks at about 28 days. All nest checked yesterday had chicks at about 25 days, the youngest was about 17-20 days. No adults present or heard. Didn't directly mark the tree yet but it looks almost exactly in line with #99, and tree is now a PIPO, only about 35m? from other nest #126 also.

## 2007

7 MAY: checked stand while on a run and no sight or sound of goshawk. No known nest site being used.

7 JUN: Called stations in stand but got no response. Walked up the ORV trail that goes into Ingle roadless area, but no response to caller. No sight or sound of goshawk.

## 2008

5 MAY: In for first check. Walked the stand with Curly (*German Shepherd dog*) no sight or sound of goshawk. But circumstantial evidence that it is probably occupied due to 2 times hearing a good GRJA mimic. Most nests gone now. Walked up stream draw, up road on SSE side of Coal Pit CK and no new nests found.

*Did not visit/check again this year.*

## 2009

8 JUN: In for first check. No sight or sound of goshawk. Most nests gone now. Lots of new bike and ORV trail being made in this stand now! The off-roaders are mucking the road up more.

*Did not visit/check again this year.*

## 2010

3 MAY: In for first check. Occupied in a new nest (*now#233*). Male in stand and came out calling at me as walked in. Female on nest. Nest is in draw below original #99 lower down by the junction of the 2-tracks that run in here. Small size dbh tree, but did not mark tree at this time.

11 AUG: Out with TJF for data collection of trees. This year's nest is quite messy, full of down and lots of white wash on ground. I would say nest was successful with at least 2-3 chicks by the looks of it. While measuring trees, heard juvenile beg call 2 times and saw an adult circling over head. Took pictures, measurements, tagged trees. All GPS markers are good except on nest #131- that placement is not aligning with my memory of where the tree is. This site was marked in the early years of GPS units and it seems off. Have to adjust the point for this tree- no final measurements for this tree.

## 2011

29 APR: Weather note: Notable this year in a long cold wet/snowy spring. All of April has been cold and snowy. Snow pack still high and probably access to many areas will not be possible until late May/June. Historically- to put it into a time frame- this last week was the worst for tornadoes in this country- 164 touched down in a swath in the south- Tuscaloosa, AL. the worst. Yes extreme and intense weather patterns are starting to show themselves!

In for initial check. Occupied- female incubating on last year's nest- #233. It has been cold and a good snow storm in last 24 hours. Actually in last 2 weeks, only have been about 2-3 warm days. But glad to see that this weather has not put the goshawk off too much. She stayed on nest and watched us (*Ted Fremd*) but we were watching a little too long for her, she came off and

called at us and we took off so she could get back on the nest. We had been up on road #850 on our walk yesterday and TJF (*Ted Fremd*) saw a goshawk then. I thought that it might be the male CP bird hunting, and I guess I was right.

End of Aug- went back into stand to finalize all measurements of trees and area.

## GEARY CREEK

GEA <sup>33</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995	76			S/F		FS personnel found nest
1996		4/24/96		UNO		
1997		5/4/97		UNO		Discovered extent of cluster to West of #76
1998	124	5/22/98	N	OCC		GRGR in #123- FS found new goshawk nest late in season
1999	129	5/11/99	Y	S	3	
2000		4/18/00	N	A		Possible in nest #151
2001	151	5/31/01	Y	F		GRGR in #124
2002		5/7/02		Usurped		GRGR in #129
2003	124	5/12/03	Y	S	3	
2004	129	4/27/04	Y	S	2	GRGR in#124
2005	172	4/22/05	Y	F		GRGR in#124
2006		5/31/06		UNO		
2007	129	5/7/07	Y	S	2	
2008				DNC		
2009		5/28/09		Usurped		GRGR IN #124- 2 chicks
2010	234	5/16/10	Y	S/F	(1juvenile observed)	GRGR in new nest #235
2011	234	5/5/11	Y	S/F		GRGR in nest #129

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory is most notable for supporting Great Grey Owls (GRGR) nesting alongside goshawks. Eight out of the 16 years of monitoring, GRGR have nested here. In six of these years, the territory was shared by these two species sometimes in very close proximity (adjacent nests less than 600 ft. apart). In two of these shared nesting years (2001 and 2005), the goshawk were found nesting not in the “preferred nest areas” but had moved further away into what seemed to me to be less suitable habitat (being a more open canopy, lower complexity to the understory). In these years, the goshawk failed though the cause of this is unknown (the presence of GRGR could be causal or it could be just coincidental). There were other goshawk territories where GRGR interactions were observed (see Luce Creek (Murderer’s Creek Route), Herberger Springs and Old Growth 238 (Middle Route), Snowshoe Creek (Izee Route)); however, this particular territory had the greatest continued use by GRGR.



Photo of Nest tree #76, first nest discovered here.



Photo left:  
Nest tree #124  
Photo right:  
Nest tree #129  
Both of these nests used  
by goshawks and  
GRGR



Observations from the territory also support the notion that a much longer management timeline must be used in considering the importance of these areas for goshawk use. In

2010, the new nest (#234) was built no more than 100 feet from one of the original nests (#125) that was first found as a partially deteriorated structure in 1997. This represents about a 14-year delay of building a nest in pretty much the exact same place. Actually, nest #125 was gone by 2001 so there was no marker (i.e., an old nest for a goshawk to key on) in that area for 10 years. Having observed this phenomena in several of the territories, the time limits of occupancy imposed by FS regulations is a ludicrously short time frame (i.e., reconsidering these nest clusters for timber management activities if it has not been shown to be occupied in 5 years). Reynolds et al. (2005) reported that an 8-year delay occurred between egg-laying years on territories in northern Arizona; yet, I think this is even too short of a time frame (see Discussion Section).



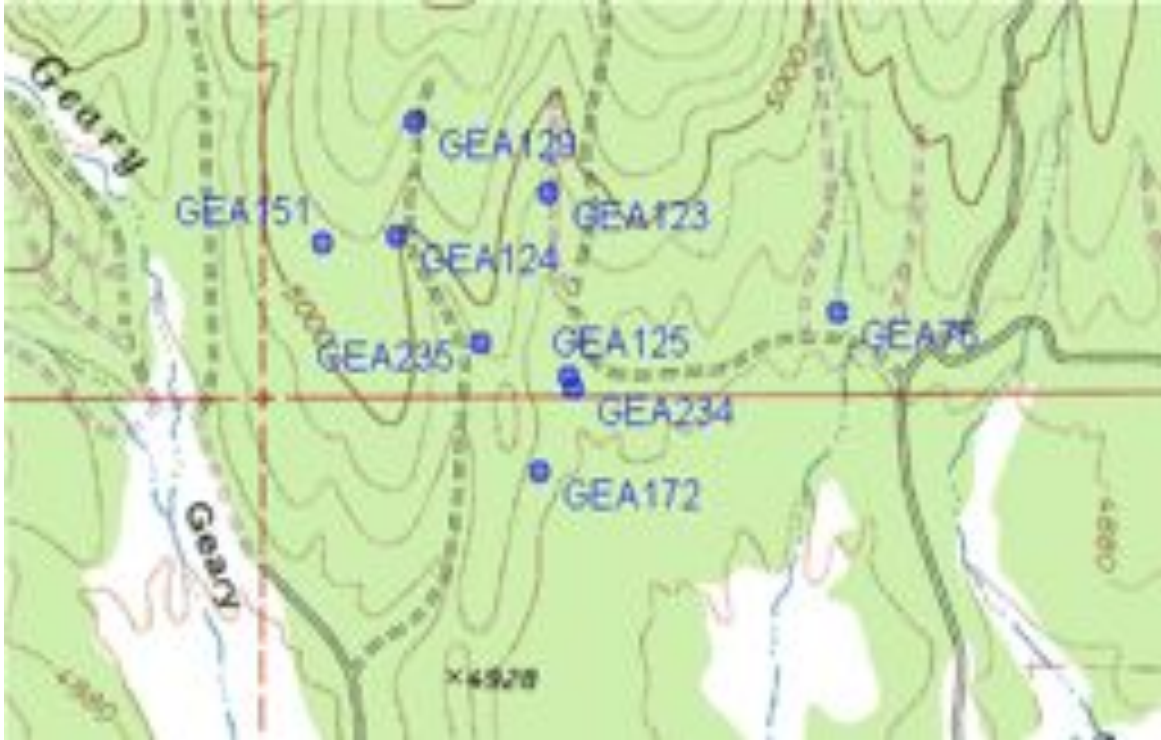
*Note: In 2003, juvenile feathers were collected at this territory for a graduate study on isotope analysis. (See Smith and Dufty, 2005).*



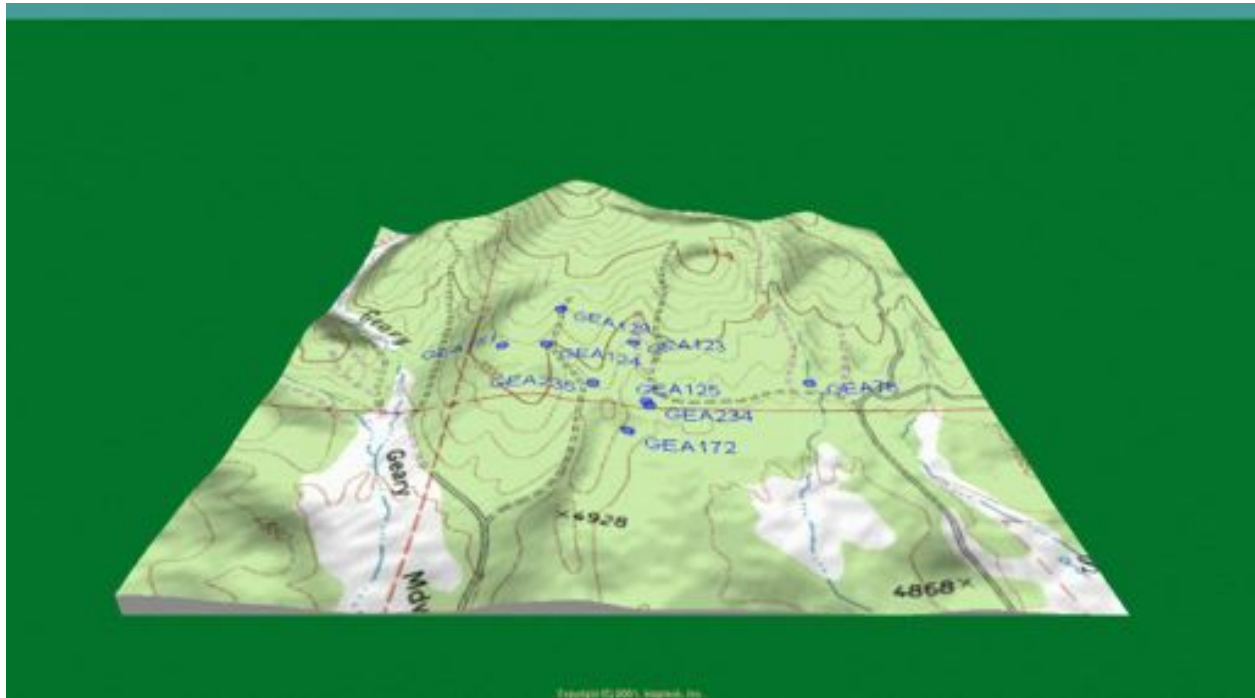
Photo left:  
Nest tree #151  
  
Photo right:  
Nest tree #234  
  
Photo middle right:  
Nest tree area #172







*North up*



GEARY CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
GEARY -76	TAG	4928	PIPO	26	120	50	flat	na
GEARY -123	TAG	5000	PIPO	38	140	70	260	5 to S
GEARY -124	TAG	5046	PIPO	30	240	60	195	18 to E
GEARY -125	TAG	4921	PSME	21	135	30	flat	na
GEARY -129	TAG	5100	PIPO	28	158	60	40	15 to SE
GEARY -151	TAG	5058	DD PIPO	22	324	60	310	9 to W
GEARY -172	TAG	4926	PIPO	24	186	50	210	11 to SE
GEARY -234	TAG	4817	PIPO	27	60	70	180	2 to S
GEARY GRGR-235	TAG	5000	PIPO	27	116	60	290	16 to SW

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
76				A	I	I	I	I	I	X
123						I	U	I	X	
124							A	I	I	U
125						I	I	I	I	X
129								A	I	I
151									A?	A
172										
234										
235										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
76						X	DNC			X
123						X				X
124	P	A	U	U	I	P		U	I	P
125	Never	used		X		X				X
129	U	I	A	I	I	A		I	I	U
151	I	I	I	I	P	X				X
172				A	I	I				X
234									A	A
235									U	I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 423 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### GEARY

#### 1995

26 Jul: A. Frost (*FS seasonal employee*) had found this nest late in season. Only time I was out to see nest was this day- Icaza's (*family members visiting*) were visiting and we went to see the empty nest.

#### 1996

24 APR: In to do 1st nest check. Not used, walked the stand a little no new nest seen. Saw large silent bird fly out of stand, no good ID, could have been a goshawk.

18 MAY: Called stations up drainage and by nest. Spent 2 hr in area. No sight or sound of goshawk. It has been overcast and rainy for the last week. Started to storm again, so quit, but upper part of the drainage of nest #76 is pretty well logged out. The nest stand is the only good looking habitat left- nest still unused.

*Did not visit/check again this year.*

#### 1997

4 MAY: 0700 Checked on nest and it is unused, still in good shape. Sat by stand doing work awhile, but no sight/sound of goshawk.

22 MAY: 1100 Out with Ted (*Ted Fremd*) today. Used goshawk alarm call along the N76 drainage. No new structures nor goshawk. Walked down road#164 over to W where it leads up another drainage. Found 2 nests here. Follow road#164 to junction with road#198. Walk up 164 about 106 paces to green/black flagging along road in small PIPO. Look down into drainage to one of the largest PIPO- nest out on end of limb, classic looking goshawk nest (*now #123*). There is also a smaller nest structure in a fir right at the junction of the first short un-numbered spur road at the corner of #164. It is right along the road, to S. I thought I saw down on rim at first, but no one was on the nest (*now #125*). I had used the caller below once, so if they are late- she could have flushed off nest. My feeling is that they are here, but I will have to return in June. This could be last year's nest also. I should have walked over here last year- this is where they were, but I missed them. Ted saw a goshawk circling high over us as we walked out and it flew off high to SE.

4 JUL: In to check nest, but still no sight/sound of goshawk. Nest looks the same with no down now. Maybe active but never did see any birds here. This was probably last year's nest.

#### 1998

29 APR: In for initial nest check. (Out with Jade (*German Shepherd dog*) and Ted (*Ted Fremd*)). Original N78 is unused but still up. Walked over to nest drainage and found GRGR in the large PIPO. The nest in the fir still up and good and there is a bit of down on the base of the nest. Found a downy feather (GHOW?) on ground but no sight/sound of goshawk. Ted had been at the truck while I was gone and he said he thought he heard a wail call. I walked up past N76 to search stand again. On way back down I heard a flicker squeak which could have been what he heard. But it is enough to come back and call this stand and those to the E along Allen Ck.

24 JUL: Out to check a new nest found by FS wildlife bio – Libby. This is even further to W of drainage I was searching. Territory Occupied and saw 1 adult goshawk as I came in, but apparently all had fledged. I labeled and GPSd all the nest sites at this time. N124 is new PIPO found up from road# 945 from junction of #4955. N123 is large PIPO that is taken by GRGR.

#### 1999

11 MAY: In for initial nest check. Had talked in the AM with TJF (*Ted Fremd*) about my "fallow field" theory, that goshawk let certain habitats rest through years- wanted to graph this out with seeing how the nest sites shifted through the years. I thought that this is a way to not over exploit an area (see idea file). Found new nest, N129, just N along the two track from last year's-

N124. Large PIPO right along the W side of road and female incubating on nest. I ran a track in GPS- "99 Geary 11 May"- and checked all other nests. All are unused but still up and in good shape.

22 JUN: In to check nestlings. 3 chicks all about 17 days. Did not see or hear any adults, all quiet. I went right under nest to get a good gps reading and still all quiet.

7 JUL: Final check: 3 at 36-38 days. One branched already that called at me as came in. Saw a shadow that flew off in stand that could have been the adult, but not a good view of it. No vocals at all.

## 2000

18 APR: In for initial nest check. As finishing my route, walking out by N124, large goshawk assumed it female with fluffy under tail coverts was perched on low branch watching me. Took off when I was about 20 feet from her and flew off to W. None of the nests looked used, so it could be that she was early and will take 124 or she has built a new nest in this area. She was not concerned it appeared, but I will wait to come back until late May to find them.

*Did not visit/check again this year. That is why I did not find the new nest site until next year (#151).*

## 2001

12 MAY: In for initial nest check. Checked the W drainages, and GRGR is incubating in N124. She stayed put and just watched. No goshawk seen. Most of the other nests are gone now in the E side drainages, just these two up road 945.

31 MAY: In to check GRGR and found a new goshawk nest X. The owl was flying in stand and perched to watch me but the nest was empty. The chicks have fledged but did not see them. I heard a goshawk beg call when I first got there off again further to W, near top of ridge. Searched to top and found nest in a large old snag PIPO. Surprisingly, it was marked with green/black flagging- old tape so must have been found in years back?? Also found another structure in a fir thicket up on this ridge. This is a large area that has been used by goshawk through the years! This ridge drops down in to Geary Meadows. When walked back up hill, goshawk was standing on nest rim watching Curly (*German Shepherd dog*) walk under nest. She was not agitated and we left. This is the second year that goshawk and GRGR are nesting here together. The GRGR hooted softly at me 2 times while I was near her.

19 JUN: In to check nestling. (Out with L Vella) Failed- we found eggshells at base of nest so there was a hatching, but nest is now empty and not much wh/wa or down on nest rim. We had a goshawk in the stand that flew over and gave a beg call going down into Geary Meadows. We searched that way but found nothing. So again, this goshawk was near a GRGR nest, like at Herberger Springs, and possibly was eaten?? They failed in some way.

## 2002

7 MAY: In for initial nest check. GRGR again is in area and N129. Adult on nest watching me. Walked all that areas around nest stands but no sight/sound of goshawk. Possibly an old structure up from 129 and also did not find the nest structure in fir thicket on ridge top. Checked on N76 to E and it is still gone and no new structures seen in this stand.

29 MAY: Out with Matt Smith to look at GRGR. GRGR has 2 chicks downy and hunkered down in nest. The adult female? flew in and perched on tree right within sight of us. Not real concerned as we watched. She emitted soft contact calls to chicks so chicks knew where she was. She even fell asleep at one time. We walked more of the stand where goshawk was last year and nothing new seen. Drove up into the upper Geary Meadow area, but not real good habitat here- lots of logged areas.

## 2003

12 MAY: In for initial nest check. Walking in from N76 side and search to W into all the other nest stands. N124 Occupied. Female on nest incubating. She stayed quiet and low on nest. This is rebuilt and was used 2 years ago by GRGR- And last year a GRGR was in stand nest up the road from this.

17 JUN: First nestling check. 2 chicks @ 19-22 days and 1 older @ 22-24? Days. Female in stand watching and did not come out until I was very close to tree. She surprised me with a stoop and call. Then perched in the trees and watched.

23 JUN: Students from Boise here to collect feathers from juveniles. Rhonda and Adam Smith met me at Starr CG and I took them to Starr and Geary. Spent 1 hr and 20 min at nest. Adam climbed up to nest to lower chicks down to us to band and take samples. 2 of the chicks jumped the nest here and we had to run them down to put back up. They did not appear to be hurt. Female was aggressive and stooping and Adam asked if we could try to trap her. He had a 3 net system set up and a stuffed GHOW with mechanical head and tape call of owl. It took her about half hour to get agitated enough and when she did hit the

net she escaped, but took off the owl's head. I had not thought that she would be fooled into this in broad daylight, but this system worked. It took a long time though, and after this is when he climbed tree and the 2 chicks jumped unexpectedly. These 2 were at about 28-30 days and a bit older than we had wanted. The adult was very quiet while we were messing with the chicks. I will check on this nest in about 2 days to see if we disturbed them too much. See pg 03-60 for other details about Adam's set up.

25 JUN: Re-check nest. 1 chick is standing in nest, looking healthy @ about 32-34 days. Probably the younger female that did not bale out. I did not see the other 2. We may have forced an early fledging. I was relieved when the female finally stooped me- she was perched across from nest and came out calling. I searched where she was to see if I could see the other 2, but no luck. A good sign that she was still aggressive and protective in stand, so I can assume that they had fledged OK. Successful.

## 2004

27 APR: In for initial nest check. Wow what a year for this territory! Goshawk occupying N129 and a GRGR in N124. These are the 2 nest that are right along the road and very close to each other. As I walked up to the first one along the road, up from the fence, I saw a tail. Had to walk past nest to see clearly- and it was GRGR. As I was watching the owl, I get an alarm call from back at the car area. Both owl and I watch as a goshawk, female I think, comes streaking down stooping at me on the road, flying right by the GRGR in nest. She went off uphill to the left. I went up and got a peak at N129 and it looks like it has down on the rim. She is off nest and aggressive so I high-tailed it out of there to not cause further disturbance. They are nesting CLOSE this year. Will have to come back to verify all this soon.

4 MAY: In for initial nest check at N76, the original nest. Nest still gone and I briefly walked in stand but saw nobody. The road closure gate is down this year.

14 MAY: In for nest check. I came in from the long way this time, and walked along the ridge to check nest instead of coming directly in from the fence. The road closure off of Rd 49 is down this year. Goshawk is incubating on N129 and GRGR still on N124. GRGR did not move off so I could not get age on owlets. Interesting to note that goshawk was so aggressive during nest building and early egg laying phase. Good to know that my entering the stand was not a disturbance at this stage in the game.

16 JUN: Out with Chad (*friend that wanted to see goshawks*). In for nest check. Successful with 2 chicks, big age difference again. 1@ 17-19d and 1@ 24d. Female was on nest when came in and oldest chick was stomping on prey item and eating. She finally came off nest to stoop, perch over us, and called, and then male arrived and did the same. GRGR nest is empty and nest not real messy. I'll say they already fledged because of the date, but don't know for sure now. She was on nest both times that I came in earlier and looked OK.

25 JUN: Final check. Successful with 2 @ 32-34 and 30-32d. Female came in to call but not stoop this time. Both chicks in nest alert and watching me.

## 2005

22 APR: In for first check. Checked on N#76 first and it is gone and no new visitors in this stand. Walked road over to other nest sites to check. Occupied in new nest that was X 05 (*now #172*). GRGR is again in nest 124. # 129 is inactive and all others nest gone! It's lucky that I heard her beg call as I was walking by N#125 for she is south of this nest in an open scrubby area with small diameter trees. I would not have looked here. The nest is small in a small PIPO not a real substantial looking nest. She was perched watching me while I was marking tree, but I did not see her until I started walking uphill away from nest and toward her. She just gave a gentle warning and stayed perched not more than 25-30 ft above me. I then walked over to check on #124 and 129, and found GRGR on 124 again. GRGR was eating and not worried about me at all- hardly looked at me. Big Girl Owl! So it looks like the goshawk has been moved out of what I think looks like better quality habitat this year.

23 MAY: Both GRGR and goshawk doing well. GRGR has fledged and I heard and saw 1 little downy grey branched on tree near nest tree- only saw the one and nest is empty. Goshawk is on nest incubating. New turnout before fence and walk down road to flags- walk straight up hill and look down line of flagged trees. Can see into nest but nest is close to trunk of tree and OP is on opposite side of this. Not real good view.

21 JUN: Looks like it Failed! Nobody on nest and no fledglings or adults. Nest has down on rim, but no white wash on ground. This is a secondary open stand, not like where other nest sites are, where GRGR was. Exposed nest really. With all this rain and possible predators, not a good sign. At this time of year, would suspect nestlings to still be here. But no.

## 2006

31 MAY: In for first check. Started at #76 gone. Unoccupied – no GRGR here this year also. Only 3 nests still up, walked all around known nests and stand, both sides of ridge but no sight or sound of goshawk.

*Did not visit/check again this year.*

## **2007**

7 MAY: In for first check. Started at road 49 (#76) side and walked down to other draw. Occupied in nest # 129- female in nest incubating. As I was walking up from draw to west, far away, I heard a male, but just with 1 call it could have been a COHA. But as I got to within 100 ft of nest, he came flying out but not too close. Still called 2 times at me. She was on nest, I saw her head and lots of down on nest. Walked and measured other nests for FS. So the goshawk that is nesting by Barkers house down on Road 49 is yet another goshawk territory, but not on FS land.

14 JUN: 2 Chicks at about 19 days. Downy but with pin feathers and flight feathers only about 1 inch out. Perky though. Female was perched in tall white snag nearby- not concerned at all. Watched me walk in and mark tree at OP. Calm the whole time, I guess they know me! Just now while I am sitting in truck at fence line, I heard an alarm call.

## **2008**

*Did not visit/check again this year.*

## **2009**

28 MAY: In for first check. Sunny day with temp about 70-80. Doing Izee route with TFJ (*Ted Fremd*). Checked #76 original nest off Rd 49, no nest, no goshawk. Now at other end in off of road 945 to walk rest of stand. Occupied by GRGR again in #124 with 2 fledglings- branched chicks at nest. Adult (male? small bird so might have been the male) perched nearby calling at us. Two types of calls and chicks gave their squawks.

*Did not visit/check again this year.*

## **2010**

3 MAY: In for first check. Occupied with GRGR in a new nest. Started on side up road 945 and parked at fence line. GRGR nest "GRGR 2010" (*now GEA 235*) is right at fence where park car. Medium size PIPO, marked with gps. Female? on nest incubating stayed tight. Other nests 124 and 129 are up but not used. Checked the Old X (*now #151*) along the ridge, but no nest there now.

16 MAY: Out with TJF (*Ted Fremd*), warm and sunny, no rain. Occupied in new nest (*now # 234*) near #125. This is a PIPO live, medium size not more than 60 ft from an original tree nest #125 that has been gone for years. We walked in to split up and male goshawk flew over us toward new nest. TJF and I went to opposite ends of nest stand (he to #123 and me to #172) and worked back towards each other into middle where we found her. Female tight on nest incubating. Male flying around us and he finally came into make 1 call at me when I was below nest marking the tree. Good GRJS mimic also. This area I first marked in 1997 and nest #125 was never seen used by me- but in 2001 #125 was gone. Now a new nest is rebuilt in almost the exact same spot- since we first found this territory 1995- that is a 14 year delay!

11 AUG: In to take measurements and pictures. Took photos of #76 original area, tagged tree again. This stand has grown in from first years. The understory is deteriorating with small diameter trees dying back, and more deadfall present. Marked 2010 tree and tagged. Nest also looks messy with lots of down and white wash – would say successful here by evidence, but how many fledged unknown. This nest tree is only about 100 ft from old PSME of #125. YES SUCCESSFUL with at least 1 juveniles. I heard beg calls from the draw with other nests and when I was walking along the 2-track here measuring these trees- a very young but large juvenile with dark markings flew into me, perched briefly, to call alarm at me in "her" "high squeaky voice. Took photos of all nests and tagged trees. The oldest #151 tree is now just a dead snag.

## **2011**

5 MAY: cloudy in AM, but now clear and sunny. No precipitation in 3 days. Temp 57\*. Tried to get in from the 2-track from Geary CK side but snow packed and muddy. Drove around to Rd #49 to original nest stand and walked in. Last year I came out to get measurements, but need to re-tag and get dip and strike numbers now. I took photos here in 2010. Occupied! Again by both goshawk and GRGR. Goshawk female incubating in #234 like last year and GRGR in #129. Finished all measurements now.

*Did not visit/check again this year.*

## HERBERGER SPRINGS

HS <sup>51</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997						
1998	122	7/9/98	N	OCC		
1999		5/18/99		UNO		RTHA possibly in #130
2000	144	4/20/00	N	S	2	
2001	130	5/3/01	Y?	OCC/A		GRGR in nest #180 RTHA possibly (SEE NOTES)
2002		4/30/02		UNO		
2003		5/8/03		UNO		
2004	166	4/27/04	Y	S	1	
2005	180	4/22/05	Y	S	3	
2006		5/8/06		UNO		
2007		5/7/07		Usurped		GRGR in nest #166
2008				DNC		
2009		5/27/09		UNO		
2010		5/15/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory was discovered many years after the 1993-1994 surveys had occurred in this area. Goshawk vocalizations had been noted several times along this ridge (Slaughter Ridge) during these early searches, yet nesting sites could not be confirmed. In 1998, FS personnel finally found one of the nest trees while performing a random survey. This cluster now consists of 7 marked nests. Two nests (#209 and #113) had been built at some time in the past, but weren't occupied during these monitored years.



The forest structure here is mainly mature large PIPO scattered through a mixture of secondary understory: some of it a complex mature mix, and some an even-aged re-growth of an old timber cutting. There are many timber sale units that pepper this whole region and the “suitable habitats” are surrounded by cut-over draws, some in pretty decrepit condition. Some of the stands of PIPO have been decaying and dying in recent years, especially around the nest sites #209 and #130.

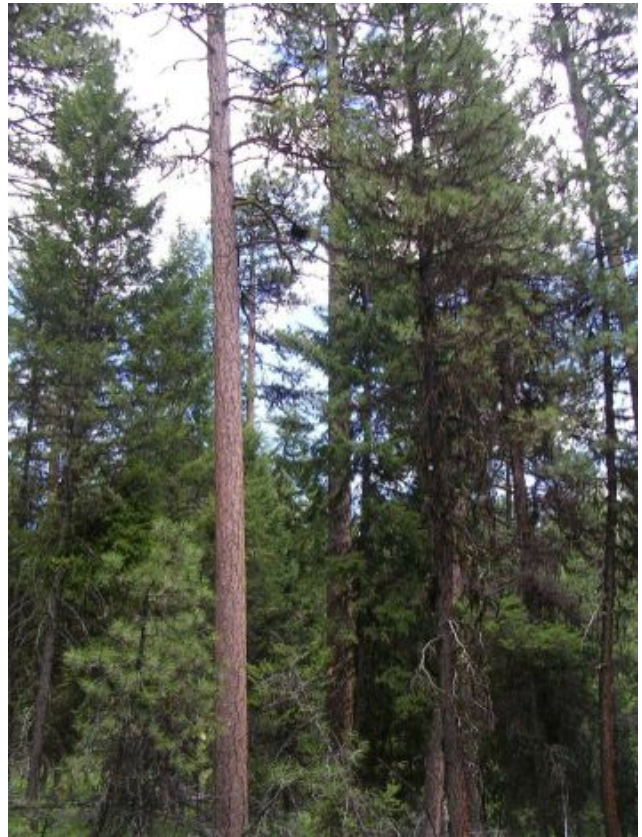
Photo of area of nest trees #122 and #180

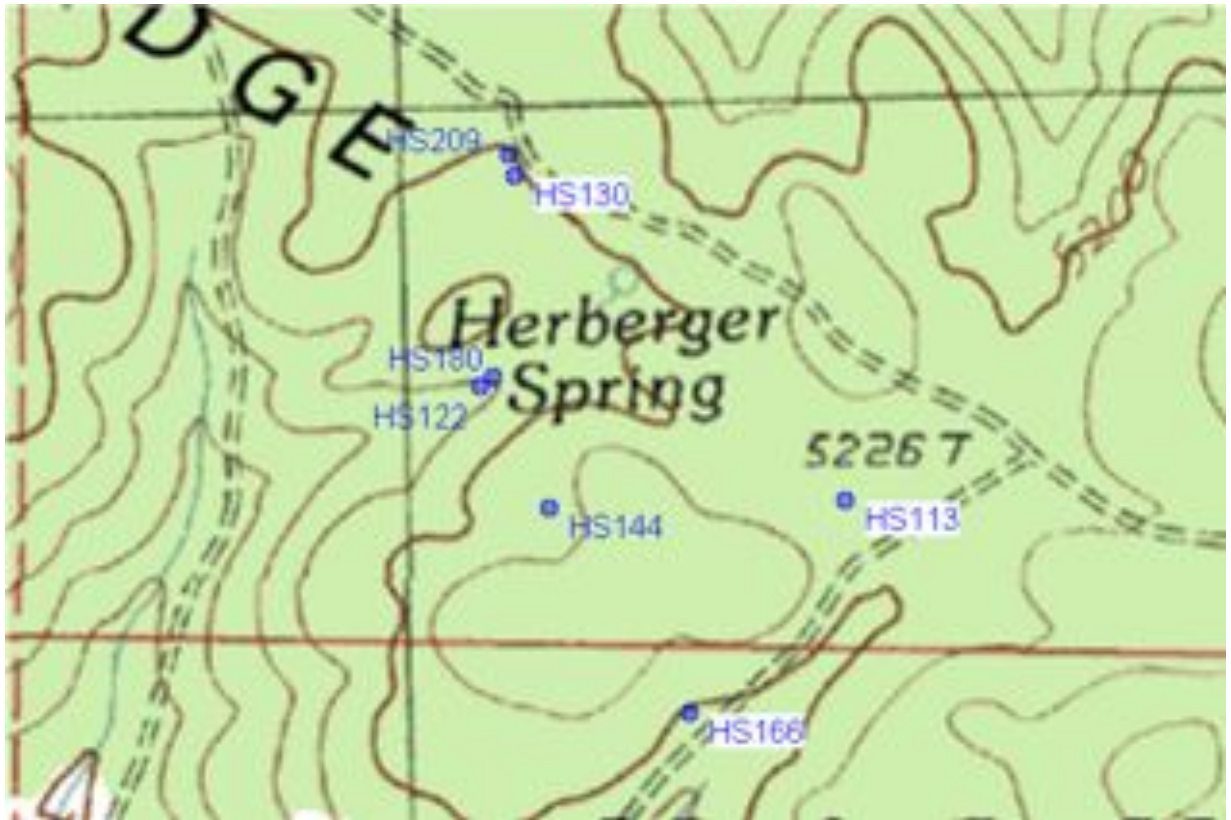


This is one of the territories that also had interspecific nesting (e.g., see Geary and OG 238 (Middle Route) and Luce Creek (Murderer's Creek Route)). GRGR nested here, usurping goshawk nests, but not in the same year as nesting goshawk. In the two years that RTHA were in evidence, it was difficult to get confident verification of where the RTHA were nesting (see 2001 field notes).

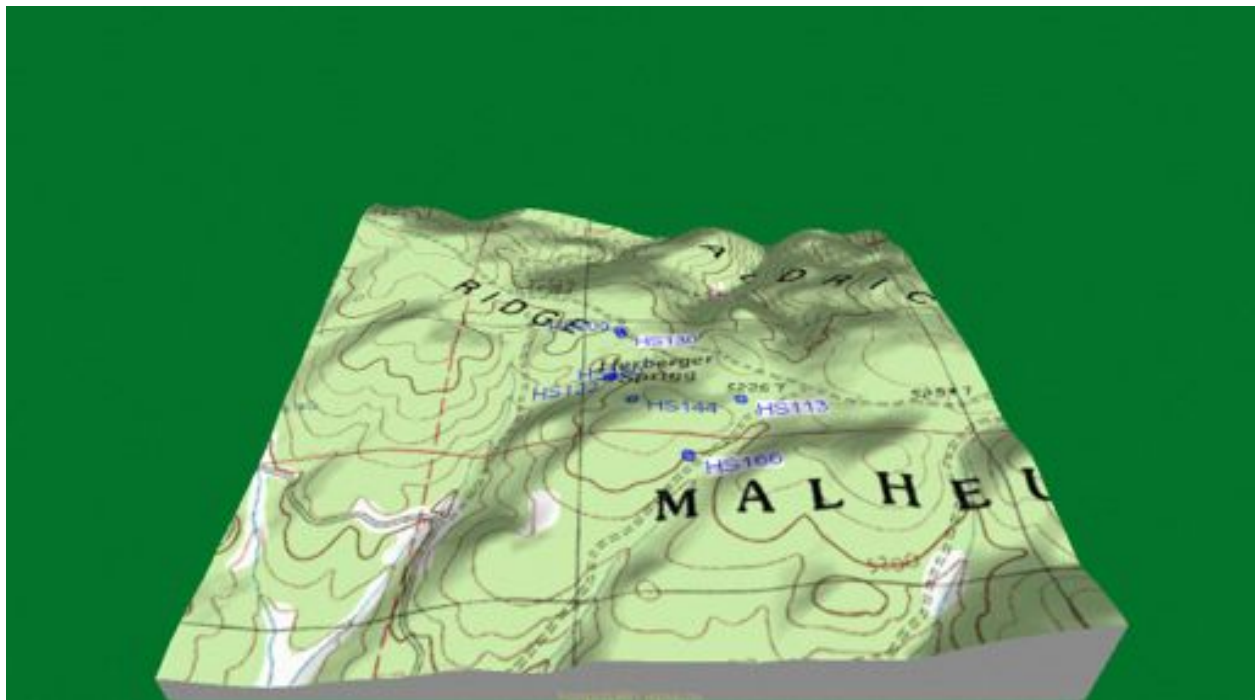
Photo right: Nest tree #166

Photo below: Nest area of #130 and #209





*North up*



## HERBERGER SPRINGS

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
HERBERGER SPRINGS -122	TAG	5187	PIPO	26	SW	55	330	5 to W
HERBERGER SPRINGS -130	TAG	5191	PIPO	22	nd	nd	150	5 to W
HERBERGER SPRINGS -144	TAG	5234	PIPO	23	E	60	335	13 to W
HERBERGER SPRINGS -166	TAG	5196	PIPO	32	324	60	240	17 to SE
HERBERGER SPRINGS -180	TAG	5187	PIPO	29	100	80	310	5 to SW
HERBERGER SPRINGS -209	NO TAG *	5192	PIPO	27	90	50	flat	na
HERBERGER SPRINGS -113	TAG	5219	PIPO	27	84	70	245	3 to SE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
122							A	I	I	I
130								U	I	A
144									A	I
166										
180										U
209								P		
113										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
122	I	P	X		X	X	DNC		X	X
130	P	P	X		X	X			X	X
144	X		X		X	X			X	X
166			A	I	I	U		P	P	P
180				A	I	I		X	X	X
209						I		X	X	X
113		I	I	P				P	P	P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = As of 2011, no PFA is designated in the FS records to which I had access.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### HERBERGER SPRINGS

#### 1999

18 MAY: New territory found by Forest Service people last year. Finally found the nest by the hunting camp meadow. Nest is unused and right along the 2 track that leads down from the camp to the spring. I had driven in from road 3925 to 196 at Sugarloaf and saw a goshawk fly across the road here. I found a new site though as I was driving out. Just to the NW, along road 196, there is an old nest (*now #209*) that is low in a PIPO branch. This was unused, but in an adjacent PIPO high up at top was another nest (*now #130*) with down on it. I could not see well into the nest, nor see any adult in tree, but I'm sure she was there watching from somewhere. Marked this as HS X and will come back to check.

6 JUL: In for nest check. I may have been wrong about this as goshawk. Nest is now empty but was definitely used. An adult RTHA took off into trees when I drove up and I saw a juvenile RTH circling overhead. So I now believe that it was used by RTH and it would make sense in the timing of when last in and not seeing any adult on nest – RTHA start a month before goshawk- so adult would not be incubating at that time as would a goshawk.

#### 2000

20 APR: In for initial nest check. Out with Matt Smith and Sarah Herve. As walking down to check N122, which is unused, we heard an alarm call off to the E. We searched over the ridge into the next draw and found an old structure in a group of PIPO. Nest still looked unused, but it is early so will have to come back a check later.

29 JUN: In for nest check. 2 chicks in nest @ 14-17 days. This is the new nest and very hard to see into. I have marked an OP on the hill and on the opening up hill from draw in order to see. Female was in stand and called 2x but then was silent while I tried to find a good OP.

9 JUL: Final check. 2 chicks standing in nest @ 22 days at most. Female was there but just watched, no territory display. Walked under nest to search for pellets and still she just watched. This is a very late nest and the latest to fledge.

#### 2001

3 MAY: In for initial nest check. N130 along road 196 has down on it and I can see tail feathers. Seems too far along could be RTHA?? Checked N122 down by spring and it is unused, but a GRGR owl is incubating on new nest right close to it (*now #180*). Will have to return to see what species is in the other 130 nest later.

18 JUN: In for nest check. N130 is now empty. So indeterminate as to RTH or goshawk. But as watching the nest heard a beg call across the road. Went to search this area, but found nothing. There is wh/wa on the ground and I did find one covert feather that looks more goshawk than RTH. If goshawk, these are early fledges. But it could be a failed one also. We have had 2 cold snaps and the GRGR was nesting nearby. Have to research GRGR to see if they would prey on goshawk. This territory is indeterminate, Active, but nest was used but by goshawk or RTH, not real sure.

#### 2002

30 APR: In for initial nest check. Unused- one nest N144 is gone, and all the others are deteriorating. No sight/sound of goshawk nor owls or RTH. Walked all around and between the nest sites but did not find any new structures. Took 4 photos, 2 each of 130 and 122.

*Did not visit/check again this year.*

#### 2003

8 MAY: In for initial nest check. All nest unused and only partially there. I did find another new/old nest though, 03 XHER (*now #113*). I followed a hunch and went to the SSE direction and circled back up to the main road. Marked my track as 08 MAY 03 HER. New site is near this next 2 track that comes up to road 196. All the nests seem to be in a line running W-E just south of road 196.

25 JUN: In for second called search. Called all along the 196 road that encompasses nest areas and down around, between each site. No sight/sound of goshawk. I did hear a good mimic once and I saw a GHOW fly by me when I was near the old site where the GRGR was one year.

Note: Late in the summer- AUG-some Forest Service people reported that they heard a goshawk wail, juvenile, in the area near the 2 track where I found the new/old nest structure. I had re-checked this nest and it was not used, but this means that alternate sites must be around here, perhaps further down drainage. Need to widen search here next year.

## 2004

27 APR: In for initial nest check. Occupied in new nest. This is a nest right along Rd. 207, down slope (down the road) from the X-03 (#113) nest I found last year. Female on nest incubating. When I had first started searching at the CG, I heard her beg call. I first checked N 144, found nothing, and kept walking over into next draw of road 207. I came out S, down slope, from the X nest and then spotted the new nest. The trunk of large PIPO has burn scare and the nest is out at end of broken limb. Lots of wh/wa and down on rim. I did see her head from up slope across the road- have marked a good OP here across road in the open slash line area. From the notes that Forest Service personnel gave me last year, said they were stooped and saw adult and juvenile E of CG- in the area of X nest. So, last year, they were here probably in this nest. I just had not walked down far enough to find it. There may be more along this road further down as well. Will walk it out next year.

16 JUN: Out with Chadski (*friend that wanted to see a goshawk*)- In for nest check. Successful but with only 1 chick @34-36. We looked along branches and spent some time here, but didn't see any branchers. Female was at nest at first, but flushed, called and stooped while we searched. Unusual that only 1 chick here this year, but perhaps this is an early nest and the others are already well hidden, or this is a low productivity nest for this year when all others seem to be 3 or 4. This will make quite a spread in egg laying dates this year – close to 3 weeks difference between the earliest and latest.

## 2005

22 APR: In for first check. Walking down road #207 on east side of area to check on last year's nest and old X nest (#166 and #113 *respectively*). Both still up but unused. Walked down road a little further to look at habitat- good. Will go check nests around camping area now. Occupied in "new" nest. The X nest I found back in about 2001 and had a GRGR owl in it one year- it is now being used by goshawk. Female low on nest incubating. I will finally be able to give it a number this year (*now #180*).

20 JUN: Successful with 3 chicks- 2 with feathered heads about 28-30 days?, and one slightly younger. As I got out of car I heard the male guk call in stand close to me- then the female beg call in stand. She stooped low as I walked within sight of nest. 3 big chicks standing up, alert and watching me from the nest. She stooped again as I walked out and is now beg calling to male as I sit in car writing notes.

## 2006

8 MAY: In for first check. Unoccupied – walked all nest stand and no new nests and those still up are unused. No sight or sound of goshawk. Lots of blow down in this area this year.

*Did not visit/check again this year.*

## 2007

7 MAY: In for first check. GRGR is in nest #166, so took no measurements for that tree. Will have to come back sometime. I checked all other known areas and no sight or sound of goshawk.

*Did not visit/check again this year.*

## 2008

*Did not visit/check this year.*

## 2009

27 MAY: In for first check. The old nest sites along road 198 (#130 and #209) are gone and many of the old big PIPO have fallen and been cut for firewood. Checked sites #122 and 180 and no nest now. Checked other sites to east and most nests gone or in partial condition. Unoccupied No sight or sound of goshawk.

*Did not visit/check again this year.*

**2010**

15 MAY: Called along stand and no sight or sound of goshawk. 2 nest sites measured for FS and put into GPS "notes". Most all gone now.

*Did not visit/check again this year.*

**2011**

30 June: First field day out with Kutya (*English Shepherd*), the dog that adopted us in the thunder! In to measure all trees, etc. The gps has a hard time in here so some of the markers are a little off, had to re-mark #122. No nests looked used, most gone-but did hear a good mimic while on the #166 side of territory. Possibly another nest site down in this draw somewhere.



## MASON SPRINGS

MS <sup>36</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						Noted that area active, no nest found
1994						
1995		5/3/95		UNO		
1996	41	4/24/96		S	2	
1997		4/24/97		A		
1998		5/6/98		UNO		
1999		4/27/99		UNO		
2000		6/13/00		UNO		
2001		5/29/01		UNO		
2002		4/30/02		UNO		
2003		5/12/03		UNO		
2004		4/27/04		A		
2005		5/23/05		UNO		
2006				DNC		
2007		5/17/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Active goshawks were heard in this area several times during the initial surveys in 1993 and 1994; however, no nest site was detected until 1995. Since then, in all the years of visits, this one nest is the only one found. There is a possibility that this could be an alternate territory for Old Growth 238 or Starr, since Mason is sandwiched between these two extensively utilized goshawk territories.

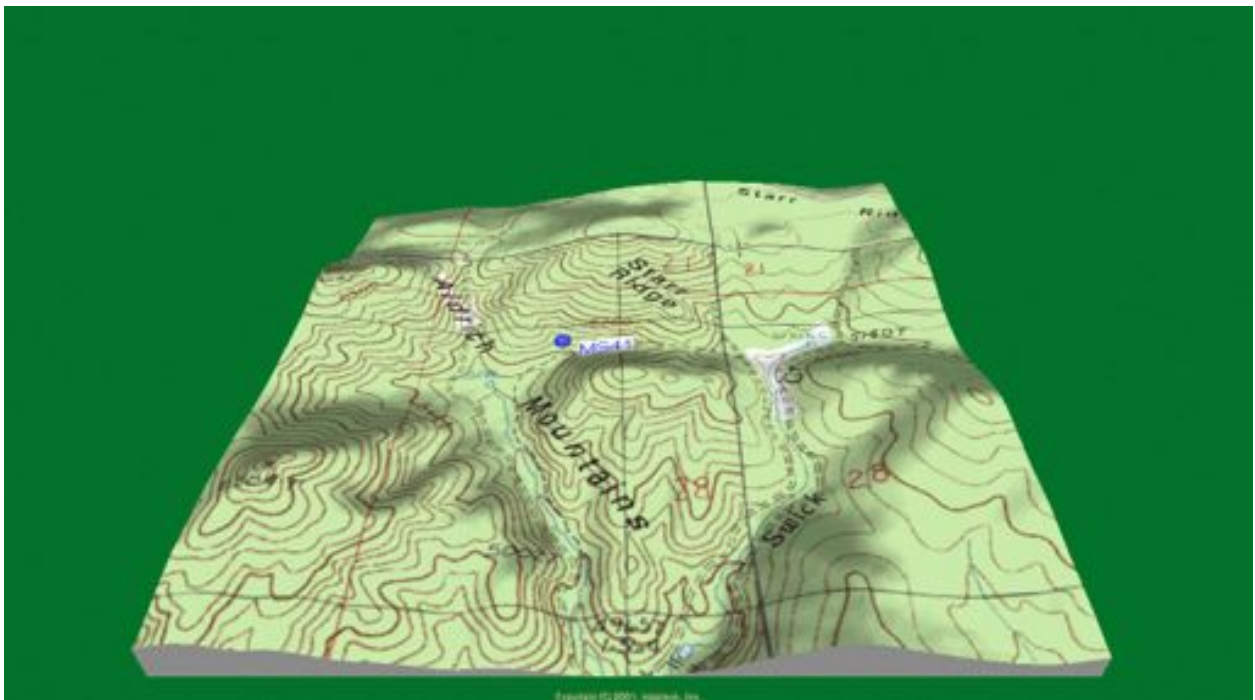
The nest stand itself is a suitably complex mature forest being bound on the east and west sides by meadows containing springs and large diameter trees. In contrast, directly south across a two-track from the nest is an old clear cut (unit PEA#18) that was newly replanted in 1996. Much of the land around the nest stand has been cut (it was referred to as “Van Aspen” sale at the time). However, some of the forest restoration and road closures are having a beneficial effect: the tree planting to the south was doing well, the aspen enclosure to the SW was successful, and the roads closed to the north and west were growing back in nicely (see 2000 and 2004 field notes). *Photo at right is looking up the hill to nest tree.*







*North up*



MASON SPRINGS

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
MASON SPRING -41	TAG	5140	PIPO	30	164	50	80	20 to S

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
41					A	I	X			

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
41				X	DNC	X	DNC	DNC	DNC	X

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)** = 442 acres established according to FS records.

### Recordings

In 1996- Female adult vocalizations

*mason springs 96 Jun25.mp3*

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### MASON SPRINGS

#### 1995

First visit 3 May 95. This is a nest/territory K. Haines and I first were aware of in '93. An active nest has never been found, but each year a goshawk response is elicited in this area. Each year a search has been done but no active nests or juveniles have been found here. Nest #41 appears to be unoccupied. Spent only a little time here on this day and no sight or sound of goshawk.

18 MAY: Searched areas around N#41 and did several stations of calling throughout the day. No sight/sound of goshawk. This could possibly be an alternative territory for others (Starr and OG238) or just an old ephemeral territory. Pileated WP to west in the meadow. Walked around this meadow and areas to the south but no sight/sound of goshawk either. Probably will not have time to return this year.

#### 1996

24 APR: in to do 1st nest check and this nest is finally Occupied! Female on nest incubating. There was recent tree planting in the cut unit to south across the road (unit PEA #18), but she was still there. In the aspen meadow there was a lot of activity- male White-headed WP chasing a male Hairy WP and female White-headed around- Stellar's Jay, Wilson Sapsucker, Grey Jays and a RTH hawk that flew away, no calling.

28 MAY: First nest check. Female still tight on nest, did not flush. Probably on eggs or 4+ day old chicks. Male was in stand and gave a brief series of alarm as some ravens flew over. Neither was very aggressive and I did not get any recordings of them.

25 JUN: in for nestling check. Female is aggressive now and vocal as I walk toward the nest. Can only see 1 chick head for now @ 26-28 days? Pin feathers on head are visible, dark aureole, fuzzy down on head still. Probably there are more, but can't see in to nest well. Female appears to have no bands.

4 JUL: Already have fledged. One juvenile is in tree near nest and calling at me while I collected pellets. I can hear another juvenile far off down by the meadow begging. No adults seen or heard.

#### 1997

24 APR: 1100 As driving into area along meadow, flushed a goshawk off road. It flew into the large trees at end of meadow. Gave a series of alarm calls. Walked to the nest and it appears to be unused. May just be too early. Territory is used but will have to come back to find new nest site.

10 MAY: 1330 In to do second search, but found nothing. Did not use caller, too early. Walked a long way in stand and over to other meadow, down road that connects back again to the aspen meadow and still no sight/sound of goshawk. I sat and had lunch at meadow but still no sign. Ravens were there again, they must have a nest here again.

*Did not visit/check again this year.*

#### 1998

6 MAY: In for initial nest check . N#41 is gone now. It is raining and hard so will not search. No sight/sound of goshawk.

9 JUN: In to do search and calling. Called and searched from aspen meadow to the other meadow. No sight/sound of goshawk. Gps'd the #41 nest site, and raven fledglings are in one of the meadows again.

#### 1999

27 APR: In for initial nest check . Nest gone and no new structures seen. Only walked around this area and searched briefly this time. No sight/sound of goshawk.

*Did not visit/check again this year.*

**2000**

13 JUN: In for initial nest check and for called search. Called stations along nest stand and into each meadow area that brackets the stand (east and west). No new structures seen nor sight/sound of goshawk. It is nice to see this area restoring itself. The road is deteriorated now and looks more like a game trail and all the planted trees are about 1-2 ft tall and look good. The meadow with the aspen enclosure is looking good with aspen regenerating. It does not look as beaten down with grazing as it has in past years.

*Did not visit/check again this year.*

**2001**

29 MAY: In for initial nest check. Nest gone and no new ones. Searched stand and over to the north where other meadow is and no sight/sound of goshawk.

*Did not visit/check again this year.*

**2002**

30 APR: In for initial nest check. Walked in from junction of the roads that lead into aspen meadow and searched all around nest stand and over to the east meadow. No sight/sound of goshawk nor any new structures seen. The east meadow is very dry this year!

*Did not visit/check again this year.*

**2003**

12 MAY: In for initial nest check. Walked into nest stand to search. No new nests seen and I only searched this small area. I will have to check when I last thoroughly searched here ( apparently it was a while ago). No sight/sound of goshawk.

Do not have time to re-search this territory this year  
Will have to add this to a thorough search pattern next year.

**2004**

27 APR: In for initial nest check. Nest is gone and no new structures seen. I walked the usual route toward the E to other meadow. I decided to walk around the butte to see what other habitat is along this side. I went N toward Starr Ridge and it is mainly old cutting units here. I got to the junction of Rd 026, where all these roads are closed now. Walked through some potential habitat that is NW of N41. I will call along this road and area NW this year instead of going E like I usually do. Saved track as "To Call 04 MS".

23 JUN: In for second called search. Used photo 2401-186. I walked and searched the WNW side of stand. Good potential stands. I did pick up a hunting goshawk with caller on the side that faces the highway to W (along closed road #015?). He? came into check me out, flying low, but when he saw me he just took off flying back the way he had come in. No vocals at all. I searched a little in that direction but nothing. I have a feeling that it possibly was a Starr goshawk hunting for it came in from this side that faces that PFA and highway. Since it wasn't a strong reaction to me, I can't even call it active really. Some ravens are in here again this year.

**2005**

23 MAY: In for first check. Unused- walked by nest tree #41 and over ridge north to the 2 draws where I picked up a hunting goshawk last year. No new structures seen nor sight or sound of goshawk. There is a raven nest right near #41 tree in a mistletoe clump high in a PSME. Many raucous babies being fed as I was searching.

*Did not visit/check again this year.*

**2006**

*Did not visit/check again this year.*

**2007**

17 MAY: In for first check. Nest gone and no use of area. Called a few stations along the 2-track a bottom of stand over into meadow area to NE. Only got raven calls back, they have been nesting here for several years now.

*Did not visit/check again this year.*

**2008, 2009, and 2010**

*Did not visit/check again these years.*

**2011**

30 June: In to measure tree. No sight or sound of goshawk.

## OLD GROWTH 238 (SWICK OLD GROWTH)

OG <sup>10</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	10	6/29/92		A		
1993	38	5/30/93	Y	S	1	CAGO used #10?
1994	10	5/11/94	Y	S	2	Female return of 68/L
1995		4/21/95		UNO		
1996	89	5/28/96		A?		RTHA possibly
1997	96	6/10/97	N	OCC		GHOW in #89
1998		4/29/98		UNO		
1999		4/27/99		UNO		GHOW in #89
2000		4/20/00		UNO		CAGO in #89
2001	154?	5/12/01	N	OCC		CAGO in #89?
2002	154	4/30/02	Y	S	3	
2003		4/28/03		UNO		
2004	154	4/27/04	Y	S	3	
2005	181	6/6/05	N	S	3	GRGR in #203
2006	184	5/8/06	Y	S	3	
2007		4/11/07		A		
2008		6/4/08		UNO		
2009	204	5/27/09	Y	S/F		
2010	203	5/3/10	Y	S/F		
2011	203	6/23/11		Usurped		GRGR?

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory was “DOG 238” in the beginning of this project and has now become the Swick Old Growth Interpretive Area. The whole area is not all old growth (there have been old logging units in here); but for the most part, it consists of open meadows surrounded by large diameter PIPO with little fir component and a more open middle canopy layer. The health of the smaller pines has deteriorated in the later years, most notably in the down and deadfall trees on the southeastern side of this territory. This has compelled the FS to undertake some management actions (meaning selective thinning and/or burning), some that occurred in 2005, and will continue in 2011, I am told. Since this is a high use goshawk territory (68% usage rate), mitigating regulations pertaining to goshawk will hopefully be enforced.

This is quite a heavily used area by many species. Goshawk were using the southeastern side of this old growth when first found in 1992, and have migrated to the western side where the deadfall is not so prevalent yet. There is also the compounding factor that GHOW (as well as RTHA and CAGO) were observed usurping nests on this eastern side which may have been a contributing factor of the goshawk’s movement further west. CAGO usurping goshawk nests occurred only two times, here at Old Growth 238 and Luce Creek (see Discussion Section). Actually, one tree (#89) is quite popular in that it appears all listed species use it. In 2011, even with the nest gone for many years, a RTHA had rebuilt a nest almost in the exact original





position. This is also a territory where GRGR were found to nest in the same stand successfully with goshawk in the same year.

In 2003, this is one of the territories where I tested the early detection procedure as proposed by Penteriani (1999) (See Penteriani Listening Test section).

Photo above: Nest tree #181 close to road

Below is looking into draw of nests #184 and #204

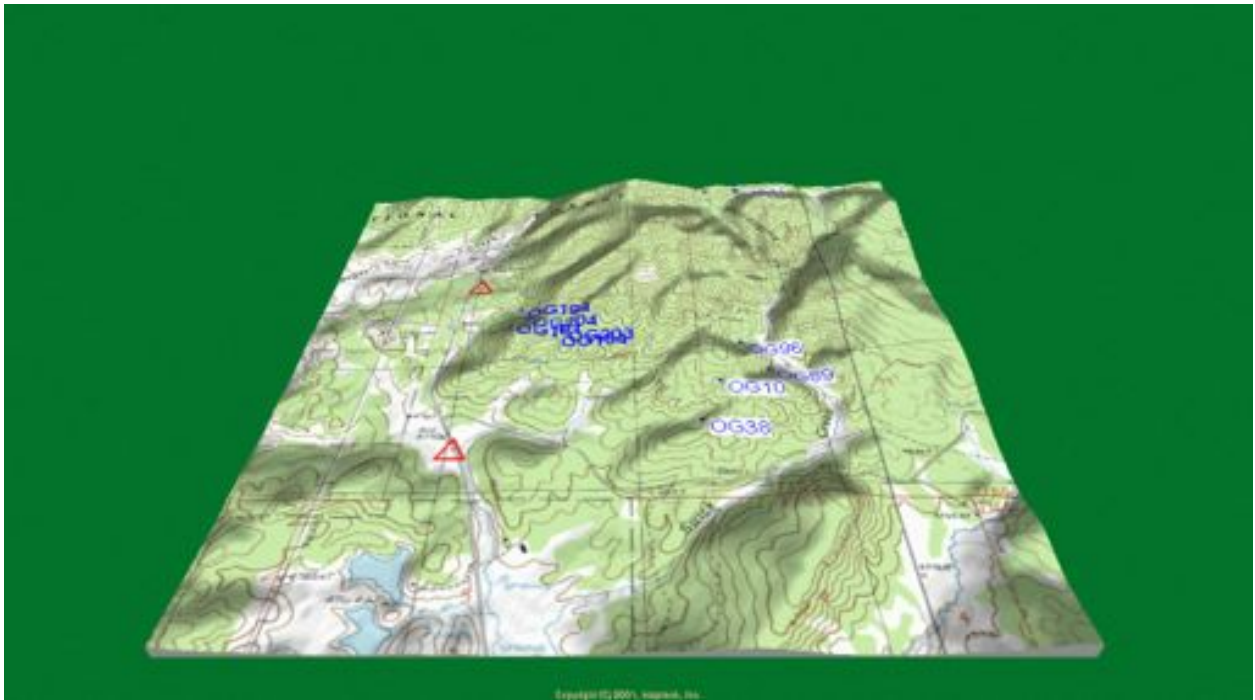
Photo right: Nest tree #203 and stand







North up



OLD GROWTH 238

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
OLD GROWTH 238 -10	NO TAG *	4946	PIPO	30	NW	nd	230	12 to SE
OLD GROWTH 238 -38	TAG	4903	PIPO	25	153	33	225	15 to W
OLD GROWTH 238 -89	TAG	4914	PIPO	30	E	50	240	24 to E
OLD GROWTH 238 -96	NO TAG *	4932	PIPO	28	NE	60	145	10 to NE
OLD GROWTH 238 -154	TAG	4918	PIPO	28	322	60	250	18 to SE
OLD GROWTH 238 -181	TAG	4894	PIPO	32	250	70	45	20 to NW
OLD GROWTH 238 -184	TAG	4881	PIPO	22	218	60	310	10 to W
OLD GROWTH 238 -203	TAG	4928	PIPO	31	225	70	260	7 to S
OLD GROWTH 238 -204	TAG	4901	PIPO	33	358	50	360	10 to E

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
10	A	U	A	I	P	I	X			
38		A	I	I	P	X	X			
89					A?	U	I	U	U	U?
96						A	X			
154										A?
181										
184										
203										
204										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
10	X				X					tree gone
38	X				X					X
89	I	P	P	X	X					RTHA in same tree
96	X				X					X
154	A	P	A	I	P	P				X
181				A	I	P				X
184					A	X				X
203				U	I	I	P	P	A	U-GRGR?
204								A	I	I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = 459 acres were established in 1994 according to FS records.

## Trapping and Banding History

In 1993- Female and male adult: She reoccupied this territory again in 1994, but was never seen after this year. The male was never seen on Malheur again (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### OLD GROWTH 238 (SWICK)

#### 1992

29-Jun-92: 0800-1303: 2 adults respond to survey of OG 238. Nest found.

#### 1993

09-May-93: 1649-1817: Territory appears unoccupied. Goose egg fragments found underneath nest; Some prey remains at base of tree; Nest seems beat-up by wind; No sight or sound of goshawk. Evidence of goose using old nest #0010

30-May-93: 1600-1610: 1 adult low in nest, incubating. New nest found, #38, not in the same draw as #10.

07-Jun-93: 1740-1750: 1 adult defensive, feeding 1+? Nestlings. No good observation points, have to get too close to nest.

14-Jun-93: 0450-0720: Trapping and banding, caught both adults; male made prey drop of AMRO (*American Robin*) to nest. Heard Nestling in nest

26-Jun-93: 1640-1650: 1 adult present and 1 Nestling approx. 27-29? days old

30-Jun-93: 1 adult present and 1 Nestling approx. 32-34 days old

11-Aug-93: Nest site data collected. 1 Fledgling heard N of nest #0010. Old prey remains found at #0038, so indicates this nest may have been used in past years.

#### 1994

The old nest #10 was used this year. Nest found upon walk-in. The female is a band return- 68/L- which is the same female banded in 93 at nest #38.

11-May-94: 1428-1520: 1 adult incubating on nest #10. Walked right close to nest searching for it, but she stayed tight on nest and did not flush. GHOW feathers found below the #38 nest, but that nest is unused.

22-Jun-94: 1100-1120: Nestling check- 2 in nest @ 22-24 days old. 1 adult semi-brooding at nest, did not move or vocalize. Fresh DF greenery at nest.

02-Jul-94: 0915-0950: Fledgling check- 2 at nest, 1@ 31-33 days and 1@ 34-36 days old. Adult female had color band #68/L, aluminum on left. She was at rest the whole time until we used the squeaky toy to make her move leg to read band.

#### 1995

**PFA:** 459 ac. established '94. Both nests are in DOG 238 as well.

21 Apr: In for initial check. Nest #38 seems to have down on it - one clump on stick at edge. Nest looks at little scruffy though, perhaps old down or they have just started rebuilding it?? Walked over to #10, unused and no sight./sound of goshawk. Will check back in mid May on #38 to verify if it is used.

18 May: Bah humbug! Nest is unused. I walked in to check #38 and it is unoccupied, as is #10 still. The fluff I saw on nest must have been old and I misread it. Or the birds were messing with the nest but rebuilt a new one somewhere else. Maybe the bird club and K Haines with the survey can find it (if here) when they come in to do the tropical bird survey.

28 June :In for search using the caller. On second station along rd#111, a goshawk flying high over trees came in from SE, slowed to check me out, then lazily flew N, above trees. Didn't take any other notice of me. Probably a hunting male from a territory away from here. No other sight/sound of goshawk. Did find a RTH nest with 1 female? adult and 1 chick in nest - fully feathered and ready to fledge. So this territory is unoccupied and or moved this year.

## 1996

24 Apr: In for initial check. Both #10 and #38 unused. #38 is almost completely gone, #10 us still up but all limbs and tree are dead and whole tree will be gone soon. No sight/sound of goshawk.

28 May: In to do search and using the caller. Found new nest. It is on map NNE of #38. Nice drainage in large PIPO along an old skid trail that is very near the edge to a meadow. I was using the caller, but never got a response. Even played alarm call 1x when watching nest and never did even see her pop her head up!!! I had played 3-4 stations when at top of this drainage, I just got a thought that this is where I will find them. This was following my intuition though- not really being conscious of any effort. There is a definite stillness when I feel where animals are - I was having this feeling as I was walking down thru the trees and didn't see the nest until almost right under it. Good OP site is round on hill toward meadow side. Lots of down on nest- never saw her though, she was hunkered down. So must still be on eggs or very young chicks. Not much wh/wa visible either. No other goshawk present that I saw.

25 June: In to check new nest site. Coming in from N - just finished at Mason - at junction with road#018 and #011 that leads into meadow area. Will walk the fence and find nest from this side - directions on back of map. As walking into drainage, RTH was calling a lot at me about 100m N of nest site. Nest still with down but do not see any one on it. There is no calling goshawk or anything - it appears just as it was 1 month ago. I may have misread this nest. It may have been a RTH nest used early in season. With the RTH calling in the area it is possible. Or- it may be a failed nest of goshawk or RTH because no adult activity was noted by either species when I came in last month. Because I never saw adult goshawk per se, can only say nest was used and possibly then failed by some raptor.

## 1997

24 Apr: In for initial check. Nest #89 has GHOW in nest with downy nestling. #38 nest is gone and #10 is 1/2 gone but still visible in the dead PIPO. Walked these areas but no sight/sound of goshawk.

10 May: In for second search. Walked in from N off road#011 in and around to GHOW, 1 chick sitting up in nest now. Searched the 2 drainages around the known nest sites, but no other nest structures seen. There has been a lot of logging up off road#011, a moderate cut with the medium size PIPO cut. Drove along the road that parallels the highway coming out N from the OG area toward Starr (Swick trail head road goes to this). Good habitat in there will need to call it if have time.

Note: Ann Frost, working for the FS, found the used nest for this year on 10 June - #96. Never got a productivity count from this year here. The new nest was down by the cut area that I noted above. I had walked past this on my visits and did not see this structure.

## 1998

29 Apr: In for initial check. Walked in to search nest area. #89 again has down on nest rim. I watched for about 20 min. but could not see any adult on nest. The down looked wooly, so could be a GHOW again, or old down. All other nests are gone - #38, 10, and 96 already. No sight/sound of goshawk.

9 June: In for search and using caller around nest sites. Called stations and GPSd all trees. No sight/sound of goshawk. #89 is not in use. It does still have down on it but it is last year's remnants I guess? I walked around base of tree and saw no wh/wa or other signs. The down on the N edge of nest has been there for about 2 years now, since and before the GHOW. I have been fooled by this. A RTH was seen down by the same meadow they always seem to be in.

## 1999

27 Apr: In for initial search. N #89 has GHOW incubating in nest again. Searched the nest areas- no other structures seen. No sight/sound of goshawk.

17 June: In for second search and using caller. No sight/sound of goshawk. I marked a track away from #89 where GHOW was earlier. Nothing seen.

## 2000

20 Apr: In for initial check. In with Matt Smith and Sarah Herve so mainly checking #89. This year a Canadian Goose is on nest!! She is settled down in nest incubating. Saw probably a RTH fly through stand, but no sight/sound of goshawk. Will come back later to check other sites.

13 June: In for second search using the caller. A large aspen has fallen across the road leading in on #011, so walk is a little further now. Called and search the areas around and between known nest sites. Remarked N#89 that is now empty. No sight/sound of goshawk.

## 2001

12 May: In for initial check. It appears that #89 was used again, but don't see anyone on nest. If a goshawk, they are hunkered way down low, or an early GHOW and only chicks in nest that I can't see. Lots of down on rim and at base of tree, a large egg shell broken with a few pellets. These all could be from last year? The egg shell from an early goose this year? If a goose used it again, they could already be fledged. I found the one last year in nest on 20 Apr - way earlier than this. Who can say???

late Aug: The bird club's tropical bird survey picked up juveniles goshawk in the OG area this year. I talked to Tom Winters as to where he saw them. The area is marked on 2000 map with blue outline. Past the Swick trailhead, go to cattle guard. Walk the fence line S into OG to where the survey trail is marked. He said he saw 2 juveniles and 1 adult further on in this area. It was in Aug so the juveniles would still be close to the nest site. So, this is about 1/2 mile further west than the old nest sites. Will have to really search this whole area next year.

## 2002

30 APR: Initial check, Occupied on the new nest, female incubating. This is a new part of OG 238 being used. This is closer to the highway where the Bird Club guys said they saw juveniles last year. I started my search here and found the new nest. It has to be the same one used last year but don't know that for sure. It is rather open and exposed in the middle of a small clearing. The draws to each side of this area are very nice OG. Good OP just a short walk from where park the car at the first intersection of 2 roads. I checked on N#89 to see if it is being used by anyone. Nobody home and it is deteriorating also, all other nests gone.

14 JUN: In for first nest check. 2 chicks, maybe 3, and seem younger than the Starr nest. All very downy and white, did not move much with little head control. Maybe 20 days? Both adults there. Female came off nest when she saw me and the male flew in from nearby at her first call. Both stayed around flying over me, perching, calling while I was there. I showed this nest to Matt Smith on 29 May and female was still on nest incubating, but to one side, so thought eggs had probably already hatched. So from that data, I will infer that these guys are in the 21 day range of age.

28 JUN: In for nest check. Yes 3 chicks, 2 @ 30-32 days and 1 @ 26-28 days. All alert and calm. The male watched me and gave a "guk" call at first then started with the alarm. This brought out a beg call from the female away across the other side of the stand

4 JUL: Final nest check, out with TJJ (*Ted Fremd*). All 3 still in nest, 2 @34-36 days and 1 @ 32-34 days. When we first got out of car we heard a call, but never came in to us to be seen. TJJ thought it was a greeting Hello!

## 2003

11 FEB: Listening test. Cold at 15 to 18C. 0625 to 0820 at C1-OG. This is up road at first turn just opposite the new site of last year. Logging trucks on highway all am and loud! Did hear the usual crowd (see other notes), coyotes in the meadow, turkeys also. Doug squirrels are up and about so prey is potentially available. I learned a lot about turkeys today. As I got out of truck, I was startled by a loud gobble of turkeys right off the road there in the nest stand. When it got lighter, I saw that they were roosting up in the trees and when they could see, they all coasted down to the ground to start foraging. They then let out a series of barks that I have never heard before. No sounds of goshawk though.

21 MAR: Listening test. Not so cold at 1C but cloudy, but full moon gave off good light. By 0550 it started to lightly snow. 0515 to 0620 at a new site C2-OG. Further down road toward the original nest stand, but just off the road in between the nest clusters. Highway noise not so bad here. Heard N Pygmy owl, cranes, Canadian goose, WP, but no goshawk. I was able to hear the cranes and geese off in the meadow area, so you can hear a far way. It grew to a snow shower by 0620 and the birds stopped singing. It was snowing enough to cover the ground and that is, I guess, when birds hunker down and stop activity.

28 APR: In for initial nest check. Briefly went in to check on the nests at original areas. It had stopped raining. Only 2 nests are still partially up but both unused.

12 MAY: In for another check. Walked total stand, checking all nest sites. None in use, some gone, no sight/sound of goshawk. So this fits with the test, that no birds are here for I did not hear any earlier. This is named Swick Old Growth now, with kiosk, rest area, and interpretive trail.

*I did not have time to get back here and really call area this year.*

## 2004

27 APR: In for initial nest check. Started at the nest closest to Swick interpretive area and N154 was occupied. Female on nest incubating but she was very cryptic, at first it looked like a stick in the nest, she was low. This nest is so shallow, she seems so exposed. She gave 2 chirps as I walked back to car. Went over to check on N89, nobody there and it is partially gone now.

28 APR: Briefly stopped to look at nest. It was cold and rain/snow, so I did not want to stay long. I was just showing Chad (*friend visiting*) a goshawk since we had had bad luck finding any this day. She was on nest and got up to fly off, we left right away. She gave us 1 call as we were at the car.

16 JUN: Out with Chad again. In for nest check. Successful with 3 chicks @ 19-22d. All calm and laying down in nest. At first we did not see the female, but she was perched and watching us on a limb right above the nest. She called 1 time, but did not flush off- stayed at nest.

25 JUN: Last check. Successful with 3, 2@36-38d and 1@ 34-36d. Female was at nest when I walked up, but flushed immediately. She flew to perch above me and called, while all the chicks were up and alert on rim of nest watching it all.

## 2005

22 APR: In for first check. Just checked #154 and it is unused, but walked stand and found a new nest in same grove area (marked as OG 05)(*now #203*) but a GRGR is in this one. So this side usurped by owl but didn't search further here. Will go check other original nest area now. No sight or sound of goshawk, but did see a RTHA that checked me out 2 times near the truck parking area. Walked all this stand by other nests and all are gone now. Heard good GRJA mimic close to #89 and saw RTHA fly over. Heard what I thought was a COHA also in here. Lots of brush piles now around #10 and #38- thinning and are they going to burn in here and when?

4 MAY: Just checked GRGR nest. Adult was sitting on nest preening. She? did not move so that I could see her kids so don't know how far along these are. (From indication of other nests- beginning of May GRGR chicks are hatched and about 1-2 weeks old).

6 JUN: GRGR are gone but found new goshawk nest! Occupied in new nest. Weather cleared up and I walked the stand down to Swick interpretive trail and around that area. On a hunch I wanted to check the stand to the N of road that goes by the trail head/outhouse- the one I drive in on (011). I flushed her off nest and she called at me and stooped once on the road at area that bird club marks for migrating surveys with green/black flag and up to first curve in road. I did not see the nest yet but it is in here for sure. It is too cold to keep her off nest long, so I will return in 2 weeks or so. OG 238 occupied and with GRGR also near. Good hunch!!!

21 JUN: Nest check. Successful with 3 chicks- 1 still in nest standing @ 32-34days and 2 others on branch next to bole @36-38 days. No adults present or seen. C. Kranich had come out earlier and found the nest tree and it had flagging on it. It is to S of road. So female had stooped me just across road below the nest, not coming up from the area to N of road. I probably would have never found this nest this close to the road and thinking to search to more to the N. How it is!

## 2006

3 MAY: Drove in to check ones with easy access. N #154 and #203 are unused and last year's nest by road #181 also unused.

8 MAY: In for full search. Rained all day and night yesterday but breaking up this AM, moist but not raining and sun breaks today. Occupied with female incubating in new nest (*now #184*). Following my instinct and started in good stand below (N) of road and N of last year's nest. She is in medium sized PIPO on edge of small glade about 600-800 ft N of road and #181. I marked "2006 OP" of place to see nest, but did not walk over to mark the tree yet. Walk down from road where "migrating bird" trail is marked @ orange triangle on tree. Across road here is a large stump that leads to clearing with a lot of small deadfall. One 7 ft tall stump stands on edge of this clearing, this is where you can look across glade to N and see nest tree.

20 JUN: last nest check. Successful with 3chicks oldest @ 21-25 days. Female did not stoop until I was at tree marking nest site. I can hear her now with beg calling as I am at truck. I guess the male had arrived because of her alarm calls- or just that dinner has arrived!

## 2007

11 APR: Out early this year because FS wants to do spring burning. Unknown at this time. Have walked all known areas and took some measurements on trees for FS records. Saw adult goshawk fly over 2 times while in the northwest sites. Didn't fly real low, but enough to be watching me. RTHA are in area more to southeast end as they usually are.

17 MAY: Going to do first calling a little early, but it is warm. Due to not having time this year to call all known territories, because I will be working a 30-day detail on the Thorn Fire calling the burned area for goshawk prior to releasing it for salvage logging. Here there was no response to calls. It may be just too early and/or no goshawk in area.

## 2008

4 JUN: Briefly checked known site on NW side. No sight or sound of goshawk. Bad nesting year, and no thorough survey done.

*Did not visit/check again this year.*

## 2009

27 MAY: out with TJF (*Ted Fremd*). In for first check. Occupied in new nest marked "OG 2009" (*now #204*). This is N of the road in the draw with large trees almost in a direct line between #181 and #184. TJF found this all by himself, first one for him! He definitely got the rush from the first sight and contact with goshawk female. Yeah!

*Did not visit/check again this year.*

## 2010

3 MAY: In for first check. Occupied with female on nest incubating. Nest known from 2005 when a GRGR used it first (*#203*). Goshawk and GRGR were both using this stand in 2005. This nest has been rebuilt and now goshawk on nest.

17 May: Out with FS crew of 7 for goshawk training. At end of day, stopped by OP here to show them the nest site. She was standing up on nest- feeding?- and flew off after awhile. All got to see her.

This training day: lots of questions asked and I had an overall good feeling that these are competent young people- good observers-sensitive to surroundings etc (unlike some volunteers in past). Also all are finally given GPS units for field work and are using my database files!!! It was very interesting to see my data sheets being used now-as info sheets given out by FS. It is good in one sense, because these data are being used with effect this year, but bad in another way. I downloaded my database for them to put into their programs (whatever they are using now) not to just use my stuff straight across. I downloaded this in haste- with duplicate markers and other markers for my own info- and that is what they gave to these seasons to use in the field. So it is pretty confusing to these people. My intention was for the FS to mine my data- but that has never been done. It seems that through all the years I have been giving FS markers and reports, most of it has never been entered into whatever program the FS system was using- even the nest tree localities! What a waste of energy all these things really are- changing database systems as the FS does, changing programs, changing people. There is a GOOD base of data here for new people to work with and I see now that when \$\$ is available- decent effort and personnel will be utilized. However, this is the incentive to get this data out in a form- from me- that is the definitive account of all these years.

## 2011

3 May: Crisp, cold, but sunny day about 45\*. Out with TJF (*Ted Fremd*) as our first goshawk field day of us both retired! Road still snow packed so will park at restrooms and walk in. Measured all nest sites near highway on the W side of this territory. Will drive around to other side if we can get through. One place on Rd011 we almost got stuck but got through. No known nests used by goshawk this year. The area around nest # 10, 38, and 89, on SE side of territory, is deteriorating a lot, many down and dying trees in the middle canopy. Surprise! A RTHA is nesting in the same tree where #89 was, but in a nest built higher up in the tree. Female and male called at us when we walked through. This is one popular tree! The area around the other nests on the NW side is being planned for thinning already (C. Kranich told me about this last year). More blue-lined trees in here and orange/black flagging around the S-2 spring. There are some dying/down trees around nest #154-203 but not nearly as dramatic as that on the SE side. No sight or sound of goshawk today while we were in here.



23 Jun: About 60\*, cool but mostly sunny, T-storm yesterday in PM. Stopped by area to get dip/strike of areas. Looks like #203 may have had occupancy by GRGR, found large grey fluffy down at base of tree, but nest still not with much wh/wa or anything much. Go figure!

## PEARSON CREEK

PEA <sup>17</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	27	6/15/93	N	F		
1994		5/5/94		UNO		
1995	70	5/26/95	Y	S	3	
1996	27	4/24/96	Y	S	3	
1997		4/24/97		UNO		
1998		4/29/98		UNO		
1999	70	5/10/99	Y	S	3	
2000	143	6/13/00	N	S	3	
2001	27	5/3/01	Y	S/F		At least 2-3 nestlings observed
2002	143	4/30/02	Y	S	3	
2003		5/8/03		UNO		
2004		4/27/04		Usurped		N#27 taken by GHOW
2005		4/22/05		UNO		
2006		5/3/06		UNO		
2007		4/13/07		A		
2008		6/4/08		UNO		
2009		5/27/09		UNO		
2010	213	5/15/10	Y	S	3	Final check done by FS
2011	70	6/30/11	N	OCC/S	2+	@ least 2 chicks @ 24 d?

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory has longevity but with a rather sporadic usage. The nest stand itself has had little management and it *was* surrounded by a healthy complex older forest structure running westerly all around the spring meadow down to the Van Aspen/ Pearson springs.

In 1997, the immediate surrounding forest was cut due west of nest site #143. The cutting started no more than about 300 feet from this nest tree, just the other side of this small draw that runs down to the meadow. This was Van Aspen unit #7 and cutting occurred in early May. Apparently, no timing restrictions were enforced because I did not have time to go in and really determine if this territory was occupied or not\*. However, even with this side of the nest stand more open, nest #143 was rebuilt and used successfully in 2000 and 2002. Through the years, in my searching and calling the surrounding habitat, there seems little left that I would consider classic goshawk habitat. I recommend that this little nest cluster be maintained as long into the future as possible.

All the nests in this cluster are in a slight draw that is closely bound by, yet hidden from view from the roads. In 1997 during the Van Aspen cut, Rd 3925 must have been heavily used but I have no data concerning whether this affected any attempts of nesting goshawk. In my experience, while being in this area, the road does not play much of a factor *because* the nests are below the grade of the road and there has always been little traffic.

It was here that I first observed that goshawk would rebuild nests in exactly the same spot in the same tree, even after several years of that nest being gone. I have noticed this phenomena frequently, but not to a degree that it is very common amongst this population of goshawk. The mechanism behind this behavior would be an intriguing thing to study. Is it a familial memory kept by individuals; or is it solely a key from the habitat structure itself?

*\* I talked to FS about this and in later years, for the most part, no activity started in goshawk territories before it had been checked for occupancy. My suggestion had been that not until June, when adults become more protective, could one really tell if territory was occupied or not (see Discussion Section).*

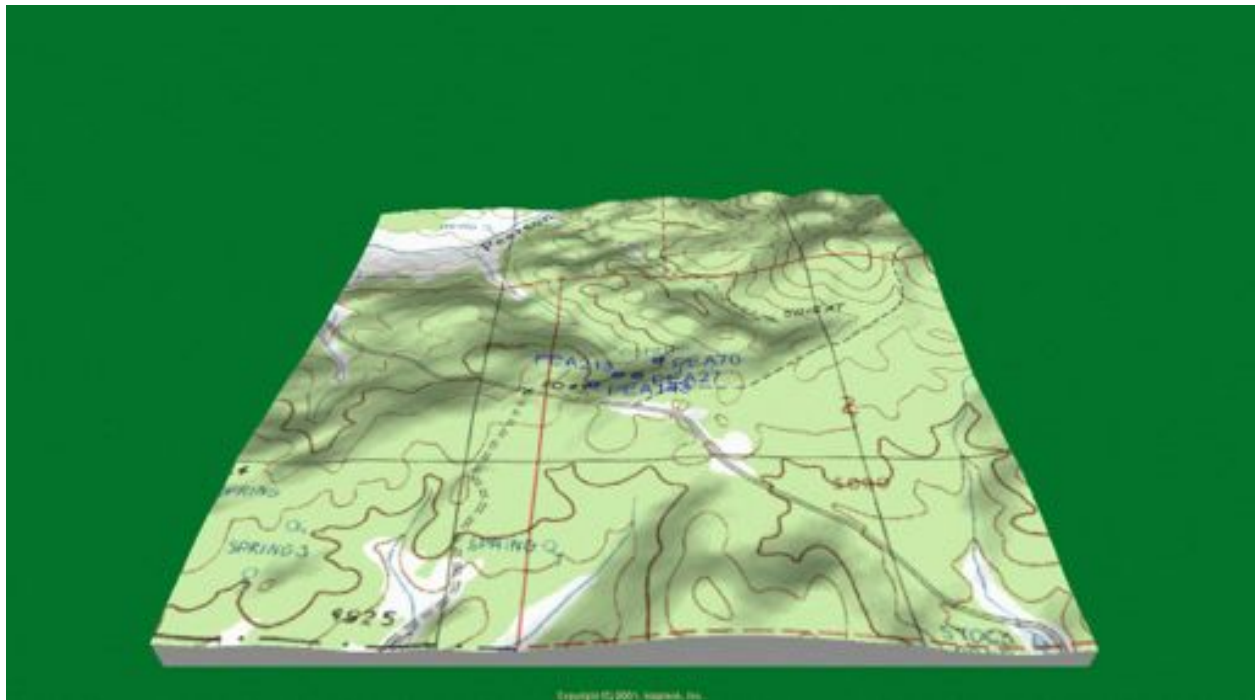
Photo of Nest # 27

Taken in 1992 or 1993 by C. Schelz





*North up*



PEARSON CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
PEARSON CREEK -27	TAG	5023	PIPO	27	224	55	240	18 to N
PEARSON CREEK -70	TAG	5005	PIPO	24	10	65	184	18 to W
PEARSON CREEK -143	NO TAG *	5017	DD PIPO	31	150	60	242	5 to N
PEARSON CREEK -213	TAG	5000	PIPO	36	180	60	258	18 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
27		A	I	I	A	I	I	I	I	A
70				A	I	I	I	A	I	I
143			P	P	P	X	X		R/A	I
213										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
27	I	I	U	I	I	I	P	P		P
70	I	I	I	P	X	X		X		R/A
143	A	I	I	P	X	tree down				tree down
213				P	?	I			A	P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)** = Established in 1993-1994 at approx. 455 acres, but some cutting has occurred in this area. In 2010, according to FS records, it stands at 445 acres.

### Recordings

In 1995- Female adult vocalizations [pearson creek 95 Jun29.mp3](#)

In 1996- Female adult vocalizations  
[pearson creek 96 Jun11.mp3](#) and [pearson creek 96 Jun25.mp3](#) and [pearson creek 96 May28.mp3](#)

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### PEARSON CREEK

#### 1993

15-Jun-93: Nest #27 found with dead nestling under it (approx. 2+ weeks). Hears goshawk in area and finds feather. M. Pacheco, BV seasonal biologist, finds nest.

17-Jun-93: 1 adult heard in area showing some territorial defense. More feathers (molted) found below nest and some pellets. Nest definitely used this year, whitewash and down visible.

PFA: In '93-94?, 445 ac established, but there has been some harvest in this area, but drainage where nest is, is still good habitat.

#### 1994

05-May-94: 1300-1630: Stand watch 3.5 hrs. No sight or sound of goshawk. Got a good look at nest and it looks inactive. (Detailed stand watch notes on page 94-21).

16-May-94: 0830-1230: 2nd stand watch, 4 hrs. No sign of goshawk. Unidentified raptor flew high over stand heading approx. 113 degrees.

21-Jun-94: 0930-1500: Calling stations (alarm & wail) and thoroughly searching the stands as well within 1/2 mi. of nest. No response. Old stick nest found to SW of nest #27 in 2 dead large PIPOs just below the road (*now # 143-see notes for 2000*). RTH defensive on edge of meadow near private land on road# 209 (sec34). Did not find nest though. There is a good drainage to the north, large herd of elk responded to me, also good GRJA mimics here.

#### 1995

3 May 95. Nest #27 appears to be unoccupied, also old nest at top of drainage in old dead PIPO (#143). Only spent approx. 20 min in area and no sight or sound of goshawk.

26 MAY: In to do search and calling the area. Found new nest (#70) that is about 200m NE of N27. Nest is in PIPO on N side of tree. Good OB site marked with green/black flag coming in from road #215. The nest is just above the corner in the road #282 as it turns around the meadow, just E of the old slash pile at this corner. The female came out and responded to the 2<sup>nd</sup> calling station. Alarmed called one time, saw me, then flew back to nest. She then stayed low and quiet on the nest as I searched and even when I got close to tree to watch her. Thus, she must still be on eggs or very young chicks. This is the same type of behavior of the Vance bird today and that of Izee near N52. (I maybe missed the nest at Izee here, will have to go back and call more)

19 JUN: In for first nest check. It started to rain/snow so had to wait to go in to stand. Female on nest brooding and did not move off. 2, possibly 3, chicks in nest, just mounds of white down in front of her, did not see any bodies or heads to age and there was little movement. Assume they are = to or < 9 days. Did not get any recordings because it started to rain and we left. (*out with Ted Fremd today*).

29 JUN: In for last nest check and try to record. 3 chicks in nest, 2 @ 32-34 and 1 @ 30-32 days. They are older than expected because it was cold so the female covered them well last time. So she was brooding 20-24 days old chicks that day in the rain. Got first recording of female alarm call. She has NO bands. She came out and perched over me as I was scoping the nest. She was only about 5-10m away. She stooped lightly once or twice as I was walking away. Did not collect any pellets at this time.

#### 1996

24 APR: In to do 1st nest check. Both adults present. Female perched and calling a few times, male flew in, called once and left. Original nest was where they were perched by, but it did not have a lot of down on it yet. Checked other nests, last year's still intact, and one in dead PIPO is deteriorating, almost gone. Goshawk were not aggressive or much alarmed it seemed. Female has no bands. Possible that they were still in courtship phase and had just picked the nest.

28 MAY: In to do nest check and recording. Female in on N27 staying down. There is down on rim but not a lot of wh/wa on the ground or tree yet. She is still on just hatched young I would guess. I did get some of her alarm calls from on the nest, but recording level was perhaps too high. Not a good session.

11 JUN: In to do nest check and recording. Nobody at the nest when first arrive, thought that it might have failed, but female? flew in with prey and started feeding. 3 chicks @ 14-17 days old. She saw us (out with my visiting Mom) and called a few times but never left the nest. I got a second recording, but she is not very aggressive.

25 JUN: In for second check. 3 chicks visible in nest still very downy, probably around 26 days? Did not see them very well. Female was aggressive and vocal as I got out of the truck. I got 3<sup>rd</sup> recording of her with beg calls. I heard the male in the stand, but he never came in close.

4 JUL: In for final check, 1 @ 32-34 , and 2 @ 28-30 days. Female still present and aggressive.

25 JUL: In to collect pellets. No birds around at all. No juveniles heard either, but did not look for them.

## 1997

24 APR: 0850 Still snowing and cold, just checked both nests 27 and 70, and they are unused. Both with snow in them.

22 MAY: 1430 Went to search stand but did not use the caller. On drive in, noticed that new logging had occurred on the W slope of drainage, across from the old nests that were in the 2 dead PIPOs. This logging, Van Aspen unit #7, has occurred in early May and may have flushed them off -if they were attempting to nest. Why were there no timing restrictions, or at least time for me to check the stand fully before any activity occurred!!!

*Did not visit/check again this year.*

## 1998

29 APR: In for initial check. Both N27 and N70 in good shape but unused. Old nest X in the dead PIPOs is now gone completely. No sight/sound of goshawk, but a raven is nesting in the vicinity and was calling at me the whole time.

*Did not visit/check again this year.*

## 1999

10 MAY: In for initial check. N70 is occupied, last used in 1995. Lots of down and feather on nest rim. I think I saw the back of female low in the nest, or just a slice of very young chick backs. Perhaps, female was off the nest, it being an early nest as some other appear to be. I scanned the trees and branches but did not see or hear any adults.

6 JUL: In for nest check. 3 chicks all still in the nest @ 36-38 days. Female was in the stand and called at me one time, but that is all. A RTHA flew over the area and called. The adult goshawk did not respond but one of the juveniles in nest was focused on it.

## 2000

17 APR: In for initial check. N27 and N70 good but unused. No sight/sound of goshawk but did not spend a lot of time here.

13 JUN: In for 2<sup>nd</sup> search using the caller. New nest being used, N143. This is the old X nest I found in the dead PIPO years ago, that was completely gone. It is now rebuilt in the exact same position as years ago. What memory is this! At least 2 chicks in nest @ 9-12 days. This is a good lesson. I had called with alarm call 2 times near this nest and never got a response. Also, I had not checked this side of the stand on my first visit, assuming that the nest was gone. They will rebuild sites that have been gone for years – in the same trees. All old structures discovered should at least get an initial check.

29 JUN: Last check here. 3 chicks, 1 @ 35 days, branched and 2 @ 32-34 days. Took photos of the habitat and nest tree. Female was aggressive, calling and stooping. Male came in as we were leaving and called even. He had a familiar voice to me. No bands were seen on either

## 2001



3 MAY: In for initial check. N27 is occupied. Female on nest incubating and the nest has a lot of down on rim.

19 JUN: In for nest check. Successful so far, 2 maybe 3 chicks in nest appear about 20 days. Female came out calling to us (*out with Lia Vella*) and Lia said she saw the male fly away in the stand.

*Did not visit/check again this year.*

## **2002**

30 APR: In for initial nest check. Female on N143 incubating. Took 2 photos of this site. My sense is getting good, I should get use to it by now. As driving on road to here I thought that if they are here this year, they would be in this old nest in the dead PIPO. So I parked on this side to check this first and she was there.

14 JUN: In for nest check. 3 chicks in nest still wooly down, no pin feathers, barely moving, all @ about 20 days or less. Female was perched on nest rim the whole time and did not move but just watched me. Male was in stand and flew off when I first arrived- off hunting-O.

4 JUL: In for nest check- final. 3 chicks @ 34-36 days. All are standing at the nest rim looking out. One adult, female?, was perched in the tree and flew out over me to perch and call as I scoped out the nest.

## **2003**

8 MAY: In for initial nest check. Checked on the original nest first, but it is unused. Walked the stand, searching all other nest sites and area, but no other structures seen and no sight/sound of goshawk. All nests are up but unused. I heard a crashing of an animal move out of stand as I walked – was big and heavy, probably a black bear. I have seen one in here years ago.

25 JUN: In for second called search. Unoccupied. Good thing I saw the family of GRJA when I first started – very good mimics. At first station, I heard a call coming from the nest area then moving down the meadow. I searched all of nest stand and down the meadow and back again, but no sight/sound of goshawk again. I did see a small accipiter (SSHA?) come in to check me out but then split fast! Mimics in area indicate goshawk are maybe around, but not in this stand.

## **2004**

27 APR: In for initial nest check. GHOW on N27. Stayed put on nest incubating. Other nests still up and OK but unoccupied. Walked the stand, but did not do any other called search here this year.

*Did not visit/check again this year.*

## **2005**

22 APR: In for first check. Unused- searched stand area. No sight or sound of goshawk. All nest up but in partial condition. I did find a new partial structure I had missed. This is near #143 along the ridge on way to #27- between these two nests. Marked as PEAX 03 (*now #213*). I can't remember right now of when this might have been used- have to look back in records as to when I saw a goshawk in here but didn't find the nest!

*Did not visit/check again this year.*

## **2006**

3 MAY: In for first check. Just walked the stand around known sites. 2 nests in partial condition, almost gone. Original nest still there but unused. I had marked an X nest in 2005, but didn't see it this year. Gone? Or I missed it?

*Did not visit/check again this year.*

## **2007**

13 APR: In for first check. Occupied –drove to top of stand to view #27 and as walking up to OP, heard what sounded like a COHA call. Then an adult goshawk flew up into a snag to view me. Looks like female with fluffy tail coverts. Possible that the call was her- she just has a scruffy voice. Will come back in May to verify which nest is used, but predict it will be #27.

18 JUN: Nest check. N#27 is unused. Searched stand again and did not find any nest used nor goshawk. Had good mimic beg call and followed it to NE and checked but nothing. So maybe it was too early to come in here this year and they left, perhaps they were rebuilding #27 and they stopped, or perhaps it was just a hunting male in area.

## **2008**

4 JUN: In for first check. Unoccupied –walked the whole stand, still only 2 partial nests. No sight or sound of goshawk.

*Did not visit/check again this year.*

## **2009**

27 MAY: In for first check. There is/had been a prescribed burn ESE along road 3925 up to Dry Soda road. The burn sign is just on other side of road 215 that borders this territory. Unoccupied –most nest sites gone now.

*Did not visit/check again this year.*

## **2010**

15 MAY: In for first check. Drove down the road that comes off of Slaughter Ridge to here. Never have been able to take this road before- it has been opened probably because of burning in past years. Occupied –female on nest incubating. New rebuilt structure of one I marked in 2005 (#213). I had used the caller 2 times, and down by the meadow I got a good GRJA mimic. It could possibly have been 1 beg call from female, but at that time I also got a close fly by inspection from male goshawk. Followed him down the meadow area searching but then came back up to find the nest #213. It didn't look used at first, but saw 2 small bit of down on rim. Can walk up the hill, game trail by nest, and get a good look into nest. No vocal response to caller at all yet female stayed tight on nest with male in stand, giving only a silent fly-by.

Sometime in Jun: FS crew went to check on status- Successful with 3 fledged.

## **2011**

30 Jun: In for measurements and found nest #70 rebuilt and occupied with at least 2 chicks @ 20-24 days or more. Female in stand stooping at me. Late fledging again this year? And this is the second time a nest has been rebuilt in the exact same spot, 2 nest trees in here had this occur.

## STARR CAMP

STR <sup>19</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						Historic Windfall area checked
1993	32	6/23/93	N	S	1	Trap and band both Female and Male
1994	46	5/31/94	N	S	1	
1995	63	5/18/95	N	S	3	
1996	46	4/24/96	Y	S	3	
1997	104	5/10/97	N	S	2	
1998	32	4/22/98	Y	S	3	
1999	104	4/27/99	Y	S	3	
2000	142	6/13/00	N	S	1	
2001		5/3/01		UNO		
2002	155	4/30/02	N	S	3	
2003	32	5/8/03	Y	S	2	
2004	169	5/25/04	N	S	3	
2005		4/25/05		A		
2006		5/3/06		UNO		
2007		5/7/07		UNO		
2008		5/5/08		UNO		
2009	32	5/27/09	Y	S/F		
2010		5/3/10		UNO		In Windfall area again-see notes
2011		5/27/09		A		In Windfall area again-see notes

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The habitat here is classic large Ponderosa forest with a healthy multistoried canopy layer. This has been one of the most successfully occupied territories (a 72% usage rate). This is a large nest cluster even though it is very close to the Starr Campground and Highway 395. An old site called “Windfall”, discovered during a timber sale in late 1980’s, is only 1 to 1.5 miles due west of Starr in the next drainage. Windfall was one of the historical sites re-visited in 1992 but found to be cut over and the nest abandoned. It is interesting to find that after almost 16 years that “Windfall” is apparently being used again when goshawk activity was noted here in 2010 and 2011. It is quite possible that Starr and Windfall are alternate areas of usage (see Discussion Section). It is also encouraging that since Windfall area has been left alone for several years, the habitat has rehabilitated in some way and is again suitable for nesting.

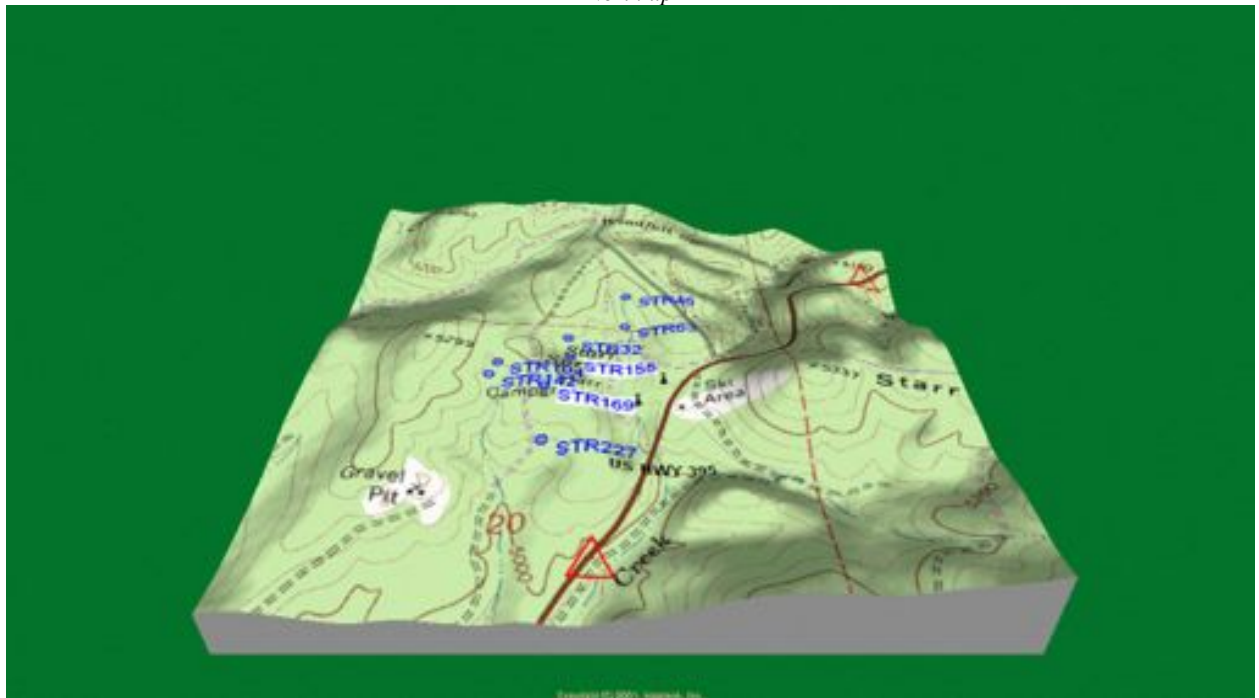
Trapping and banding of both the female and male occurred in 1993, but these banded individuals were never seen again. Also, in 2003, a BSU student obtained feathers from the juveniles to be used in an isotope study of goshawk in the Greater Basin area (Smith and Dufty 2005). In 2003, this is one of the territories where I tested the early detection procedure as proposed by Penteriani (1999) (See Penteriani Listening Test section).



View of stand containing Nest #46 and #63  
Taken in 1996



North up



STARR CAMP

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
STARR CAMP -32	TAG	5180	PIPO	38	145	40	240	12 to SE
STARR CAMP -46	TAG	5192	PIPO	24	180	40	295	10 to SSW
STARR CAMP -63	TAG	5150	PIPO	39	280	80	300	12 to SW
STARR CAMP -104	TAG	5183	PIPO	29	104	80	330	13 to SW
STARR CAMP -142	TAG	5179	PIPO	26	130	80	10	5 to E
STARR CAMP -155	TAG	5170	PIPO	24	136	60	340	9 to E
STARR CAMP -169	TAG	5183	PIPO	31	180	40	290	9 to SW
STARR CAMP -227	TAG	5099	PIPO	26	122	80	200	15 to SE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
32		A	I	I	I	I	A	I	I	I
46			A	I	A	I	X	X		
63				A	I	I	I	I	I	I
104						A	I	A	I	I
142									A	I
155										I
169										
227										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
32	P	A	I	I	I	I		A		I
46					X	X				X
63	I	X			X	X				X
104	I	I	I	I	I	P				X
142	I	I	I	I	I	P				X
155	A	I	I	I	I	I				X
169			A	I	I	I				I
227				I		I				I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 488 acres established around this nest cluster in 1993-1994 according to FS records

### Recordings

In 1995- Juvenile vocalizations [starr\\_juv\\_95\\_Jun19.mp3](#) and [starr\\_juv\\_95\\_Jun23.mp3](#)

In 1996- Female adult vocalizations [starr\\_96\\_Jun11.mp3](#) and [starr\\_96\\_May28.mp3](#)

### Trapping and Banding History

In 1993- Female and male adult: They were never known to return to the Malheur (see Figure #4).

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### STARR CAMP

#### 1992

12 AUG: 0730- Fall Mt Quad- on road #383(283) to visit historical nest site #1= Windfall TS. Nest is in aspen tree as noted but not active this year. No sight or sound of goshawk, no white wash nor down. Nest is small, perhaps some has fallen away but still small compared to other goshawk nests seen. Cut unit #12 to ESE side of drainage, cut comes right down into drainage. The nest tree and its neighbor tree are marked with orange paint, but I wonder what "mitigating" measures were really taken here!!

Visited historical nest site #2= East Windfall Ck. Up road #1542 from junction with #456 approx. .35 miles. Have marked a small PIPO on E side of Rd. with 2 green/black flagging, stand on the 2 large stumps beside this and look due E, large LAOC in bottom of drainage, 2<sup>nd</sup> tier of branches. Nest looks loose deteriorated, no down or white wash on rim, looks inactive, no sight or sound of goshawk. The drainage looks good, some of the blue lines have been blacked out, I suspect that this and other draws to the S in this area would still be good habitat. Must census this area again in Spring next year.

#### 1993

23-Jun-93: Working with K Haines this year calling her area by Starr campground. On road# 4920, adult goshawk came out, perched and watched me. We searched area above CG, walked down road#462 off of #4920 to the spur track that leads to old camp site and saw her perched at nest. This is #32 just NW of CG. Drove around to CG to get bearing and find good OP to look at nest. 1700: In to set up trapping site. 1 Nestling approx. 14-22 days old. 1 adult in area vocal and defensive.

25-Jun-93: 0430-0630: Trapping and banding, caught female at 0500, released at 0615; caught male at 0535, released at 0625. First bird caught, thought it was male. It had been perched in another tree and had not come off the nest. This one was very feisty and caught Blair's (*member of OSU field crew*) finger and bit Karen. Cam (*Cam Carstarphen*) and I took this out to truck to band, when they re-set net and promptly caught a smaller goshawk. So this one was the male and the female had not been brooding on nest. Valuable lesson to not go on size alone - we needed to check the brood patch!! These were both smaller goshawk than the others we had caught. They are banded in reverse order, with male left leg and female right. Noted on banding card. Notes on banding on pages 93-83 to 93-86.

07-Jul-93: 0530: 1 adult observed at nest with stick, nest building? Heard nestling but did not see. Adult was vocal and defensive.

13-Jul-93: 0700-0735: 1 Fledgling calling and doing short flights in nest area. No adults seen or heard.

#### 1994

27-Apr-94: 1200-1600: Stand watch, 4 hrs. Territory established on evidence of goshawk calling NE of stand and sighting a pair of birds in stand that appear to be goshawk, but not a real good ID on them. Long detailed notes on pages 94-11 to 94-13.

31-May-94: 0930-1005: Walk into nest #32- appears inactive. Heard goshawks call from N (30 degrees) from nest. Searched area and found new nest #46. 1 adult vocalizing and flying around new stand, down on nest. Noted location on map and left. Go down 0.3 miles on road# 4920 to flagging, bearing of 242 deg. and walk about 80-120 paces to nest in PIPO near drainage bottom. Still a good drainage in this area but a lot of road work activity was going on during the breeding season here. They were building the snow park out at the campground road which might have disturbed them early in incubation. Perhaps that is why the nestling is so much younger than our others.

22-Jun-94: 0950-1026: Nestling check- 1 in nest visible, still very small @ 9-12 days old. 2 adults in area vocal and defensive. Possible that more could be in nest lying down, since they are so young.

14-Jul-94: Fledgling check- 1 still at nest @ 36-38 days. 2 adults present, vocal and defensive.

#### 1995



21 Apr 95. Both nests (#32 and #46) are unoccupied as of this date. No sign of goshawk in area. After checking both nest sites, I sat and watched at top of drainage on road# 462 for approx. 2 hrs. Snow on ground about 2-3 in. and there was snow on the nests as well. PFA: 488 ac. established 93-94(?). This was done after the logging of the Windfall TS that harvested units close to #32 stand.

18 MAY : In to do search. Found the new nest #63 down drainage from #46. The PIPO is to the S very near one of the orange snow course posts. The nest is small and cryptic in a pine bow out on the limb. Female is very aggressive and stooped me and was calling while I was there. I heard the male respond off to the W. Female has no bands. Brood patch well developed, must still be on eggs – or very young. Cannot see well down into nest. .

19 JUNE: In to do first nest check. Still raining, so waiting for a break in weather to go in. 3 chicks, 2 @ 32-34 days and 1 @ 30-32. One was on branch by nest when we arrived (Ted Fremd with me). Heard adult way off to NE a few times but never came into nest area. Recording of 1 juvenile at nest and one of the older ones gave a series of alarm calls. At first, I thought these alarms were from an adult that had come in, but TJF was looking through the scope and said it was the juvenile making the calls. I was about 15ft from base of tree below the nest shooting up to nest – record level was 85 dB. It started to rain/snow so we left.

23 JUNE: in for final check. 1 fledgling at nest still, on branch, and others gone. Followed 1 fledgling as it beg/alarm called in stand. Got a recording of this. Never did see any adults again. So, for this year, I did not get any recording of adults at any time. Collected prey remains at base of tree, looked around for plucking posts, but none found. I could hear the chicks beg calling as I was walking out and at the car.

21 JULY: In to take measurements of tree and stand at #63.

## 1996

24 APR: in to do 1st nest check. Female is quiet and incubating on nest #46. Other nests still intact. It has just finished hailing/snowing which it has been doing all day. This is such a peaceful wonderful stand. This is the first year that both Starr and Mason are both occupied – it does show that Mason is its own territory, not just an alternative for Starr.

28 MAY: First nest check. Female came out to me and called as I was walking to OP, got 1st recording of her. Could only see a downy back in nest, still young could be up to 14 days old. Female appears to be bandless and she did not stoop close, stayed up at top of trees while recording.

11 JUNE: Out with *visiting* Mom today. 3 chicks in nest @ 24-26 days. Female flew out when we got out of car. While at the OP she did not come in close, but I got 2<sup>nd</sup> recording of her.

Around 19 Jun – BVRD people checked the status of nest and only reported 2 fledglings. (I was out with TJF neck surgery)

25 JUNE: Checked on status myself. 3 fledglings – 2 branched and 1 still on nest. Female was more aggressive this time and stooped close right when I got there.

## 1997

24 APR: 0720 Light precipitation occurring and snow still on ground. Walked stand briefly of N46 and N63. Both nests unused and in good shape. Took measurements of N46 but didn't stay long in case unseen birds in area. Checked on N32 and it also is unused. No sight/sound of goshawk. Seems like I am not finding many nesting birds as I did this time last year! I had found 9-11 nests on the first check last year. All must be using new nests- or because of the wetness and cold they are all starting later this year.

10 MAY: In to do search but no calling. Found new nest site – female was calling and flying high but defensive. I did not find the nest this time, for she had been off the nest about 20 min. while I was searching. Had searched along the drainage of #46 and 63, then walked over to the #32 area to check nest. As I was sitting by this tree, I heard her alarm call to SW up on the ridge. Walked up hill to top of knoll where there is a circle of large PIPO. I searched a little into the drainage further on but she was agitated and I had spent enough time already. Female has no bands. I marked the area (which turned out to be at the nest tree) with flagging and to get to this follow the 2-track, past the turnoff to #32, down into the drainage that is to the S of #32 area. The road continues on eventually coming out in the snow park area to S.

22 MAY: In to do another search for nest. Found it in the PIPO where I had marked area with flagging. She was off the nest, watching me at first, but then started calling. Nest is high in PIPO away from the bole - on E side of road on slope. OP is ok at top of hill where I 1<sup>st</sup> saw her in the ring of PIPO- flagging marks it. Hard to see into nest though, but there is down on nest rim.

5 JULY: In for final check. Success: 2 already fledged and flying in the stand. One adult (FE?) was there and stooped and called at me while I was marking the tree with flagging.

## 1998

22 APR: In for first check. Nest #32 is occupied. Out with Dorman and Phyllis Gregory to train them – first year they will help. Had walked the drainage of #46 and 63, but no goshawk (#46 was gone it appears). Walked in from the campground side to #32 and saw her on the nest. As we watched her, so they could get a good look, she came off the nest and started calling. We left. This is good that this indicated that again this is the early territory.

16 JUNE: Out with Dorman and Phyllis to check nest they had found and do 1<sup>st</sup> nestling check. 3 older chicks seen – 2 @ 26-28 days and 1 @ 24-26 days. No adults seen or heard. That was the last check of this year.

## 1999

27 APR: In for first check. Nest 104 is occupied. Female on nest incubating. Found a good OP of the opposite slope to the WSW of nest. As walking down road go uphill to right at the 1<sup>st</sup> big stump. Walk up to a leaning PIPO to look back at nest which is high up in the tree near the bole.

22 JUNE: In to do nestling check. Probably 2? chicks in nest, could only see tops of backs, still downy and young @ 12-14 days maybe. Female stooped low at me as I walked in and was calling all the while I was at the OP. She is bandless.

6 JULY: In for final check. 3 fledgling – all greater than 36 days, and one already branched. Female is very aggressive again. Very little wh/wa on ground below tree.

## 2000

20 APR: In for first check. Out with Sarah Herve and Matt Smith. Unoccupied – walked thru check all 3 nest areas but none looked used. No sight/sound of goshawk.

13 JUNE: In to do search and use caller. Found new nest. Down by #104. As left car, I heard her beg call and when walking down road toward 104, I heard the male reply from off to the W. She called and stooped me while I was checking 104 and then she flew off down drainage. I walked that way and saw nest right along the road in large PIPO high up and more exposed than other nests here. I walked uphill to get a good OP, then GPSd the tree as (STR00)(now # 142). There is not much down on rim but a bit of wh/wa on ground. Could not see into nest nor any heads/backs so could not gauge age yet.

29 JUNE: In for nestling check. 1 chick @ 32-34 days. Female aggressive as we walked into stand. Out with Sarah Herve to take pictures. Believe that Sarah and Matt saw this on first entry – it was being worked on at that time, they had just built up the base of nest.

## 2001

3 MAY: In for initial check. Possibly a new nest being built here. Out with TJJ (*Ted Fremd*). Walked down by #32, further down along 2-track and saw a new structure, looking newly worked on (#155). GPSd it as “2001”. Could not see into it at all and no other goshawk seen around. Feel 85% certain that this is a new nest for this year but need to come back. All other nests are unused or gone.

19 JUNE: In to check nest. Out with Lia Vella. Unused! No one is there, the structure doesn't look like it received anymore work. Perhaps goshawk left it undone, or could be a structure, old one, left from years past that I have not seen before. No sight/sound of goshawk as we walked all the areas again.

## 2002

30 APR: In for initial nest check. Female on nest incubating. This is the nest that I saw and marked as built in 2001, but was not used and/or failed last year. I am sure this time that I saw the female on the nest now, I was not sure last year about this. A feather was on ground below nest. I marked a large PIPO as a good OP.

13 JUN: In for nest check. 3 chicks in nest @ about 14+ or 21 day range - all downy, no darkness around the auricle yet and about 1” of primary feather erupted. All are lying down but they can use their heads well. No adults seen. I need my book back, loaned it to Sarah to copy Boal's paper.

26 JUN: Final check for this year. All 3 chicks well and happy - 2 @ 36 days almost branching out and 1 @ 32-34 days. Female was at nest when I walked in and I thought she would be docile as before, but since I walked right below the nest this time, she called and stooped a lot. She is a big girl, with no bands, and has a catch or ‘hiccup’ to her kek call, very distinctive.

## 2003

10 FEB: First listening experiment. Cold morning about -2 to -5C. 0625 to 0820 sat at B1-ST down in campground at first turn in road. Starr is not as lively as Coal pit with fewer birds heard this early. The highway noise is considerable with log trucks passing in early AM. Heard nuthatches first then raven, robin, chickadees, but no goshawk.

18 MAR: Early listening again. Temp is warmer a bit @ about 30F. Snow pack is reduced for the last week we had a lot of rain and wet snow at higher elevations. Today it is clear. 0525 to 0610 at same point B2-ST( B1 but 2<sup>nd</sup> time thus B2). Time 0541: I heard goshawk kek call from the nest area of last year. This was the first bird call heard. The kek was different in quality, more chirped it seemed. I think there was a faint guk call also, so perhaps both male and female were here. It was just light when the first series of calls occurred. This lasted about 15-20 minutes and the last series was a rapid warbled kekking. Was this during actual mating, or some other contact call? Other birds heard were sapsucker, nuthatches, Douglas Squirrel.

8 MAY: In for nest check. My instinct was right, they did take the original nest #32. Nest is rebuilt well and female is on nest incubating. When I heard them in March, it could have been last year's nest or this one, and when I was driving in to site, I knew it would be this one. I also marked the Snotel site that I will try to get weather info from and to see if this is the same coordinates as listed on web.

27 MAY: In to gauge the age of chicks for this is an early one. She is still tight and quiet on the nest, did not flush or call or even move. Must be incubating still or on very young chicks. I did not see any movement or white heads at all. I flagged an OP site on both sides of entry to the area. I probably will start in from the one from the campground side- you get a clear shot into nest. I put a flag on the fence to start walk in and flagging on a small snag to align to the nest.

16 JUN: In for nest check. 2 chicks @ 17-19 days. I went in from the campground side and she was perched on the nest and watching me the whole time. She did not get agitated or flush off nest. One chick was active and watching me turning around and preening. The other was asleep on far side of nest. They will be about 24-26 days by next Monday when the student that wants to take feather sample for isotopic work will be here.

23 JUN: Met Rhonda and Adam Smith from BSU at Starr campground in AM. We spent about 50 minutes at this site. Adam climbed tree to nest and lowered the chicks down in a backpack. Rhonda measured and clipped the tip and coverts of the 2<sup>nd</sup> primary of each chick- also banded with FW metal bands. A male and female chick by measurements @ about 28 days. The adult stooped and hit Adam a few times, but not aggressive to us on the ground. Female was still calling in the stand when we left, so perhaps all will be OK. We then went to Geary to do the same, then they left to go to Burns and onto the Deschutes.

25 JUN: In to check on chicks to see if they are alright. Both are sitting in the nest looking well, one has something in the nest (prey) that is keeping her attention. All looked well and they are about 28-30 days.

## 2004

30 APR: In for initial nest check. All nest unused, but when I first parked, I heard a faint beg call near 32 nest and toward the N46/63 I thought. I again heard beg call back toward N32 when I was searching the draw to the north of this. But I did not see any new structures. I think they are here but I will have to come back and search later.

25 MAY: Went out early 0430 to sit and listen at stand. May has been cold and rainy this year. Sat and listen until 0630- lots of bird song and logging truck traffic (Flagtail fire sale). Found the new nest and it is Occupied. This was a very unusual find. I had walked all the way down the 2-track that leads toward S along where the newer nests are, but the habitat peters out. So walked back up and at about where the last new nest is here, I heard goshawk calls. They were GRJA mimics, but very persistent. I walked toward them at the top of slope where a good PIPO stand is. I then saw a new nest, looked like it had some wh/wa on it but not a lot of down. Nobody was on the nest so I walked beneath it to check. There was wh/wa on ground also, but I was not getting any response from any adult. At this time, the GRJA came back into a nearby PIPO and was chattering and hopping around some branches. I looked at it and saw that it was hassling an adult goshawk that was just sitting there, silent, watching me the whole time. If not for this jay's behavior, I would not have seen her. I marked tree "STR 04" (*now #169*). She did fly out with me to check that I had left, but no vocals at all. I flagged the walk to get back into area. Apparently, the eggs have hatched, but she is a very non aggressive female. I should have been called at in the least at this time in the season. Does she really know me??? A satisfying find in that I knew they were here on first visit and found them without calling, but by the jays antics. I always knew it was a sign of goshawk occupation with a good mimic around, and now this is proof. They have never directly lead me to the nest like this before though.

16 JUN: Out with Chadski (*friend*). In for nest check. Successful with 3 chicks. 2@ 28-30 and 1@30-32d. All sitting around the nest rim and watching us. Female is also on the nest standing watching us not at all agitated. All calm focused on us. She did not

ever call or fly off. This would have made a wonderful picture with the NPS video cam. Great shot of all 4 goshawk intently looking at us.

22 JUN: In for final nest check. Successful with all 3 branched. 2 @ 38 plus and 1@36-38d. No adults seen or heard. All three calm watching me even as I was underneath tree marking nest site. This knoll is right above Hwy395, just below us.

## 2005

24 APR: In for first check. Out with TJF (*Ted Fremd*)-in area about 1-2 hours walking the stand checking all nests and area. Unused, No sight/sound of goshawk.

6 JUN: Not able to be out in field much lately with TCPC project at NPS and it has been cold and rainy. Big rain yesterday and this AM, now partly cloudy at 42 deg. at home. May be too cold to call but will go up to see. Want to try the new digital caller, but weather is a problem. How sad- it is still sprinkling up here and cold. So no calling, but I will walk and spend time here to see if I can pick them up. ACTIVE-They are here but I'm not sure where. I did find a new nest, high up in tree "STRX 05" ( *now #227*), but didn't see much white wash on ground or on nest rim. Too high to see into, but I did get checked out 2 times by goshawk circling over me. Once coming from this nest area and once going away from this area. They circled high and did not call but low enough for a check out. Still spitting rain/ snow at times so will not call but again will have to come back to find them. Also, when walking down into draw before I found "X 05" I really felt like they were right here somewhere. I must have been being watched to get this feeling. So with that and 2 sightings of goshawk checking me out- It is Active.

20 JUN: Nice clear sunny day. Temp= 65 deg. It will get hotter- some T-storms heavy in last few days but not too bad overall. Final check on nestlings IF the nest I found last time was the being used. Not found! The new nest is not used. There are good GRJA mimics here though. I walked around nest stand and made 4 call stations, but no response except from a GRJA. I walked a little to the west into the semi cut-out draw but found nothing. So Active status having picked up a goshawk here, but no nest site found this year.

## 2006

3 MAY: In for first check. Had jury duty this Am, so out later. No sight/sound of goshawk. The nests that are still up are good but not used. Searched known stands- now will go down to gravel pit south of stand and work back just in case. Highway dept. is going to blast open and expand old pit here and KS (*Ken Schuetz*) has set deadline for July 15<sup>th</sup>. Walked draw from pit up to southernmost nest site and down drainage to Snow park. No structures or goshawk seen. No sight/sound of goshawk. So none in immediate area- Unused as of now.

20 JUN: in to do a few calls. Called along the stand down road in middle. No sight or sound of goshawk. Picked up a STJA mimic though.

## 2007

7 MAY: In for first check. No sight/sound of goshawk. Walked and checked all known sites and area. Took measurements for FS records.

*Did not visit/check again this year.*

## 2008

5 MAY: In for first check. No sight/sound of goshawk. Walked stand, no nests occupied and no new ones found.

*Did not visit/check again this year.*

## 2009

27 MAY: out with TJF (*Ted Fremd*). Another warm sunny day. Occupied with female on nest #32 incubating. This is the original nest site found.

*Did not visit/check again this year.*

## 2010

3 MAY: In for first check. Unoccupied- No sight/sound of goshawk. Half of the nests are partial and most gone now.

15 MAY: At snow park/ ski area across the highway from Starr territory- to the east. Spot checking habitat along the power line to see if any goshawk in area. Called a few stations down draw toward highway and then south to another draw – walking up this to east toward a waypoint where I had adult goshawk call in 2004. Decent habitat here, but no sight/sound of goshawk nor any new structures found.

*Did not visit/check again this year. FS crew noted activity in Windfall.*

## **2011**

4 May: warmer and sunny at 52\*, no precipitation in the last 24 hours. Have to walk in from upper CG, road leading down is snow packed. Tagged and measured all known trees and none being used, BUT territory is Active. While marking #104 a goshawk flew up from NNW- from the old Windfall area (see 1992 notes). It circled close over several times and flew back that way. After we finished marking nests, we (*Ted Fremd*) walked a ways down into draw toward Windfall. Saw what might have been used as an old nest in a LAOC, but no sight or sound of goshawk. June Galloway (*current wildlife biologist*) told me that last year her crew did find evidence of goshawk in this area. Don't know if they found a nest or just activity. I have to ask her to email me the locality so that from a historical perspective it might be interesting. It would be nice to see this shift back to the old stands from late 1980's, if the habitat has rehabilitated. Perhaps this is an example of "fallow field" idea, eh? Also heard a COHA just to NW of the top of Starr CG, down toward the lower camping sites. Got called at briefly by a RTHA while marking lower nest site of #227.

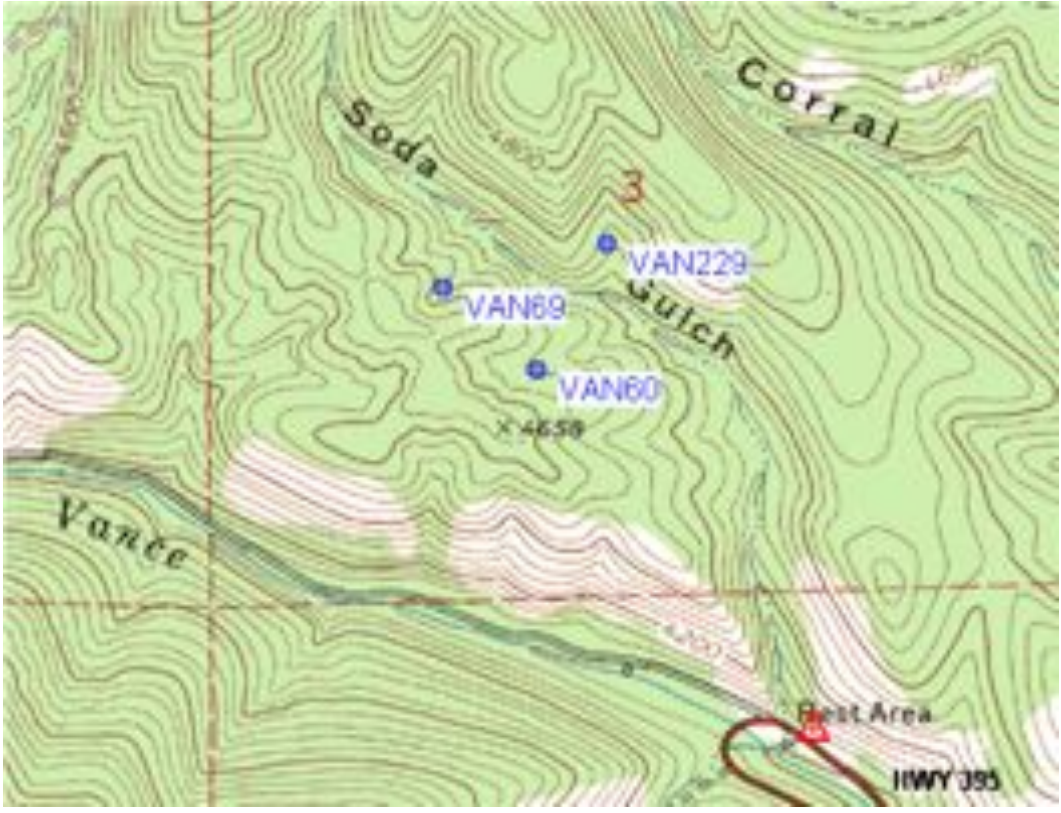
## VANCE CREEK

VAN <sup>32</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994	60		N	S/F		Found late in season
1995	69	5/3/95	Y	S	3	
1996		4/24/96		A		
1997		4/29/97		UNO		
1998		5/6/98		UNO		
1999		5/10/99		A		RTHA also observed in area
2000		5/23/00		UNO		Goshawk observed in area
2001		5/1/01		UNO		
2002		5/17/02		UNO		GHOW observed in area
2003		5/27/03		UNO		
2004		5/13/04		UNO		
2005		5/23/05		UNO		
2006				DNC		
2007				DNC		
2008		5/27/08		UNO		Cooper's Hawk nesting in area
2009				DNC		
2010				DNC		

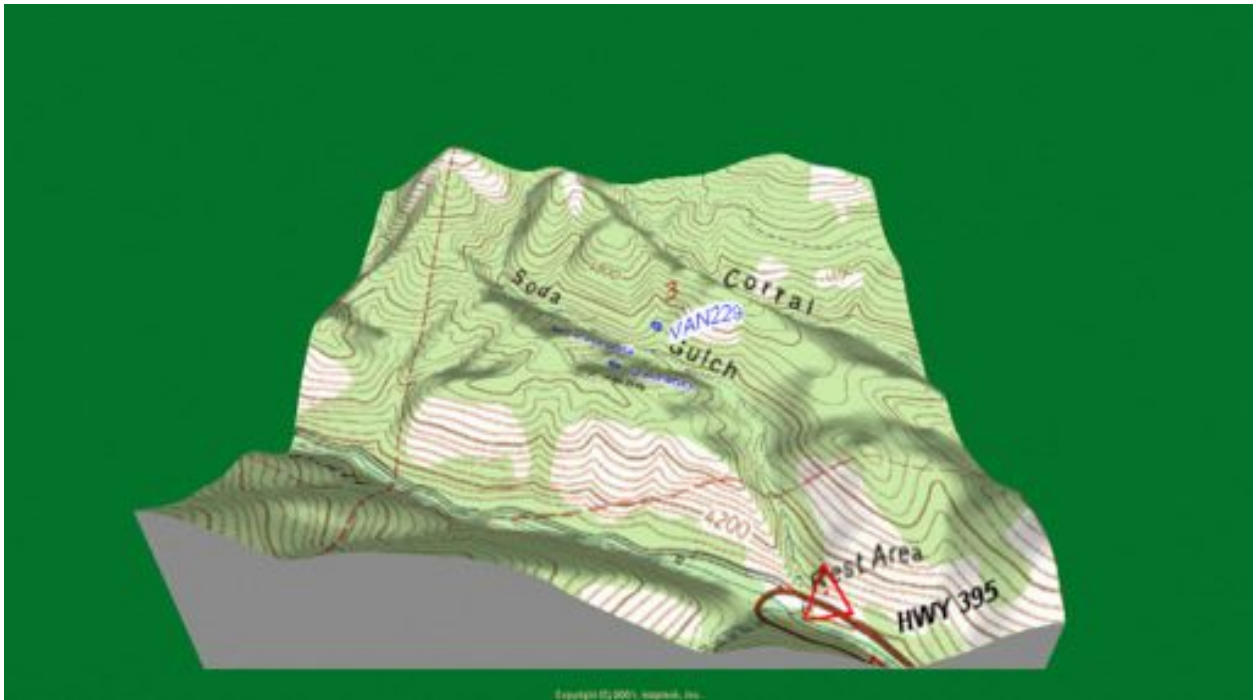
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory was found during field surveys for Karen Haines's masters' thesis (Haines 1995). This interesting area has had evidence of several species apparently utilizing this draw; but, in many years, these sites could not be found. Other than goshawks, COHA, RTHA, and GHOW have been observed using this stand.

Soda Gulch is a fairly steep draw that is surrounded by logged units. Only the bottom of this draw, where a small ephemeral stream runs, was left uncut. The majority of the trees in the forest mix are Douglas fir in varying degrees of health. The terrain in this region is a patchwork of cut-over and clear cut units with these small islands of habitat in between. I searched around this draw to the southwest along Vance Creek and to the northeast along Corral Gulch and suspect that some of the stands in these areas may house alternate nest sites. The specific years I did survey these other draws, however, no nesting goshawk were discovered.



*North up*



VANCE CREEK



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
VANCE -60	TAG	4610	DD PSME	12	S	25	80	21 to N
VANCE -69	TAG	4635	PSME	24	360	40	330	24 to NW
VANCE -229 (OLD x)	TAG	4518	PSME	24	145	40	290	25 to S

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
60			A	I	I	I	I	I	I	I
69				A	I	I	I	X		
229		I	I	I	I	I	I	I	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
60	P	P	X	X	DNC	DNC		DNC	DNC	X
69			X	X						X
229	I	I	I	I			I			P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 484 acres established according to FS records. This PFA is made up of several small parcels it appears and I am not sure that these represent a continuous geographic area.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### VANCE

#### 1994

K. Haines found this nest #60 late in this season while surveying her study area.

#### 1995

3 May 95. This is a nest that K. Haines found late last year on her study area. Walked into the drainage to #60 it appears to be unoccupied. Walked down and up drainage to the old nest that is right on road.#868. We had noted this old nest (*now #229*) in '93 when we first surveyed her study. Both are in PSME. It is unoccupied but in decent shape still. Stayed in area approx. 30-40 min. and no sight or sound of goshawk.

26 MAY: In to search and calling. Found new nest #69 (Directions written on pgs. 95-27). Nest also in PSME well surrounded. When I first started calling at head of Soda Gulch on 3<sup>rd</sup> station, she came out and called at me one time. I then spent the next 30-40 minutes searching for the nest. Even walking close by the nest she did not come off it again. She sat watching, and by her behavior, she is probably still incubating eggs or on very young ones. Good OP site above nest stand just off of road#871.

19 JUN: In for nest check out with Ted (*Ted Fremd*). Number of chicks in nest- 2 @ 24-26 days and 1 @ 28-30 days. Female gave alarm call as we got out of the truck – a ways away from stand. We walked to OP site, but I had to walk down close to nest to see anything. She was perched at top of tree watching about 50 ft from nest. She did not flush at all and is very non-aggressive. It started to rain heavily so we left. No recordings taken today. She landed at nest when we were leaving and the chicks woke up seemingly not concerned with us at all.

27 JUN: In for 2<sup>nd</sup> nest check. 3 chicks still, 2 @ 36-38 and 1 @ 34-36 days. No recording again, so non aggressive! No recordings at all this year of any of the adults or juveniles. One adult did a food drop right as I arrived and stayed in stand as I collected pellets. I was there about 50 min and the adult never came out at me. When I walked out, the adult landed at nest and started to feed. One chick was feeding itself while I was at nest. Looked for plucking post briefly but no luck.

18 JUL: In to do measurements at both nest, #60 and #69. While at old #60, an adult, believe it was male by voice- perched and did 2 short calls at me. He flew off and I can now hear juveniles begging down in the drainage to north by the #69 nest.

#### 1996

24 APR: in to do 1st nest check, both nests intact and unused. Searched a little- no sign of goshawk. Drove around to the old nest right along the road, never been used yet, but still up also.

7 MAY: In to do silent search of area. Spent 6 hrs. in area. Was going to use caller, but no batteries also - it is too early really to use it. Territory is occupied but could not find new nest. Both nests seem unused still, but saw and heard adult goshawk alarm call and stoop into stand in vicinity of nests. Walked back toward the nest stands (#69) and heard another series of alarm calls. I waited about 10 min and heard another alarm call near nest #69. I spent a lot of time searching here and down in drainage along its length, have checked #69 several times and it is unused. This alarm and display was a response to something else, not me for I am not using caller, and will have to come back later.

28 MAY: In for called search. Called 6-7 stations along roads that run through where I heard goshawk display last time. Spent 1 hour calling and searching. No sight/sound of goshawk! Will not have time to come back here to search again this year. Will say this territory is used "active", but no goshawk or structure found. Could be an unpaired male perhaps, could be a territory that was started but not finished this season?

#### 1997

29 APR: 1730 Checked on nests and both are unused at this time. Both still up, but no sight/sound of goshawk.

25 MAY: Walked through stand without calling, walked drainage for about 2 hrs. No sight/sound of goshawk and none of the nests are used.

## 1998

6 MAY: In for first check. Walked and checked all nests. All still up but unused. No sight/sound of goshawk.

*Did not visit/check again this year.*

## 1999

10 MAY: Tried to get into check nests, but road has closure at junction with road 3920. It is a long hike into stand now, will have to come back.

19 MAY: Had to go FS office to get permit to go into area. Drove up to area to walk it. As I was walking to N#60, above the junction of roads where I park, I saw adult and immature RTHA circling with an adult goshawk. There were no calls or displays, but looks like goshawk are in the area somewhere. This may have been a casing out of territory by these two species. I have to find the alternative nest site that is used here. Perhaps call along road 3920 in main drainage and adjacent ones from this. Again, this territory is "active" but I can't find the alternate place.

17 JUN: In for search and calling. Marked route taken and used topois in GPS3. Started calling at the road closure on 3920 and called up to and through nest stands. Went down the drainage to Hwy 395 then called up road 3920(Vance CK) back to truck. No sight/sound of goshawk at all this time.

## 2000

18 APR: Tired to get into stand, but road closure locked. Will have to check with FS about this.

23 MAY: Walking into stand from road #3920 to search and call area. Only one nest up, #60, but unused. Ran a track log and called stations in drainage, but no response. At the north end of the drainage, near the X nest by road, a goshawk flew off the ridge, circled high, and headed to east. There is a drainage off to the east (along Corral Gulch) that I checked one year way back but not checked since. This goshawk was not real interested in me, a hunting male perhaps. I did see a kill in the stand by the #60 nest, grouse ?? Again, perhaps active, but will call it unoccupied.

## 2001

1 MAY: In for initial check. Walked by nests and around drainage for 1 hour. Nest #69 gone, #60 still up and unused. Old X nest by road still up but unused. No sight/sound of goshawk.

*Did not visit/check again this year.*

## 2002

17 MAY: In for initial check. Possibly Active again. As I came near the #60 (1/2 gone now) a GHOW flew from the stand. I thought that the nest would be used by owl, but did not see any one on nest- it is unused. When walking down to the drainage, by nest X, a large raptor flew silently around me in the trees. No good sight of it, but it was grey-dark and the tail was banded- could have been a goshawk, I believe. Did not find any new structures. Will try to get back to call later. I walked up the drainage and creek that is just up from the road closure on 3920. Good habitat, but steep. It must be an old two-track that leads to one of the old mining claims up here. Possibly call this sometime.

14 JUN: In for 2<sup>nd</sup> search and calling. Saved track as "VAN 6-14-02". No sight/sound of goshawk at all. I did see the GHOW again in area, so the bird that flew by me last time probably was the owl and the grey flash of its wing.

## 2003

27 MAY: In for initial check. Walked in from road closure and walked the nest stand. N60 is partially up but the other on is gone. The old X structure is still up also. None are used though and no new structures seen. No sight/sound of goshawk. A pair of ravens were circling and calling in this area. I probably will not have another time to come into search this territory again.

*Did not visit/check again this year.*

**2004**

13 MAY: In for initial nest check. Unused and all nests but the old X nest are gone now. Walked through stand just checking the nest areas. No sight/sound of goshawk .

*Did not visit/check again this year.*

**2005**

23 MAY: Finally a clear dry day. Lots of rain end of last week and could not get out Temp 50-60 deg, no wind yet and few clouds. Unused. The only nest up is the old X (#229). I walked the stand around and between nest sites and in drainage but no sight or sound of goshawk.

*Did not visit/check again this year.*

**2006 and 2007**

*Did not visit/check these years.*

**2008**

27 MAY: This is one of FS priority areas they want checked. Could drive into stand because gate closure not locked on road. It is overcast with low ceiling today, temp 55deg. No sight or sound of goshawk. I did have a COHA call at me right in the draw with nests. Again only old X #229 is still up. So Coopers is nesting in here this year.

**2009 and 2010**

*Did not visit/check these years.*

**2011**

4 May: Road closure is in place again this year, will have to walk into stand (out with TJF)(*Ted Fremd*). Measured all 3 trees and no known site being used. As walking the stand, no sight or sound of goshawk. Thought as I was putting the little tags on the trees that nobody will ever see these tags probably. And this will probably be the last time I will walk into this particular stand- great contemplation on impermanence.

## **Izee Route**

**Dipping Vat (DV)**  
**Flagtail Creek (FLA)**  
**Izee (IZ)**  
**Jack Creek (JAC)**  
**Larch Stoop (LAR)**  
**North Scotty Creek (NSC)**  
**North Swamp Creek (NSW)**  
**Snowshoe Creek (SNO)**  
**Swamp Creek (SWM)**

## DIPPING VAT

DV <sup>6</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	06	9/1/92		S	1	
1993	25	5/9/93		F		
1994	06	5/9/94	Y	S	1	
1995	67	4/26/95	Y	S	2	
1996		4/25/96		A		
1997	103	5/11/97	Y	F		
1998	128	6/2/98	Y	S	2	
1999	103	5/16/99	Y	S	2	
2000		5/2/00		A		
2001	128	5/12/01	Y	S/F	?	
2002		5/9/02		UNO		Flagtail Fire starts burning 7/14/02
2003		5/3/03		Burned out		
2004						Salvage logging starts April 2004
2005						
2006						
2007						
2008						
2009						
2010						

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

When first found in 1992, this was one of the most distinctive and healthy examples of old growth habitat that I have ever observed on this forest. It was a classic mixture of very large diameter PIPO and LACO surrounding a lush meadow area with an understory more reminiscent of historical photos from the early 1900's. The observations here record one of the examples of adaptability of nesting goshawk after disturbances only in the fact that suitable habitat in which to expand was maintained in the adjacent area. This territory and the surrounding areas are completely gone now after the Flagtail fire.

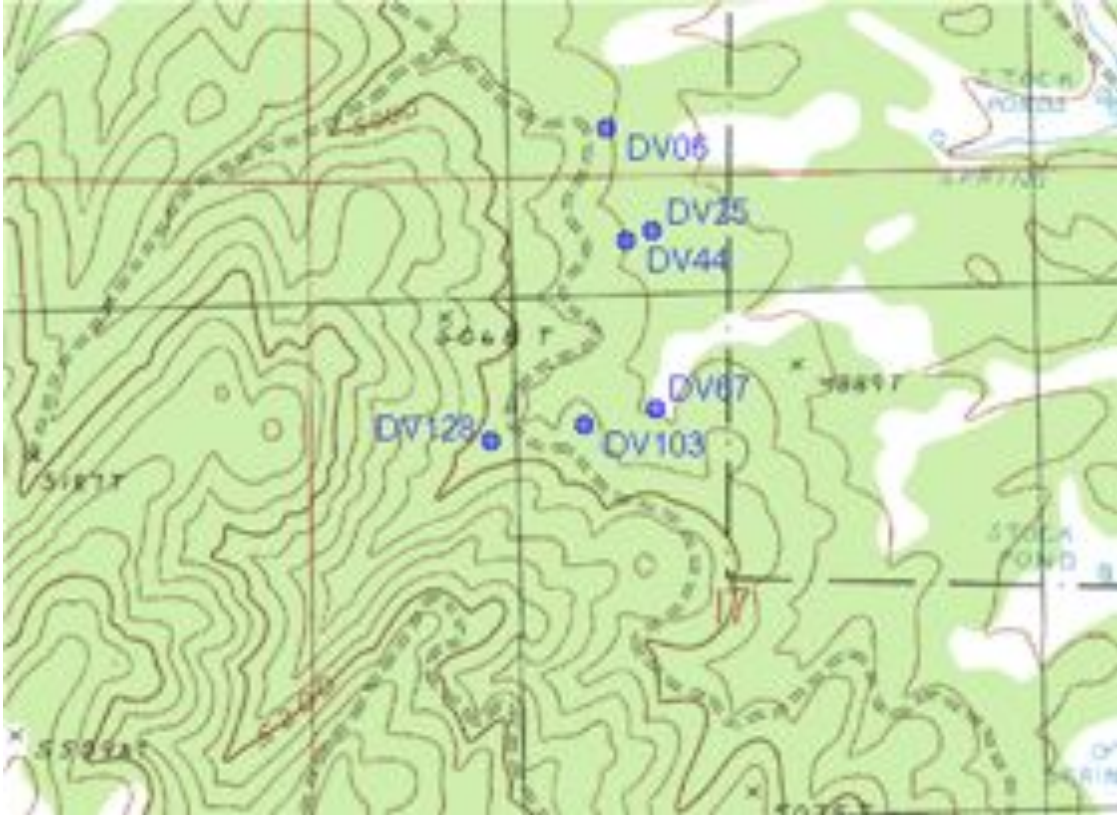
This very beautiful old growth could have been saved from logging in the early 1990s, but the political will and regulations were not in place at the time. The first detection of this goshawk nest cluster (nests #6, 25, and 44 found here) occurred in September 1992 when this area had already been sold as the 96II timber sale. Though the units had not been entered yet nor cut, the timber sale officer in charge of this sale would not renegotiate this unit out of the sale. All of the trees were cut in this unit in the winter of 1993 with only a few of the larger trees left around one nest. In 1994, the first breeding season after the logging, the goshawk did nest again in this one nest - this being the first observation of re-use after disturbances on the Malheur (see Jack Creek (Izee Route) for another example). Fortunately, not included in the 96II sale, there was still a sufficient pocket of this old growth habitat left around the meadow to the south where the goshawks established another nest cluster in the subsequent years (moving about 1500 feet

from the original logged stand). Finally, a PFA was established here in 1995, a little after the fact, attempting to maintain what older forest structure was left in this area.

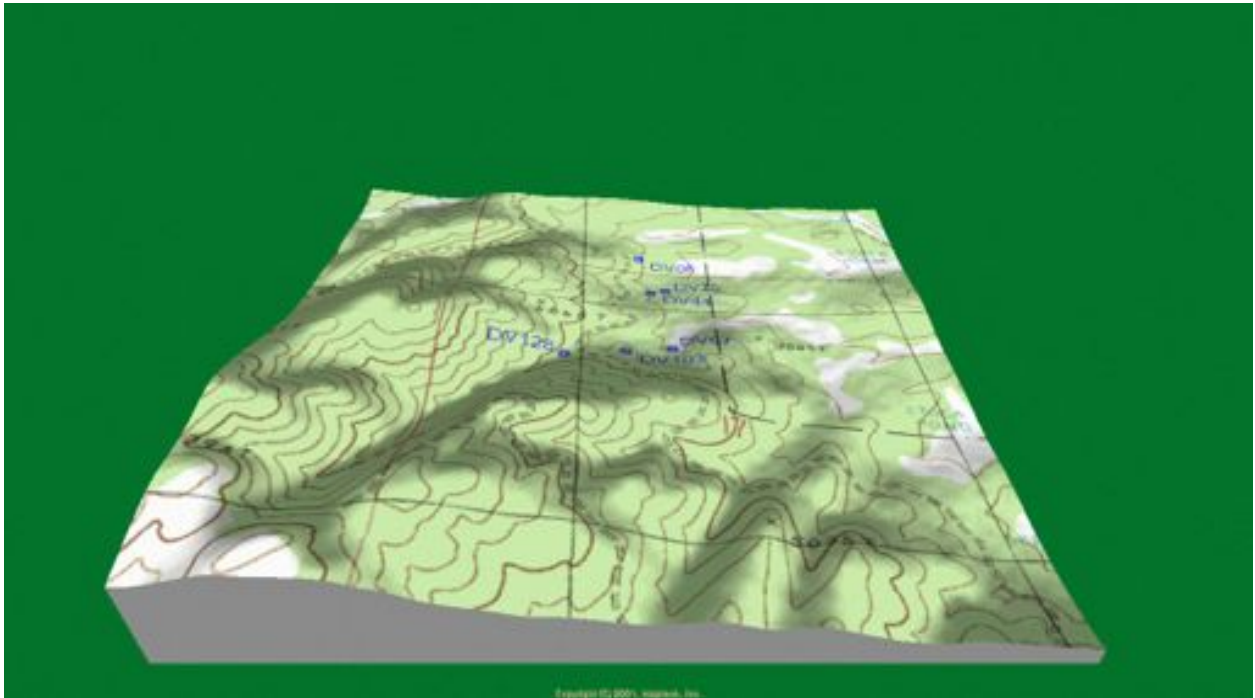
Unfortunately, this was not the last of the disturbances. In 2002, the stands that had been logged in 1993 were “Mach-Traked” (logging debris machine piled and reduced to lower fire hazard), but to no avail. The Flagtail Fire, which was quite extensive, started on 7/14/02 and totally burned this area - 100% of the remaining habitat in the PFA was obliterated. One might surmise (and observations suggest) that if the old growth structure had been maintained and not fragmented into a patchwork of cut over lands with *large* slash piles that burned very hot, the fire destruction would not have been so severe in this area. In April of 2004, the area was “salvage logged” (also see Jack Creek re: Flagtail fire).

This was one of the most successfully utilized territories during the monitored interval. Of the 11 years observed it had a 91% usage rate (10 out of 11 years with nesting or active goshawk activity) even with the disturbances. In 1995, I recorded vocalizations of the goshawk here and she was one of the most aggressive females I have ever dealt with. You can hear these “very close encounters” on the field recordings.





North up



DIPPING VAT

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
DIPPING VAT -06	GONE	4906	LAOC	21	166	50	NA	NA
DIPPING VAT -25	GONE	4887	LAOC	30	S	50	NA	NA
DIPPING VAT -44	GONE	4898	nd	nd	nd	nd	NA	NA
DIPPING VAT -67	GONE	4925	PIPO	21	120	50	NA	NA
DIPPING VAT -103	GONE	4958	PIPO	>15	W	nd	NA	NA
DIPPING VAT -128	GONE	4989	DD PSME	<17	nd	60	NA	NA

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
06	A	I	A	I	I	I	I	X		
25		A	I	I	X					
44		I	I	X						
67				A	I	I	I	X		
103						A	I	A	I	I
128							A	I	I	A

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
06		BURN	LOGGED							DNC
25		BURN	LOGGED							DNC
44		BURN	LOGGED							DNC
67		MOSAIC	LOGGED							DNC
103	X	BURN	LOGGED							DNC
128	X	BURN	LOGGED							DNC

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 444 acres according to FS records. In 2010, told by current wildlife biologist that a new PFA was being researched and considered.

### Recordings

In 1995- Female and male adult vocalizations  
*dipping vat 95 Jun20.mp3 and dipping vat 95 Jun29.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### DIPPING VAT

#### 1992

01-Sep-92: 1 Fledgling flying, perching and calling in area. Marked nest tree and recorded measurements, etc. Alternate nests in area tagged, but not given numbers.

#### 1993

09-May-93: 1110-1305: Stand watch- no sign of goshawk

13-May-93: 0800-0912: Possible adult goshawk near nest site; not a positive ID.

30-May-93: 1730-1800: Walked right by actual nest site without knowing it and still did not get a response to taped calls

15-Jun-93: 1730-1830: Found nest #25 with down on it. Adult kekking nearby did not respond until we were leaving; adult very secretive, and nest definitely used this year.

25-Jun-93: 0950-1115: Watching nest area- nothing. Just as leaving, noticed adult at nest, must have just flown in.

11-Jul-93: 0600-0730: No nestlings, this nest failed. Hear low cluck from goshawk nearby - mild territoriality? No sign under nest of nestlings either.

10-Aug-93: Nest site data collection. No sight or sound of goshawk.

#### 1994

Summary: The 96II timber sale took out most of the large PIPO in this stand, logged in winter 93. Stand watch on nest # 0025 showed no goshawk. The nest tree clump was saved but compromised. The 2nd watch in end of May had good goshawk sightings in area. In June, we were on our way to check an old nest in the DOG along road #057. Driving by 0006 nest, saw goshawk fly out and start calling. So, this nest was occup but it appeared inactive when looked at during 1st watches. Amazed that nest is still being used even after the logging.

09-May-94: 1320-1620: Stand watch 3.5 hrs. No sight or sound of goshawk. This area has been logged, all big trees taken. Walked within sight of nest tree, which was saved- no signs of activity. Detailed notes on pages 94-25 in field notebook. The units around #6, #44, and #25 have all been logged. This was a sale that was sold before the goshawk were known to nest here and the TSO and contractor would not remark the units.

27-May-94: 0900-1300: 2nd stand watch. OP on Rd # 022 overlooking drainage SW of nest stand. 1 adult goshawk seen flying and circling over area several times. Searched areas marked on photo 1089-180 but did not find nest. Appears goshawk have moved- need to call area. Pages 94-38 to 94-39 in field notebook. Did a stand watch above the drainage (*that goshawk moved to in the next year*) and had goshawk circle us a few times. Goshawk was coming from north ridge, possibly hunting. Heard ravens in the drainage, went to find their nest, but did not see any other sign of goshawk in drainage. Drove over to search meadow just SE of nest stand #6 etc, still some good habitat there. Then on to search up road#057, but blocked by fallen tree. Need to see if habitat is good on this N side of the used drainage, possible site for nest?

09-Jun-94: 0830-0915: Flushed adult (F?) from area, vocal and defensive. Scope on nest can see down and wh/wa on ground. Can't see into nest. See notes (pg 94-25) on stand watch of area nest #0025 earlier this year.

27-Jun-94: 1550-1555: Nestling check: 1 in nest @ 24-26 days. Can't see all the way into nest, may be more in nest? 1 adult vocal and defensive.

05-Jul-94: 1140-1153: Fledgling check- 1 in nest @ 36-38 days old. 1 adult female? came in, called once and apparently left. Chick has well feathered head, down above cere, heavy breast streaking.

## 1995

**PFA:** Established after the fact! In '93, they left 16 trees around the nest trees and then harvested the rest - it *was* a very good old growth stand. A PFA is marked.

26 Apr.: Initial check at nest #6,25, and 44. All nest unused. Remember to write in report that this first check may be too early for some of these birds and that some nests may not be taken until early May. Like DV #6 last year, early check nest seemed unocc, but when we came back it was taken. I missed the use at first or the birds came after I checked.

30 May: First search with caller. Found new nest ~500m south of nest #6. This is in the good old growth stand left around the meadow area to south of the unit cut around the #6,25,44 nests. This habitat is what it was like around the other nests before it was cut. One adult female? responded to caller with alarm call and a stoop when first walked into the meadow. But after spending some time searching I didn't see or hear her again, even when I had found the nest and was near the tree. Nest is in a smaller PIPO in a clump near edge of meadow (directions see map). Once I heard beg calls off to the east - male perhaps? Cannot see well into nest, but can view nest from skid trail that runs along south of tree. Can come into stand from road#017 after the sharp turn where green/black flagging is on a LAOC. (Note: a kestrel came in and called at me near #6 nest.) Female? goshawk that stooped me has no bands.

20 June: In for first nestling check. Very aggressive female (no bands) that is stooping me low right at ground level! As was just leaving the truck to walk into stand, I heard a few beg calls. She then came right out at me when she saw me, stooping so I had to hit the ground and calling. Got good recordings of her. At the very first of the tape can hear the male as it flew in. He gave a "guk" call- she responded with a beg- he flew off and she followed him begging. He must have had food. Several stoops on tape, she came to within less than a foot. Most of the recording is shooting up at her in trees about 15m away. It started to rain so I left without getting a good look into the nest - didn't want to harass her any longer. There is no good OP to see into nest. Could not see any heads above rim, so they at least aren't as old as Starr, so will assume an age of ~ 17 days and come back when they are older.

29 June: In for second nest check. Still cannot see into nest, even went around to meadow side by burnout stump but still see no chicks. Saw movement of twigs moved by chick head jerks presumably. They at least are not old enough to stand at edge yet, so will have to come back next week and hope I don't miss them. I got second recording of her and she still is aggressive and stooping close. The recordings were of her stooping or at the tree tops < 100m - closest was about 5m from me. Can't get too close to nest because of her.

3 July: In to try to see chicks. 2 chicks at about 34-36 days - one already branched. Went into check with Ted (*Ted Fremd*) and the female was not nearly so aggressive. She stayed away and didn't come in close, but called at us when near nest from top of tree. Did not record, too windy, and did not collect pellets at this time.

12 July: In to collect pellets and to GPS the tree. One juvenile was still near the nest - alarm and beg calling. Heard the other juvenile off in the stand. No adults ever showed up this time.

## 1996

25 Apr: In for initial check. As driving on road#017 to the furthest north nest sites, saw adult goshawk (male probably) flying away close to the ground - hunting I guess. This was last year's nest stand, so they are in the area but which nest now. Nest #25 and 44 are gone now. Goshawk in the area, but does not appear to be using any of known nests. Will come back and call. Nest #67 is hard to see into, but did not see any down on nest rim either.

4 May: Drove up top of the drainage on road #022 to do a stand watch for a couple of hours. I left the upper road and drove down to #071 and parked just above last year's nest stand. BVRD people had reported seeing a goshawk along road# 042 earlier. I then parked between road #042 and nest stand, have been watching and listening for 2 hours now. No sight/sound of goshawk. I'm going to walk stand up from Rd# 042 now. Have now spent >4.5 hours watching or walking the stand - no sight/sound of goshawk. Rechecked the #6 and #67 nests, both still unused.

30 May: In to do search and use caller. Spent ~3 hours calling the "PFA" area of good habitat and drainage (see map). No sight/sound of goshawk. This is the same time as last year when I found nest, so I think I'm ok as to timing. I did not even scare up a hunting adult this time. The adult seen earlier in here may be a non-breeder or the nest site is a long way off.

*Did not return to territory again this year*

## 1997

23 Apr: Drove to area and walked briefly the places marked on map by last year's TS crew of possible goshawk sighting off of road.#011. Found a GHOW wing, and probable remnants of a structure in PIPO but nothing else. Searched stand -nest #6 appears unused, #25 is 1/2 gone and #44 is gone but tree still has the wildlife sign on it. Nest #67 appears unused, but I heard a beg call as I was walking into meadow area. Wind was blowing so could not get a good direction on it. I parked on road near the DOG unit and possible that the beg call came from there. This year the TS crew said they heard "birds" in the DOG unit earlier. A small heavy snow storm is passing right now, so I'll eat and listen for awhile.

11 May: In to do second silent search. Found new nest. It is in small diameter LAOC, in a dead looking clump exposed in top of canopy. There is a good OP site uphill and across the road, marked with green/black flagging. This is in the same stand as #67 but uphill, nearer to the road. I had to walk right up under the nest to make sure it was down I saw on the rim. Then I walked up to OP and sat to watch for awhile for I couldn't see any one on the nest and it didn't look deep enough. I sat about 20 minutes, thinking that perhaps this was a failed or old nest - then a little behind me and to my right, she started alarm calling and flew in front of me! Cracked me up - she had been sitting watching me watch her nest the whole time. So she is flushing off nest - at that stage- so they are earlier, near hatching or hatched. But this is slightly different behavior - I would expect a bigger aggressive response from her if they are hatched. If she is still incubating, this is an indication that they do not always sit tight on nest.

19 June: In to do first nestling check. It appears that the nest has failed. The nest is empty and barren looking. I did three calls along the road and only got a GRJA mimic response. No goshawk in evidence. Looks like there has been some activity along the road adjacent to nest site - cow prints and lots of fresh wood chips. Did find one large egg on ground at OP site. Note: in looking back, the weather was warm on 11 May when I had kept her off the nest- but perhaps that wasn't a good sign- thus her "slightly different behavior"??

## 1998

2 May: In for initial check. All the nests look unused, walked stand around these nests. No sight/sound of goshawk. Ravens active in the area.

2 June: In for second search doing some calling. FS is doing some logging in here and want to know if they have to abide by the goshawk restrictions -i.e., is territory occupied. Yes - found new nest, it is in the drainage at the sharp turn in road#011. Nest tree is up the draw just west of road, just above the spring and along the game trail. The tree is an old dead PSME with a lot of mistletoe clumps - one of these is the nest. I had parked just before this curve to eat lunch - when I got out to start I heard her beg call. I walked to tree and female was on nest rim, presumably feeding very young chicks. Male was perched in tree above her and both just watched me. I believe the call was a prey transfer- male had just delivered prey- and she was in process of feeding. Have marked good OP one on road and one on rise just north of spring. Went to GPS the other nest trees in area (#67 and 103).

17 June: Out with Ken Bush, FS volunteer. In to do first nest check. Success with at least 2 in nest. Female in stand flying around but not aggressive. Chicks may be at 19-22 days.?

4 July: In for fledgling check. 2 have fledged already. One chick still standing in nest and the other is calling and jumping around branches near nest - @ about 36-38 days. No adults seen. Juveniles alarm called while I GPS'd the tree and putting up the wildlife sign.

## 1999

16 May: Initial check - out with Ted (*Ted Fremd*) and new GPS III. Nest #103 is occupied. I started search by the spring and last year's site then walked over to north #6 to work my way down to all nests GPS'd them all again. As I came back to #103 and #67 stand, Ted found me and said he had heard a goshawk call. I was just looking at #103, thinking it unused, but then saw down on rim. Did not see her on the nest, but Ted picked up a flicker feather and a lot of other kills below the nest. This is the same nest used in 1997 when they failed.

22 June: In to do first nestling check. 2 chicks in the nest preening @ 14-17 days. Marked the good OP site up on the road, have to sit right on the cut bank to get a view into nest. Did not see or hear any adults, it is very non-aggressive here this year.

6 July: Two chicks in nest @ ~ 28 days. Female was on nest feeding when I stopped and first watched. I could hear the chick whistles very faintly. She flushed eventually with the prey in talons and flew at me calling. I left quickly so she could keep feeding.

## 2000

19 Apr: Tried to drive in to area, but snow bank on road #011 too thick, will have to come back.

2 May: In for initial check. Walked stand in the drainage and meadow - no new nests seen. No sight/sound of goshawk. Drove by #6 and it is gone now. Nest #67 is gone now and #128 is not in good shape. A pair of ravens have a territory along the meadow area but could not find a nest.

24 June: In to do second search and using caller. Territory is active, but no new nest found. While on the road above #103, I got a response to the caller from goshawk to the south, uphill above the road. I have searched all the nest stand areas and a little to SE along drainage with aspen stand. No sight/sound of goshawk at all. The response was a slower cadence and lower pitch so it could have been a hunting male. A male using this stand to hunt, but the nest is possibly nearby but not right here this year. (*Check notes above for the same occurrence - seeing a hunting male*) On a hunch, I went over to call the old cut area around #6 to see if any one shows up. No response except from a pileated woodpecker however.

## **2001**

12 May: In for initial check. Nest #128 is occupied. Female is on nest incubating. Remarked the OP site on hill side by spring and found a goshawk feather here. This appears to be a roost site for male because there is a lot of wh/wa on the ground.

19 June: First nestling check. Female is still tight on nest, not flushing. She is either on eggs still or very young chicks. She just sat and watched us (out with Lia Vella today). Appears to be another late nester this year and will probably be here late into July?

*That was all that was done this year - never got a chance to get back here.*

## **2002**

9 MAY: In for initial check. All the nest structures are gone now. But the area is possibly active. I saw a goshawk flying high in from the meadow area going to the top of the drainage to SW. Will concentrate my calling search from the upper road that goes to the top there. Nests gone even the last 2 used in the LAOC and PSME clumps. Last year the FS came in here and "Trak-mach"? the area. They also fenced off the large aspen grove at the bend in the road that leads to the meadow. This will be very nice in the future if it regenerates like the Geary aspen grove.

3 JUN: In for second search and calling. Drove up road that goes up to top of the drainage to start. Will call upper part and search down to the aspen area and other nest sites. Called and searched about a 2 mile route (saved as "DV 6-3-02") - no sight/sound of goshawk. Did get a RTH and Swainson hawk to fly by and check me out. This territory is Unoccupied this year.

14 JULY: Forest fires started – Flagtail complex. This territory is lost, seemingly burned badly. Too bad about the aspen fencing and that attempt as well.

## **2003**

3 MAY: In for initial check. Drove through to see how bad the fire is and it is NUKED. Right in the drainage is completely fried. A bit of mosaic burn is down by the meadow but still mostly all burned and killed trees that are just standing for a few years. I kept driving toward the BV range station and it is all 100% burned in this direction. The original nest stand is completely gone, the newer side of this territory with the most recent nests is 60% mosaic burn. There is little point in calling this here. Did pick up 2 RTHA and saw an old nest in a LAOC on 2 drainages over toward BVGS.

5 JUN: In the afternoon when L Vella and I finished calling Jack area, we drove to check the strand briefly. I called a few stations in the remaining stand of mosaic burn, walked down by nests to check the condition. There is nothing plausible here really. No sight/sound of goshawk.

## **2004**

Salvage logging had started early in April from the Flagtail fire. Area was restricted and did not go into this stand. But see notes of last year, that there was not much left to check. Will go see it next year to assess the amount of logging and burn in this area.

## **2005-2009**

*Territory not visited at all in these years- no viable habitat it seemed.*

## **2010-2011**

Will try to drive in to check area in fall - no nest trees left to measure.

*Area not visited these years.*

## FLAGTAIL CREEK

FLA <sup>25</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992	24			OCC		FS report of nest being used by goshawk
1993				DNC		
1994	55	6/23/94	N	S	1	
1995		4/26/95		UNO		
1996		4/25/96		UNO		
1997		5/6/97		A		
1998		?		UNO		Unknown date of entry of volunteers
1999		6/10/99		UNO		
2000		?		UNO		Unknown date of entry of volunteers
2001		5/31/01		UNO		
2002		5/10/02		UNO		
2003		5/13/03		UNO		
2004		5/7/04		UNO		
2005		5/17/05		UNO		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		
2011	FLA2011	8/23/11	N	OCC/S	>or=1	1 large juvenile in stand

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

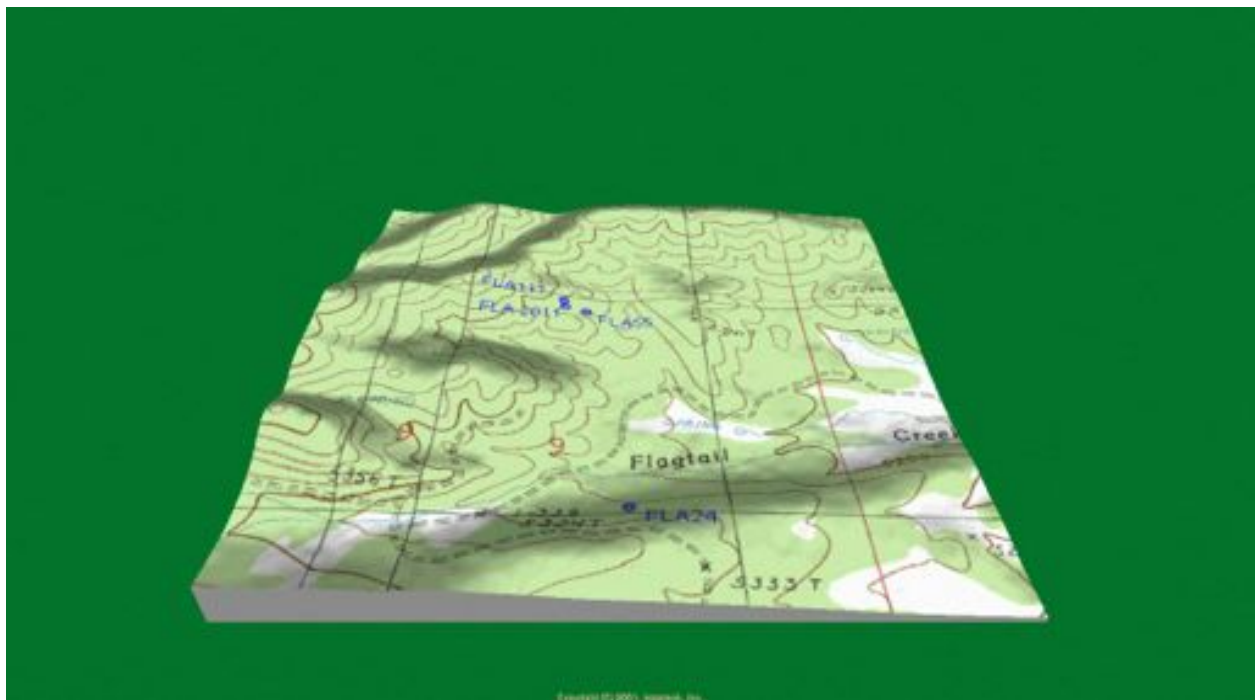
Nest #24 was first found on a random search by the USFS and was later included in Haines (1995) study area. In 1994, the Wickiup timber sale was planned and being sold in this area, and only the two nest stands were preserved. The cutting extended over the years of 1994 and 1995, which in fact opened up the forested area around and between these nest stands. Although this does not appear to have been a highly used territory (corrected for surveillance frequency), late in the season of 2011 a new nest and one juvenile were found in the vicinity of nest # 111. Thus, this is still a viable territory.

In later years, I included this territory in what I refer to as the “Murderer’s Creek Route”, the monitoring of which I had attempted to delegate to a few volunteers 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years. In 2004, I did an extensive search of the surrounding area again, but never found any other nest sites (see 2004 notes).





North up



## FLAGTAIL CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
FLAGTAIL CREEK -24	TAG	5301	DD LAOC	27	140	35	180	10 to N
FLAGTAIL CREEK -55	TAG	5363	PIPO	31	335	47	220	16 to SE
FLAGTAIL CREEK -111	TAG	5400	PIPO	32	nd	nd	230	12 to S
FLAGTAIL CREEK 2011	TAG	5390	PSME	30	156	35	180	12 to E

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
24	A	O	I	I	P	P	P			X
55			A	I	I	I	I	X		
111								I		I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
24					DNC	DNC	DNC	DNC	DNC	P
55		X								X
111		X								X
2011										A

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 737 acres established according to FS records. However, this is not a continuous geographical area, I believe. The number of acres were designated over several years while trying to perform many timber sales around the 2 main areas in which nests were found in this territory.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### FLAGTAIL CREEK

#### 1992

*USFS Biologist has record of goshawk using nest #24, original nest of territory found. No further documentation was done on this nest for this survey.*

#### 1993

*Unknown as to usage. Was not on list of territories to check in this survey.*

#### 1994

23-Jun-94: Karen Haines calling stations in area (survey of different area for her thesis), finds nest. 1 adult present, 1 nestling in nest @ 20-22 days old.

5-Jul-94: 0940-1105: Nest check at #55. One nestling in nest @ 34-36 days? One adult, female, very aggressive and 1 adult heard but not seen. 2 adult Coopers kekking and calling in drainage just to west of these goshawk. As walking by got stooped by Coopers. Searched the area, but never did find the nest. Coopers stayed around even when goshawk came over to call at us (K. Haines). We had been searching for >1 hr, goshawk chick was wailing, hungry, so we left.

Summary Notes: Finally found where #24 nest moved. Good habitat in this area where they are. Also COHA territory in nest drainage over to W. Directions: Hwy 63 to road#24. Go N about 2 miles to road#805. Go about 0.85 mi on road#805, past junction with road#815, to where 805 and road#819 meet in drainage. Continue up (bear right) on 805 and go 0.25 mi from this junction to green/black flag on small PIPO on W side of road. To the E is small skid trail that goes up hill, route is flagged in. Walk up and over to ridge looking into drainage. 2 large PIPO together in bottom.

#### 1995

26 APR: Walked into area, nest #55 appears unoccupied. Was not in area long, but no sight or sound of goshawk. Did not check #24 at this time. A logging unit has been cut to S of road as driving up drainage to parking area. This was done the winter '94 or spring '95. Will have to search this first because the TSO wants to start logging activity in there (Wickiup sale). Probably the clean up or rest of this logging activity already done.

8 May 95: Walked stand around #24. Nest is unoccupied, but structure is deteriorating. No sight or sound of goshawk.

9 MAY: At #55 area to walk the drainage and search. Spent 2.5 hrs. but no sight/sound of goshawk. Did not see any other nest structures either, but perhaps the old Cooper's nest that was here last year. Will now drive road a bit to west to see if any other drainages in this area are suitable. Then I will go search at #24 area. Walked rest of drainage to W of #24, but again no sight/sound of goshawk. So will say that within the vicinity of these nests, there are no nesting goshawk – unoccupied or moved. I may send volunteer, if any, or if I have time later in June to come back in and briefly call around nest #55.

30 MAY: Last check with caller at #55. Called in the draw of nest and no responses. So this is unocc and I will not come back this year. Did the same calling along nest#24 stand, also no sight/sound of goshawk. Flagtail is unocc. T-storm and downpour started- I fell in creek and got soaked. It was much much deeper than it looked!

18 JULY: In to do measurement on #24. Nest deteriorated, but did not go over to other nests because logging was occurring in that area.

#### 1996

25 APR: In for initial check at #55. Nest unused and walked stand a little. No goshawk seen. Tried to drive over to #24 but the snowpack is too high now, will come back later. I also need to look at air photos to see what is left around and between these two stands, to know what to call this year.

2 MAY; In for check at #24. Nest unused and is in half-assed shape! It is deteriorated and would be gone if the wind could get to it, but this is a very closed dense stand and little wind here.

5 JUN: Search and calling at #55. Spent 2.5 hrs calling stations around and between both nest sites and up to where I did the first search. No sight/sound of goshawk.

### 1997

6 MAY: 0800 Out with K Haines to do field work. Checked on both areas but nests unused. Searched stands a little while, but no sight/sound of goshawk. #55 is loose but still up, #24 is in bad shape. We heard lots of woodpecker sounds in these areas.

*Did not have chance to go back to this territory this year.*

### 1998

Dorman and Phyllis Gregory volunteered to take over to do the initial checking on this territory. I went out with them to orient them and to do the first nestling check this year (those that were occupied).

*I have no notes myself of the search done in this area for this year, just that they had checked it and found the nests unused. I am not sure if this was called later in the season.*

### 1999

10 JUN: Dorman and Phyllis had done initial check of nest and it was unused. I am in for 2<sup>nd</sup> search and calling stand. Road closure is now at 1<sup>st</sup> intersection after the meadow drive in from main road, so will have to walk in to #55 first, then over to #24 stand. Nest #55 is gone. There is another structure close to #55 which I gps'd. It must have been missed in 1998 because I checked my notes and had not noted it in 1997 (this territory might have been occupied when we said not – the volunteers do not have a lot of experience with goshawk yet). I did get a GRJA mimic that I followed. I did see the GRJA finally, but I still thought I heard a “kluck” call that could have been a male goshawk. There was also a kill along the road, feathers plucked from grouse/chukar type. However, I never did see any goshawk so it is unocc.

*This was the only time that I got to this territory this year.*

### 2000

Dorman and Phyllis checked this territory. I did not visit it myself this year and I do not know the extent of the search done here. The nests were unused and/or gone however and marked unocc.

### 2001

31 MAY: In to check #24. Old nest is still visible, can at least tell where it was on tree, but not really a nest anymore. This stand has really opened up since the last time I was here. The deadfall that was hard to walk over then, is now on the ground. Wild horses and elk have opened and widened all the game trails in here also. No sight/sound of goshawk. Went over to #55 area. Nest X (#111) is still up, but no other structures in stand. Did see a goshawk flying high over going toward the #24 area, but unconcerned about me and was on route – coming from or going to another nest site??? The road on this side is open this year and will drive up drainage (west of #24 going up to top of ridge) to look at the habitat. Could walk up road that follow Flagtail Creek. Walked to top, at spring, and back down the old logging road. I marked with gps a “GD std” and “GD st2” and “HAB” that is suitable habitat for goshawk that is up here. Did not see or hear anything though and at the upper /top part of drainage, it has been hammered by logging in the past.

### 2002

10 MAY: Dorman and Phyllis checked nests on this day and reported that all nests are gone now. Not sure they knew about “x” though. I did not get into this territory this year and I do not think they ever did any other searches here either.

### 2003

13 MAY: In for initial check. Walked the stand up to nest which is now gone. Even the X nest is gone. I did not see any other structures and no sight/sound of goshawk.

*Did not have time to come back to search this again.*

## 2004

7 MAY: In for initial nest check. Out with TJF (*Ted Fremd*) today going to Vester meadow to help Piper (*a friend*) with her solar panels at new ranch there. Unused and now no nests are up anymore. Spent about ½ hour walking the stand around N55, found nothing. Did not go over across stream to the original site, but I know that nest is almost gone also. I have to decide if I want to do a full re-calling of this area sometime. It needs to be systematically done again really.

24 JUN: In for second called search. Combined this day with NSW and areas on photos that look good between these two sites. See Photo 801-86. Tried a look at road 788 that connects into the FLA area on N side- nothing good along here. Drove to FLA N55 stand to walk and call past nest site to the N and WNW. Picked up a territorial RTHA over on the side that drops down into Wickiup CK. No sight/sound of goshawk. Drove over to N24 stand for a check. Nest is partially up but unused. I called one or 2 times but I have hit my calling limit for this season. I am fatigued and will not spend more time here.

There is a goshawk somewhere in this area, or between these two territories. I saw a goshawk fly low across the road 24 earlier in season (see NSW notes) coming from the NSW area that I called flying into area of FLA. It beats me where they are.

## 2005

17 MAY: Have not been in field since last week- have had a lot of rain this year. Yesterday we had 11 mm of rain, an all day soaker. Today clear but with clouds building, cool about 50 deg, wind coming up and possibly T-storms in PM. In for first check on the N#55 side. Walked around the stand and by nest trees. Unused, all nests gone now and no new ones seen. No sight or sound of goshawk. Overcast and cold wind coming in, may start to rain again.

## 2006, 2007, 2008, 2009, 2010

*Did not visit/check in these years.*

## 2011

23 AUG: OCCUPIED/S! As walked into #55 to finish measurements, we (*Ted Fremd and Kutya, the dog*) heard a juvenile alarm call and saw a large (female?) juvenile flying and calling around us. Found the new nest site in between #55 and up toward #111. The nest is in a PSME that had a green/black flagging near it, so I must have marked this in the past. It is right in line with #111 as well. So this area is still used!! FLA 2011 was a large nest with lots of down on rim – probably > 2 fledged here this year. Finished up on south side measuring #24. Could still see the barest base of nest structure still up, but had to re-GPS this marker and re-ID the tree. It is a dead LAOC not a PSME. Put a new round tag on tree, but a part of the original plastic tag was still on tree.

## IZEE

IZ <sup>16</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	26	6/21/93	N	S	2	
1994	52	6/19/94	N	S	3	
1995	?	5/17/95	N	S	3	IZE ALT nest possibly?
1996	91	4/25/96	Y	S	3	
1997	100	5/11/97	Y	S/F		
1998		5/2/98		UNO		
1999	100	5/11/99	Y	F		
2000		4/18/00		UNO		
2001		5/12/01		UNO		
2002	114?	5/9/02		A?		114 not discovered until 2003
2003		5/13/03		UNO		
2004		4/30/04		A		
2005	26	5/4/05	Y	S	2	
2006	26	5/10/06	Y	F		
2007		5/11/07		UNO		
2008				DNC		
2009		5/5/09		UNO		
2010		5/11/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Mike Penniger, the wildlife biologist on BVRD at the time, first discovered Izee territory. A historical nest site was known to be in this area, and while trying to locate that old nest, nest #26 was found. The habitats on either side of Highway 63 vary. On the northwest side one sees a mosaic pattern with multi-structured forests interspersed with many cutting units. The habitat to the southeast of the highway, where most of the nest sites have been found, is a more complete continuous older forest with not the interruptions of cut units. Through the years, there has been some increase of the deadfall to the southeast but not to where the nesting structures have been compromised as of yet.

Some of the years, goshawks were detected in the territory but nests could not be located. It is an extensive area that goshawk have used in this PFA and there is reason to assume that not all nesting sites have been discovered.



Photo right: Nest tree #52  
( large PIPO to right of center).



In 2003, this is one of the territories where I tested the early detection procedure as proposed by Penteriani (1999) (See description of method in Penteriani Listening Test section).



Photo above: Nest tree #91 in center group of trees.

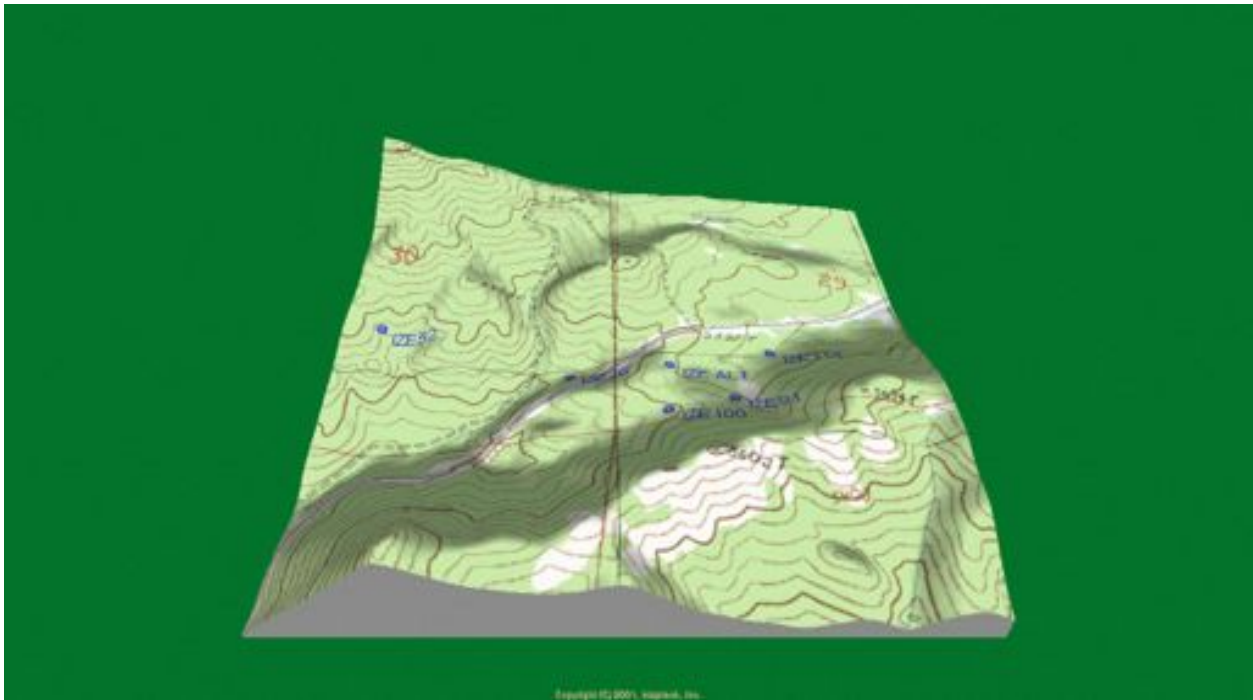
Photo below: View of meadow area adjacent to #91 area.







*NORTH UP*



IZEE

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
IZEE -26	TAG	5254	PIPO	30	332	60	324	<10 to SW
IZEE -52	TAG	5352	PIPO	30	S	60	240	20 to S
IZEE -91	TAG	5407	LAOC	30	W	60	310	10 to NE
IZEE -100	TAG	5409	PIPO	29	SW	55	210	20 to NW
IZEE -114	TAG	5347	LAOC	31	112	40	310	5 to NE
IZEE ALT*	TAG	5409	PSME	20	90	45	350	10 to E

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
26		A	I	I	I	I	I	I	X	
52			A	I	I	I	I	I	X	
91					A	I	I	I	I	I
100						A	I	A	I	I
114										
ALT				A?						

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
26				R/A	A	I	DNC	I	I	I
52									X	X
91	I	I	I	I	X	X			X	X
100	I	I	I	P	P	X			X	X
114	A?	I	I			X			X	X
ALT										P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*IZEE ALT = Nest site not marked until 2011; however, this is in the same stand that I found the 3 juveniles in 1995. So it is possible that this is the nest used in 1995, or a new one built in the same stand.

**Post Fledging Area (PFA)** = 460 acres established in 1994, according to FS records

### Recordings:

In 1996- Female and male adult vocalizations.

*izee 96 Jun11.mp3 and izee 96 Jun26.mp3*

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### IZEE

#### 1993

21-Jun-93: Nest #26 found with 1 adult and 2 downy Nestlings. Found by M. Penniger, BV Biol.

26-Jun-93: adult female very aggressive, adult male made prey delivery. 2 nestlings approx 24-26 days old- could not see whole body well. Not a good place for trapping, barbed-wire fence too close.

03-Jul-93: 2 Fledglings from nest.

27-Jul-93: Still heard 1 Fledgling from road.

#### 1994

11-May-94: 1558-1626: Walk-in to nest #26. Nest appears inactive. No sight or sound of goshawk.

08-Jun-94: 1423: Walked in with Penniger (BV Wildlife Biologist) to mark the historical nest which is almost gone now- was old nest right in drainage bottom in dead LAOC. Called 6-7 stations along road#537 and got no response.

16-Jun-94: 0830-1306: Calling stations & on 9th one up road# 743 adult goshawk perched and kekked. Calm bird that stayed in area flying from tree to tree, but did not find the nest. Nice stand of PIPO & PSME at head of drainage.

19-Jun-94: 0900-0930: Found nest #52. Nestling check-3 in nest, 1@ 29-31 days and 2@ 27-29 days old. 1 adult in area vocal and defensive.

#### 1995

21 Apr 95. Walked into both nests and both are unoccupied. Was in the area for approx. 1.25 hrs and no sight or sound of goshawk.

17 MAY: In to do silent search. At N52, I got a goshawk call at top of ridge by this nest to N (see map for this year). The goshawk was moving around a lot. I got alarm call then a series of beg calls. I spent several hours searching this area and the adjacent stands but never got another response nor found a new nest. This territory is active, but I am not in the vicinity of the nest. Or this could be a hunting male, but the beg call was unusual. It could be a younger, non breeding bird also. I continued the search moving toward N26 and still got no response. It seems strange to not have elicited another response considering how much time I was here if the nest was in this area.

21 JUN: In to search and use the caller. No sight/sound of goshawk by N52, but I did call in a COHA. Got a recording of COHA, but it flew off to ESE to top of ridge. I spent 1-2 hours searching for the nest, but never found it. The adults did not show up again. As I was walking back to truck, I heard a loud nest of pileated woodpeckers and recorded the chicks being feed by an adult. Tiring day and I was frustrated again. No sight/sound of goshawk.

7 JULY: I was going to check on the COHA site SE of N26, across the road, and saw 3 juvenile goshawk. 1 of the fledglings responded to the COHA caller I was using. Walking over to find them, 2 came over me and called. While searching the stand for possible nests, one adult (assuming a female by the quality of her voice) came into stand to watch me. I went back to searching the COHA site further uphill found nothing. I went back to the area that the juveniles kept to and saw 3 perched. The adult flew in with prey item, called at me and flew off. The chicks eventually followed. There is a mistletoe clump in this stand that might have been used, but really I could not find any obvious nest. It must be in this general area however. Went over to N52 area to try to find the COHA, but got no response. Thought I saw one flying away from me, searched area a long time, found nothing. PFA: 459 ac. established in '94.

*(Possible that the nest found much later -IZEE ALT- was this year's site or close to it. See notes for 2011).*

## 1996

25 APR: in to check nests. Walked drainages for nest #26 & 52, but both unused. Moved across the highway to where goshawk found at end of last year. Heard beg call as I started search and followed it to the new nest. New nest N91 is in LAOC, well hidden, at edge of a meadow area above old 2-track road that runs in this area. Female on nest incubating and she did not move the whole time I was searching for a good OP.

30 MAY: In for first nest check and possibly recording. Female was off the nest as I walked to OP but I could hear the chicks whistling in nest. Very little down on rim or wh/wa on ground so they must be very young, up to 7 days? She finally came out to me, perched, gave a series of calls, then returned to nest. She positioned herself to incubate/brood the chicks. They are indeed still very young. I wrote directions to this OP, for the nest is hard to see into (pg 96-49). I did not get a recording of her this time. She was not aggressive and had settled back onto the nest in a short time.

11 JUN: Took Mom (*my mother visiting*) in field with me today. Female was quiet until we were at the OP, then she came out calling and stooping. Did get recordings of her. Can't see into nest, but 1+ chick for sure @ 14-17 days I'll guess. As the female kept calling, I could hear a male off to the S of us. Female responded with beg calls to the male and he gave some 'guk' calls. Did not get any recordings, male was too far away.

26 JUN: In for second nest check and recording. Still can't see into nest, but the one I can see is @ 26-28 days. Female was vocal and aggressive as recording her. No sight of male this time.

4 JULY: In for nest check. There are 3 chicks @ 36-38 days. One was already branched by nest. No adults in evidence at all this time.

## 1997

23 APR: In to do 1st nest checks. N91 unused. No sight/sound of goshawk. Walked the stand slowly over to N26. This nest also unused at this time. But I did hear a male 'guk' call as I was looking at N26. Possible that this nest will get used yet. Rd.#510 is closed this year so had to walk all the way into check N52. It also is unused. The old nest in the dead LAOC in drainage is in worst shape this year. The ravens called at me, they are back here again somewhere. Started to snow/hail heavily.

11 MAY: Found new nest N100- to the SSW of N91 and due S of N26 across the road. It is a large PIPO right along a game trail that runs down the center of this draw about 80 – 100 ft from the fence line. Female was sitting on nest watching me as I walked up from the bottom of draw. This was a very spiritual find of being drawn right to the nest and seeing it.

6 JUL: In to nest check, but it was too late, chicks had fledged. It appeared successful because there was a lot of down on the nest and wh/wa too. Do not have a count of how many this year. Ted (*Ted Fremd*) was with me today, but it was an unsettling day in field between us, and Jade (*German Shepherd dog*) ran off!

## 1998

2 MAY: In for initial check. N26 is still up but unused, not in good shape. A huge storm came and is not passing soon, so will have to abort search and come back.

6 MAY: In for search again, but no sight/sound of goshawk. All nests unused.

24 MAY: Trying a new crepuscular search at two territories this year. Using the caller this early does not work, but I wanted to see if being in the stand in late evening and then early next morning would produce a better sighting of goshawk. I took the camper out here to spend the night and search in AM too. I went to sit in the stand across the road, N91 and N100, and listened for several hours (1700 – 1930). I heard many other calls, but no goshawk calls at all. It was a rainy drizzle for most of night. The next am at 0400, it was snowing! I stayed in stand till around 0900, but no birds were out then, too much weather!!! So, this experiment was not very productive at all.

4 JULY: I went back in with caller to see if any juveniles were in the area. Walked and called the known stand areas, gps'd all the trees again. I thought I heard a goshawk call just at top of draw that leads down to N26. I only saw a kestrel though, perhaps that was what I heard. I did not get any responses to my calling.

## 1999

11 MAY: In for initial check. N100 is occupied with female on nest incubating. As Ted (*Ted Fremd*) and I walked away, we heard her beg call and flew off to E, I suspect that there was a prey exchange with the male.

22 JUN: The nest failed. There is no goshawk here and no chicks in nest. I believe it failed early because there is no down on nest rim nor wh/wa on the ground. Found one molted feather on the trail by tree. People were using chain saws repairing the fence along the highway, but this is a distance from the nest. Don't think it was human caused, perhaps the male was killed, chicks eaten, eggs not hatch. It is always sad when a nest fails.

## 2000

18 APR: In for initial check. Both nests on the N side of highway are gone now. No sight/sound of goshawk here. The stand on the S side of road also is unused, nests still good though.

11 JUN: In for search and using caller. Re-checked all nests, called area, and no sigh/sound of goshawk

## 2001

12 MAY: In for initial check. Walked stands and no sight/sound of goshawk. I did not walk over to the N52 draw at this time. Will come back and use caller.

During the last of June and early July, K Haines had a volunteer come in and we had him call certain territories that I could not get back to. He called the area of the map I had given Karen, but he did not get any response to caller, nor see any goshawk.

## 2002

9 MAY: In for initial nest check. Walked stand of N100 and checked on N26. Both unused and 26 is gone. No sight/sound of goshawk. I have a hunch that they have moved E of this area, where the good looking habitat follows the highway. I will try to call this extension later in Jun.

12 JUN: In for second called search. I have camped out last night after searching Snowshoe and now starting early in AM here. Drove across road onto #014 to come into stand of N91 and 100 from the east. Will call total area, but bummer that log trucks have been going by on highway all morning. Marked track as "IZ 6-12-02". There are good GRJA mimics right in stand of N91 and 100. I did see a goshawk fly over me at about the 2<sup>nd</sup> or 3<sup>rd</sup> station, coming in from the east. Adult was flying toward the nest area, but did not stop, perch, or call. Looked like the flight direction could be toward N52- but it is gone and no goshawk there when checked. Curly (*German Shepherd dog*) got into a porcupine again, not as bad as last time, but that ends today! If I had time, I will try to come back in JUL to see if I can pick up any noisy juveniles.

*NOTE: They were there in the LAOC that I found in 2003!!!! They were very quiet when I was calling by this area!*

## 2003

19 FEB: Listening test. Temperature at home -1C and slightly overcast. Snow pack is still several inches at this elevation. 0615 to 0800 at D1-IZ. Very little activity heard at all. Ravens and STJA heard but few other species. This is higher in elevation so not much uncovered here yet.

20 MAR: second listening test. T at home 2C slight overcast with rain last night. Snow pack is way down. 0530 to 0630 at D2-IZ (same spot, 2<sup>nd</sup> time). No goshawk heard. The usual cast of birds heard, ravens, robins, nuthatches. Did hear a crane early and now a loud pecking, probably a pileated WP. Doug squirrels here now, grosbeak, STJA, flicker. Sun is breaking through now, but no goshawk heard. I guess I won't search here until Jun. It will take a lot of time to re-do the area. Note: drove through the Flagtail burn area, looks like Jack is a mosaic, but DV is nuked it appears. Larch is OK, just on the edge of the burn. Will have to total grid call this area again.

13 MAY: In for initial nest check. On a hunch I am starting from road #037 at the closure of track that leads from east into stand of N91/100. Walked all around this side, across highway and through stands running S along highway. There was a RTHA nesting right by where I parked the truck at closure. Both 91 and 100 still up but unused. I found a new nest- probably the one used last year!- in LAOC in the draw, marked it as X-03 (#114). No sight/sound of goshawk though. Will see if I can drive over to other nest sites- #26/52- but found the road closed now at highway. Decided to put search off on these until later when I can come into call area. I know these 2 nests are gone and it will probably be futile anyway.

24 JUN: In for second called search. Called track "24-JUN-03 IZ" but no sight/sound of goshawk. I did pick up a Cooper's call near N52 and saw the adult fly over me while I was walking up draw to N100. I picked up a RTHA and chick calling that

checked me out when I was on top of ridge walking NE (possibly the RTHA that I saw nesting earlier). I also picked up a SSHA call along here that was coming in to check me out, but split quick when the RTHA flew close in. So unoccupied, no goshawk.

#### **2004**

30 APR: In for initial nest check. Active it seems. Probably in a new nest that I can't find now. All nests I checked were unused but I got a call that came from near N91 after I had gone by and was searching uphill. I went back to area and spotted a female goshawk with large fluffy coverts perched on a large PIPO snag watching me. I marked place to search as "GOS 04". I did not spend any more time looking because it is still early in season. I'll wait until into Jun to come call here to find them. If can't find them at least it is active with a nester here somewhere. She stayed put the whole time, so I think they are near here perhaps they are in process of taking #91 after all.

16 JUN: In for nest check with Chad (*friend who wanted to see a goshawk*). Didn't find any nests or hear adults. We searched the area all around where I saw adult in Apr. but nothing. Checked N91 and the X nest lower in draw, but still unused. Chad said he saw an adult flying high coming from the stand area we searched toward the highway, but we could not find anybody. I feel that they are up in this area but well hidden again this year. Will have to come back again.

*Never had the time to return to look for juveniles this year.*

#### **2005**

4 MAY: In for first check. Starting search at main stand (SSE) across highway #63. Big T-storm near so may get rained out. Occupied – down on rim and I think female on nest incubating. Hard to see. This is a new rebuilt nest of #26 in original tree but slightly different position. The original nest has been gone since 2000. This was an astounding find to me because it did start to rain and not let up. I quickly walked the stand to view all known sites over on SE of road and got back to truck thinking "that's it, I'll come back later in June." But this nagging voice said "You are so close to the original site you should just go check it anyway- get it out of the way." Knowing the nest was gone and not expecting anything- I was shocked when I got close enough to see the new nest! Intuition! It was still real wet so I didn't stay long to get a good OP so I couldn't see into the nest. Follow trail along fence line from parking area but before you drop down steeply into draw, bear right and contour on trail following flags. I have a flag on a downed tree that is an OP place to see nest for now.

20 JUN: Nest check. Successful with 2 chicks @ 32-34 days. These are older than ones at HER right now. They have full feather on chests and little down on heads. Both upright on nest rim- alert and watching. Female was in stand and only called a few times at me- not real aggressive.

#### **2006**

10 MAY: Clear and sunny last several days, but did not make it over top of road #49. I am amazed that there is still a large snow bank blocking the road. Occupied using #26, same as last year. The OP site from last year didn't work this time so I spent a lot of time stomping around to try to see into the nest. There is down on rim and I think I saw her head top, so pretty sure she is there. Went to check rest of nest areas, no activity, and most nests gone now.

21 JUN: Final nest check. Failed. Not much white wash on ground nor on nest. No adults and did not see any movement or bodies in nest cup.

#### **2007**

11 MAY: In for first check. Unused- walked and searched around all areas and known nest sites, no sight or sound of goshawk.

*Did not visit this territory again this year.*

#### **2008**

*Did not visit this territory this year.*

#### **2009**

5 MAY: In for first check. Nest #26 is unused. Searched stand and known nest site to SE of highway and no activity- all known nests here are gone now. Lot of large blow down around area of #100 now.

*Did not visit this territory again this year.*

**2010**

11 MAY: Out with TJF (*Ted Fremd*). TJF checked #26- unused. We split up to search all known stand areas, but no sight or sound of goshawk.

*Did not visit this territory again this year.*

**2011**

1 Jul: Sunny warm today. Lunch at Tamarack Ck, out with TJF (*Ted Fremd*). Out to measure the further nest #52 first. Had to reconnoiter to find #52, went up wrong draw at first- been a long time since I was here. Walked and measured all other trees but no sight or sound of goshawk while there. I did find a new nest-IZE ALT- that I measured and marked. This is near to where goshawk were a long time ago during first years. Found 2-3 juveniles calling in this direct area late in that year's season, but never found nest for that year. Maybe this is it or a rebuilt one in same area.



## JACK CREEK

JAC <sup>14</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	16	6/9/93	N	S	2	
1994		5/6/94		UNO		
1995		4/27/95		UNO		
1996	92	5/19/96	Y	S	1	
1997		4/23/97		UNO		
1998	92	4/30/98	Y	S	3	
1999	134	5/4/99	Y	S	3	
2000	134	4/19/00	N	S	3	
2001	92	5/12/01	Y	S/F		2 nestlings
2002		5/9/02		UNO		Area burned July 2002
2003		5/3/03		A		
2004	163	5/14/04	Y	S	4	
2005	161	4/24/05	Y	S	2	GRGR IN #92
2006	185	5/10/06	Y	S	4	GRGR IN #92
2007	163	5/14/07	Y	S	2	
2008				DNC		
2009		6/1/09		A		
2010		5/11/10		UNO		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Several unusual observations characterize this area. The habitat in Jack Creek drainage was a multi-storied mature forest that was intact yet bordered by some cut-over areas. The first years of observation the nest trees were placed very close together along the same aspect of the draw. In 2002, the Flagtail Fire badly burned a large area to the north and west of this draw. The westernmost edge of this draw with the nest cluster was more of a mosaic burn that had burn incursions into the nest stand itself. What was more of a threat to this nest cluster was the logging that ensued in 2004. However, it was the continued usage of this territory by goshawk that mitigated the activity and the boundary of logging units during this time.

Photo right: Nest tree #92 as of 2011. Nest tree is in center with square tag on trunk. This is the general condition of forest that surrounds this nest cluster now.



Also of interest is that this territory was successfully used for the next 5 years by both goshawk and GRGR after this fire. In addition, two of these years produced a goshawk fledgling count of four, which was a rarity on this forest. There were a few examples of goshawks successfully re-using a territory after a disturbance (see Dipping Vat for example); but, not for as long a period as observed here. The other territories affected by this same fire complex did not fare so well (see Dipping Vat and Swamp Creek).

In 2010 and 2011, there was a noticeable decrease in the forest cover because of the normal attrition and tree mortality resulting from the fire. One might predict that usage will decline in the future, but it would be interesting to follow up on this territory on a long-term basis.



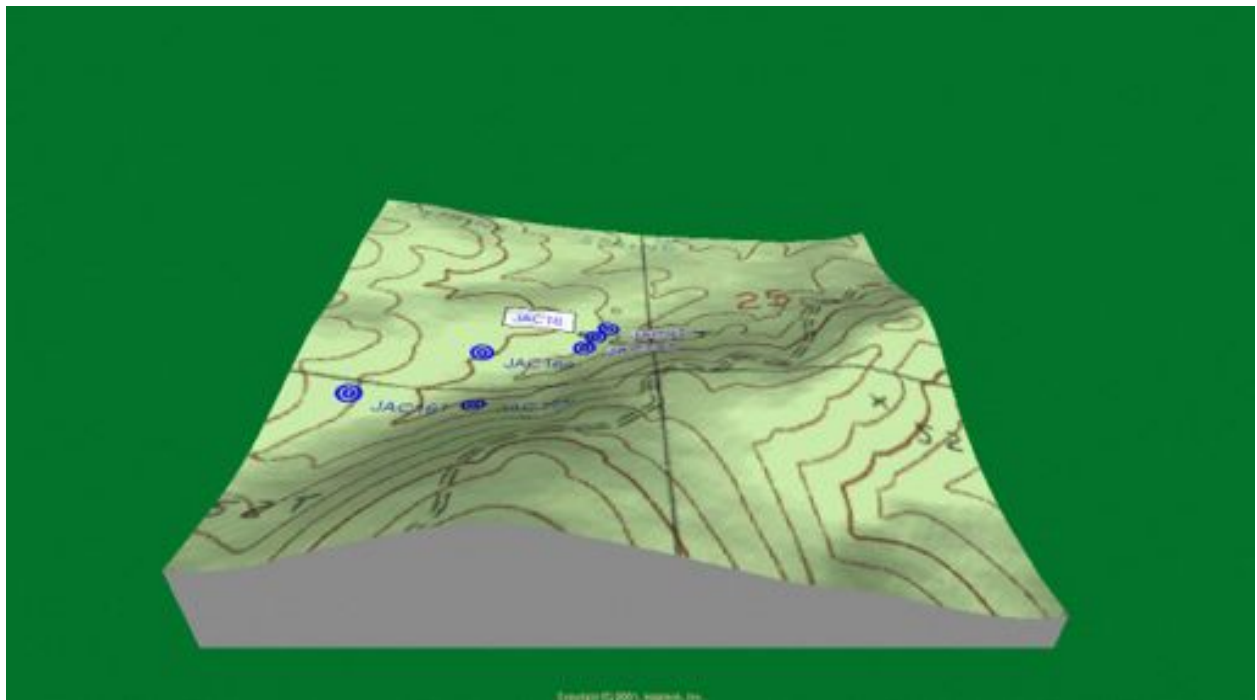
Photo upper right: Nest tree#134    Photo lower right: Nest tree #163  
Both these stands are within the more heavily mosaic burned area of cluster.

Photo below left: Nest tree #161    Photo below middle: Nest tree #185  
Both these stands located more to the outer edge of the burned area.





*North up*



JACK CREEK



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
JACK CREEK -16	TAG	5167	PIPO	23	S	88	224	10 to SE
JACK CREEK -92	TAG	5163	LAOC	29	180	70	224	10 to SE
JACK CREEK -134	TAG	5168	LAOC	23	128	60	192	15 to E
JACK CREEK -163	TAG	5207	PIPO	35	146	40	250	8 to SE
JACK CREEK -161	TAG	5250	PIPO	36	160	50	190	8 to SE
JACK CREEK -185	TAG	5233	twin LAOC	45 @ base	30	60	238	18 to NW

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
16		A	I	I	X					
92					A	I	A	I	I	A
134								A	A	I
163										
161										
185										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
16					X					X
92	I	I	P	U	U	I				X
134	I	I	P	P	P	P				I
163			A	I	I	A				P
161			I	A	I	I				I
185					A	I				P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 443 acres established in 1994-1995, but probably would not be valid now after the 2002 Flagtail Fire.

### Recordings

In 1996- Female adult vocalizations  
*jack creek 96 Jul4.mp3 and jack creek 96 Jun26.mp3*

### Trapping and Banding History

In 1993- Female adult: She was never known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### JACK CREEK

#### 1993

08-Jun-93: 1040-1140: Found territory; 1 adult- defensive behavior.

09-Jun-93: 0800-0830: Found nest #16, 1 adult seen and defensive.

15-Jun-93: 0500-0710: Trapping and banding, caught 1 adult female, heard adult male wailing to N-NW, but he never came in. 1+ Nestling observed.

27-Jun-93: 1100-1115: 2 Nestlings only approx. 32-34 days old.

18-Aug-93: Nest site data collection; 2 Fledglings heard calling up drainage

#### 1994

06-May-94: 0830-1200: Stand watch 3.5 hrs. Detailed notes on page 94-22. We used the OP up across the draw up road#078. Territory appears unoccupied; no sight or sound of goshawk; nest itself looks unused- no sign of activity and structure is deteriorating, it has slid off to the side of branches.

18-May-94: 0915-1230: Stand watch 3.5 hrs. - SCD (*Sonya Daw*) at OP on road#078 directly across from nest to E and SJR 100m to S, up the road to watch the upper drainage (detail notes on page 94-29). Raptor with prey flew into area S & W of nest tree up drainage and high on the slope. Too far away for a positive ID, but need to search this area for goshawk.

02-Jun-94: 0830-1200: Calling 15 stations around nest & up on bench where raptor sighted. No response. Moved to drainage to W, calling 9 stations up road#133 into Poison Spring DOG, no response. Sonya said she had seen a old stick nest in this DOG last year. Walked by nest #16 and found it inactive for sure.

22-Jun-94: 1500-1600: Calling down drainage and to SE of nest with wail/beg call. No response

#### 1995

27 Apr 95. Drove to good OP site, nest is almost gone out of tree. Stayed to watch approx. 3/4 hr. but no sight or sound of goshawk. Started to rain hard and left.

**PFA:** in '93-94?, looks like some area delineated on map but may be informal. No data on acreage

20 JUN: Walked and searched the stand. Used caller at about 8-9 stations, but no sight/sound of goshawk.

#### 1996

25 APR: Went up to OP site across drainage from nest. Looks like nest is gone. Did not go down into drainage at this time.

19 MAY: Will go into stand and do silent search. Weather is still rainy and overcast. Found new nest just approx. 10m to NE of old nest, this is down drainage. It is in a LAOC that is right along the roadway, like the old one. Had to walk right under tree before I saw wh/wa then backed up and saw her peaking over the nest at me. The best OP for this nest is in the dog-hair stand of fir across the track, or at the large PIPO in the clearing that runs across the road from the nest tree. As I first started to walk in, a large shape flew near – but no good ID on this. I got a feeling of being watched, like goshawk do, and also had that “premonition chill” that the goshawk would be in this territory. But, again, pooh-poohed it and was surprised when I did see her. She did not move off the nest or vocalize. There was a fluffy area in nest beside her, but could not see if it was a very young chick or her brood feathers sticking up. Drove over to the OP opposite side of drainage and you cannot see this nest from there – will have to walk into stand to nest check.

26 JUN: In for first nest check. Only 1 chick @ 24 days, sitting up and preening in nest. Female was silent at first, but soon flew to perch 30 ft from me and called. Got 1<sup>st</sup> recording of her, she is not very aggressive and has no bands.

4 JUL: Nest check – 1 fledgling @ nest 34-36 days. Female was more aggressive this time and called, got 2<sup>nd</sup> recording of her.

### 1997

23 APR: 1550 Drove up road to get into drainage. Went past the old parking place and turned off the old road that goes into drainage. Walked W across drainage and N92 is unused. N16 is completely gone now. No sight/sound of goshawk.

21 MAY: 1600 Used Cooper's alarm call in this drainage, but no sight or sound of goshawk. N92 still unused. Have a hunch that I will find them in the drainage to SE between Larch and Jack territories.

19 JUN: At drainage between Larch and Jack along Rd#082. Good habitat in here. Spent 1.5 hours using caller along in here- no sight/sound of goshawk nor any structures seen.

### 1998

30 APR: In for initial check. Drove up to Rd#076 past cattle guard to walk this road up into drainage. Nest #92 is occupied with female incubating. She just watched and did not move off nest.

16 JUN: first nest checks. At least 2 small chicks in nest, could not get accurate count and will return. No sight/sound of any adults.

4 JUL: 3 fledglings all still in the nest. They gave alarm calls when I walked in. No adults seen again, but the GRJA mimics were raucous. GPS'd both trees and both have signs.

### 1999

4 MAY: Tried to drive up to usual spot but a snow drift blocked the road. Walked a ways into stand and found new nest. It is right in the same area, a medium size LAOC along the track and just upstream from the other nests. Female on nest incubating.

22 JUN: first nest check. 2-maybe 3- chicks @ 17 day range. Female was perched on nest watching me the whole time – did not appear concerned, no vocalizations. I saw the male fly by me to check me out as I was walking into stand.

6 JUL: 3 fledglings, one branched – 2 @ 36 days and 1 @ 30-32. No adults seen or heard, but as I walked up, the juveniles were begging and then alarm called at me.

### 2000

19 APR: Walking in from the Scotty Creek Rd#24 instead of driving up and around to the top way to get in. Possibility of N#134 being used again. The nest is well built up and I think I see a few bits of down on the rim. No adult was on nest and I did not see any perched. While walking up to OP, I thought I heard a faint wail call, very high pitched though, could be a mimic.

24 JUN: In to recheck and perhaps call area. Nest 134 is occupied. 3 chicks @ 14-17 days. I walked up the road and GPS'd all the nest trees and as got close to 134 I could see the chicks move in nest. As I was marking the tree, the female flew in and perched in a tree right across from nest with prey in her talons. The 3 chicks sat up alert and watched MOM. I moved away uphill to mark OP. I had also entered this stand early April and this didn't interfere with these guys like I might have done with Larch. But at Larch, I got a definite call and flying around of goshawk there, but here I didn't see any adults on first trip. This female wasn't incubating either on first trip in.

29 JUN: Last check for this year. 3 chicks 1@ 34 days, 1@32-34, and 1@ 28-30. Female was watching us (*Sarah Herve*) and finally stooped, called and perched above Sarah so she got some photos. Female not banded.

### 2001

12 MAY: In for first check and N#92 is occupied. New down on the rim, but did not see female on nest. Either she was deep down inside or she was off the nest. Heard an alarm call up drainage, but sounded like a mimic.

19JUN: In for first nest check. Female is on the nest sitting tight this time. As we watched (*Lia Vella*), 2 young chicks moved in nest. They are very young @ 9-12 days. So Dipping Vat may be at equivalent age also. No male heard or seen.

## 2002

9 MAY: In for initial check. Both nests still up and in good shape, but unused. No sight/sound of goshawk. Searched a little in stand, but no new structures seen either.

*Did not get to make a second search here this year*

14 JULY: Forest fires started- Flagtail complex. This territory is lost it appears. Will have to see next year how severe the damage.

## 2003

3 MAY: In for initial nest check. Out with TJF (*Ted Fremd*) and on drive in we saw a black bear and her cub. Mom made a faint on the road when we came around a corner and took off while the very small cub climbed a tree right by the road. We could see him very well as we slowly drove by and he/she made soft whine sounds, very cute and small- brand new cub. Walked across draw to nest sites and the burn is really a mosaic here. The stand of the OP across from the nests is nuked but along the creek side, where nest trees are it is uneven. Original tree #16 is burnt in a pocket of hot fire and it will die, but nest was already gone years ago. Tree #92 is scorched at base but looks still alive- the LAOC leaves look like they are just starting to come out. Nest is still ok and did not burn. Tree #134 is good and not burned in a pocket of green stuff- nest is still good. This pocket of trees is not even scorched. All nest unused and no sight/sound of goshawk. Will be grid calling this total area this year.

5 JUN: In for second called search with L. Vella (see notes for Larch too). In am, after calling at top of ridge in NSC, drove back around to the "entrance road" going to Jack- #078? (*at junction of Rd 24*). Instead of driving into Jack drainage, I started calling up the good draw that parallels Jack. I had searched here in years back, the good habitat and meadow along the fork road. The track on GPS 3 had 2 parts. Part of it is the one run along the ridge top working from NSC area, and then beginning down here at the fork in the road - "5 Jun 03" and "5 Jun 03-2". I did get a good GRJA mimic at top of this drainage, but found nothing. The fork road that runs by meadow and good habitat leads to a ripped up logging track that contours the base of the ridge and leads down eventually to the Larch areas. Called all in here and no sight/sound of goshawk. I picked up Lia along #24 road where she had passed the road that leads into Jack, where the car was, and she was closer to Jack Creek itself. She said as she waited, that a goshawk call came from N of the 24 road. It seems all meadow out there, but possible and/or a mimic.

6 JUN: Continued grid calling here. I left Lia at 24 road at Jack Ck to work up drainage, through and by nest stand, up to ridge then contour back down from W side to car. After I finished re-checking Larch sites, I drove to the west end of the burn, almost to the highway, and called stations back toward Lia on the lower area. There were Indian mushroom pickers in here this day and we both saw different groups, but did not contact them. The burn is severe on the end I searched. Lots of woodpeckers, jays, robins now but a lack of small mammalian prey. Seeing a lot of burned out holes where the trees were means that the middens and burrows are burned also, thus the animals as well. Is there any studies of the deficit of small mammals after a burn like this? There was a small accipiter that buzzed me at the beginning of Jack Ck at the road while I waited for Lia to get back. Could not ID it though. This habitat would now favor the smaller Accipiters with all the small birds around. Thus no goshawk found in the Jack territory.

Note: Later in Aug, Forest Service people working out here reported that they heard goshawk calls. It was late enough in the season that the juveniles had fledged and were roaming around. This does indicate that a territory is nearby somewhere and I have yet to find it. Better luck next year!

## 2004

28 APR: Out with Chadski (*friend that wanted to see goshawk*). In for initial nest check. Logging has started and it is cold and blowing snow/rain at times- a day I would not have chosen to disturb any new nester. Met Mike Burgett (*timber planner for BVRD*) on road and talked about the logging status and the need to protect this drainage. He was understanding. There was a need to quickly assess if the goshawk were here or not. We could hear the saws and trees falling in the next draw over as we walked into check all nests. 2 nests are partially gone and 1 wholly gone. As we continued to walk up drainage, we heard an alarm call. We fast checked up stream, for it was cold and I did not want her off nest long. There is an opening and a new nest in a large PIPO here "JX" (#161). I did not see her again and the nest has very little down on rim, but it is early. I believe this was the nest used and had not seen it yet (perhaps used last year as well - for Lia (or me) did not walk up here exactly and some personnel had said they heard juvenile call up here late in season). We left promptly, marked nest, and will need to talk to K Schuetz (*wildlife biologist at the time*) about moving the boundaries of the cut units down in here. I felt under duress this day for several reasons. It was cold and I did not want to flush any goshawk off nest in this. But, because the Forest Service had started activities so early, I needed to know where the goshawk were. Also, I had invited Chad out to see goshawk but this is not the good time of year to do that. I need to do the first assessments alone from now on.

3 MAY: Met K. Schuetz in field to discuss some of the management activities occurring in PFA this year. I gave him the correct UTMS and map for new nest site. This area and those units are on a time restriction and none of the units within 1/2 mile will be



entered until September. We will go walk the area next week to see if she stuck on nest and to re-evaluate the units that are marked for logging that come right down close into this nest drainage.

14 MAY: In for nest check. Met KS (*Ken Schuetz*) at Scotty Ck road to go to nest site. This area is restricted because of the logging activity and I had to get a special permit to enter here. A day of serendipity! We walked into area and I pointed out where the old nests were or had been. We went to the new site and the nest was unoccupied. We were both depressed that she wasn't there. So 2 things could have happened. The noise of the logging and us entering early could have pushed her off the territory or she was nesting somewhere else different. This meant I would have to come back and call later in season to really give the Forest Service a definite answer. We then just walked the boundaries of the units and discussed about how different this much logging in here would change the habitat. We agreed that the unit should be changed to follow the ridge line making it about 300 ft from the creek. This would at least save this area that encompasses the draw itself. As we walked back down, not quite as far down as the old nests sites, I saw her flush off a new nest that I had not seen. We both laughed- that we had been walking and talking going right by her this whole time. But we had found her! I marked tree and we left so she could get back on the nest. The timing restriction is into OCT now and KS will try to change this unit boundary. The courts may stop this sale in 45 days- lots of controversy about this fire sale- and DR Johnson (*owner of the logging company*) may just get what he can in that time- all the big boys- and write off the rest. It is amazing to know the goshawk still are here with all this activity ongoing.

15 JUN: Out with TJF (*Ted Fremd*). In for nest check. WOW what a successful nest. 4 chicks here- this is the first time in 13 years that I have ever observed this clutch size. On top of that, the age spread is huge- about 10 days to 2 weeks difference. 1 @ 17-19 d, 1@ 28-30d and 2@ 20-24. This is a huge spread in hatching. Never have seen this before. Female was quiet most of the time as we moved around tree to get good looks. She came in to call but stayed high in tree tops and never did stoop. The helicopter noise was tremendous and we could see the ship as it flew back and forth with loads in Snow Ck drainage. First off- this is a highly successful pair- 2<sup>nd</sup>, they are doing well in a burned habitat, one that Forest Service wanted to cut down- 3<sup>rd</sup>, with a lot of disturbance ongoing they still are here and doing apparently well. I am so proud of them.

23 JUN: In for nest check. It is quiet now, no helicopter noise because the 45 days is nearly up. I still saw log trucks hauling, but no chainsaw noise either. Successful with 4 still- 2 branched and 1 in nest @ 36-38 and 1@ 28-30d. All OK. Female had scoped me out as I walked in, but did not call until I had been there awhile. I am happy it is quiet now. I said goodbye to them all and hoped they lived awhile.

## 2005

24 APR: Out with TJF (*Ted Fremd*). Overcast, cool about 40 deg, rain sprinkles sporadically. No wind with low cloud ceiling. May be too cool and rainy at times to search, we'll see. In for first check. All activity is over and logging done from last year. Occupied ! and with a GRGR in stand also. This is great. The stand has not changed that much from last year, but they did get (log) the unit down the draw. As we walked up 2-track to first nest, #92, we heard 3 low booming notes-call notes like GHOW, but not it exactly. As came up to #92, saw it was occupied by GRGR. Female ? on nest incubating- watched us walk by up and back and did not move. So GRGRs call in daytime with low single hoots. Kept going up draw to other sites. Last year's nest unused. As continued on up to "X" (now #161) heard kek calls. At first sounded mimic-like, but the second set for sure was goshawk. Female incubating on this nest, the large PIPO at top of draw. The call may have come from a male up on the hill because we both thought it sounded further away then coming from the nest. So this is the third GRGR this year and another territory where they are cohabitating. These nests are about 1500 ft apart.

23 MAY: In to check on goshawk-GRGR relationship. All good- both females still tight on nests incubating. GRGR did not move again as I walked by and I can't see anyone else in nest. So the 2 GRGRs I checked today may have chicks, but not as big as those I saw at Luce territory.

20 JUN: Nest check. Successful with 2 chicks slightly younger than other nests checked today. Chicks @ about 21 days. Still lying down in nest with downy back and wings- all down on heads. Female was perched on nest calmly watching me all the time I was there except when I moved to walk away. She then flew out to me and called me out as I left. Very memorable scene of her watching me dead-on in the eyes with both chicks laying before her. The GRGR has 2 chicks, both on branches in the nest tree, all fluffed out but still here.

## 2006

10 MAY: In for first check. Occupied -female incubating on new nest. GRGR again in #92. As going by last year's nest, I heard a good GRJA mimic, so went all the way to top of Jack Ck draw and walked down the other side of draw away from the fire side. Hit the road (076) that I park on at the top. While walking down I saw new nest in a double large LAOC right off of this road. From curve that I park on, walk up to the third large PIPO laying across the road. Can see into nest well from here. LAOC has a double top to it. Need to ask KS (*Ken Schuetz*) to not open up road 076 yet!

21 JUN: Successful with 4!chicks again- youngest about 17 days-oldest about 21-25 days. Female on nest as walked up and to me she sounds and acts like the one 2 years ago that had a clutch of 4 as well. Could it be?

## 2007

14 MAY: In for first check. Yeah-occupied in #163 with female incubating. Measured other nests for FS and I didn't realize how close the newest nest site of last year is to all the rest. I walked by her on way in last year real close and didn't know it. You can see the double LAOC top from the 2-track where other nests are.

18 JUN: Nest check. Successful with at least 2, but again younger than other nestlings I have checked. These are still downy @ about 22 days. No adults in evidence- all quiet.

## 2008

*Did not visit this territory this year.*

## 2009

1 JUN: In for first check. While eating lunch at parking spot- we (*Ted Fremd*) were checked out by a small goshawk (male?)- so now going into find nest. None of known nests are used, and searching stand, did not find anyone. But seeing the goshawk in here constitutes usage-so Active this year.

## 2010

11 MAY: Out with TJJ (*Ted Fremd*). Unoccupied. A note from C. Kranich (*FS wildlife biologist*) saying that her seasonals had checked here on 27 APR. I found no sight or sound of goshawk. Only 3 nests up now-all in partial condition. The area at head of draw with #163 and #161- the habitat is breaking down now. A lot more of the trees are down and dying- feels more fragmented and with less cover than just a few years ago right after the fire. Had TJJ drive car back down to main #24 road to where Jack Ck comes out while I walked and searched the stand down. Only a few draws to E side of creek are suitable but nothing seen or heard.

## 2011

22 July: Sunny finally, about 67-80\*- out with TJJ and Kutya (*Ted Fremd and dog*), last few days before we go to Alaska. Unused. All measured and tagged, only 2-3 nests still visible. The upper draw is in relatively good condition still but stand of the 3 lower nests (*area of #92 and 134*) is deteriorating more from the fire damage, trees are finally dying off.

## LARCH STOOP

LAR <sup>15</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	17	6/9/93	N	S	2	
1994	48	5/10/94	Y	S	3	
1995	15	5/8/95	Y	S	3	Lar #15 found 1986 during Jack Timber Sale"
1996	17	4/25/96	Y	S	2	
1997		5/21/97		A		LAR ALT Nest?
1998	17	4/30/98	Y	S	3	GHOW in #15
1999	133	5/4/99	Y	F		GHOW in #15
2000		4/19/00		A		
2001		5/12/01		UNO		
2002	133	5/9/02	Y	S	3	
2003		5/3/03		UNO		
2004		4/28/04		UNO		
2005		4/24/05		UNO		
2006	133	5/10/06	Y	S	3	
2007		5/14/07		A		LAR ALT Nest?
2008				DNC		
2009		6/1/09		UNO		
2010	133	Late Apr/ early May	Y	S/F		
2011	133	5/10/11	Y	S/F		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Larch Stoop area was first put into the search grid because of the goshawk nest discovered in 1986 during the "Jack timber sale". Only a ¼ acre buffer was preserved around nest #15 in 1987; and, when the "newer" sites (#17 and #48) were found to the southeast of here, this SE draw was observed to be the main usage area. The PFA established in 1993-1994 incorporates these two areas.

Several years there were active goshawk nesting in the area but the nests themselves were never discovered. In 2011, while making final field measurements, one of these elusive sites was finally found (Lar Alt) and it makes sense that this was where they were in those years that I could not

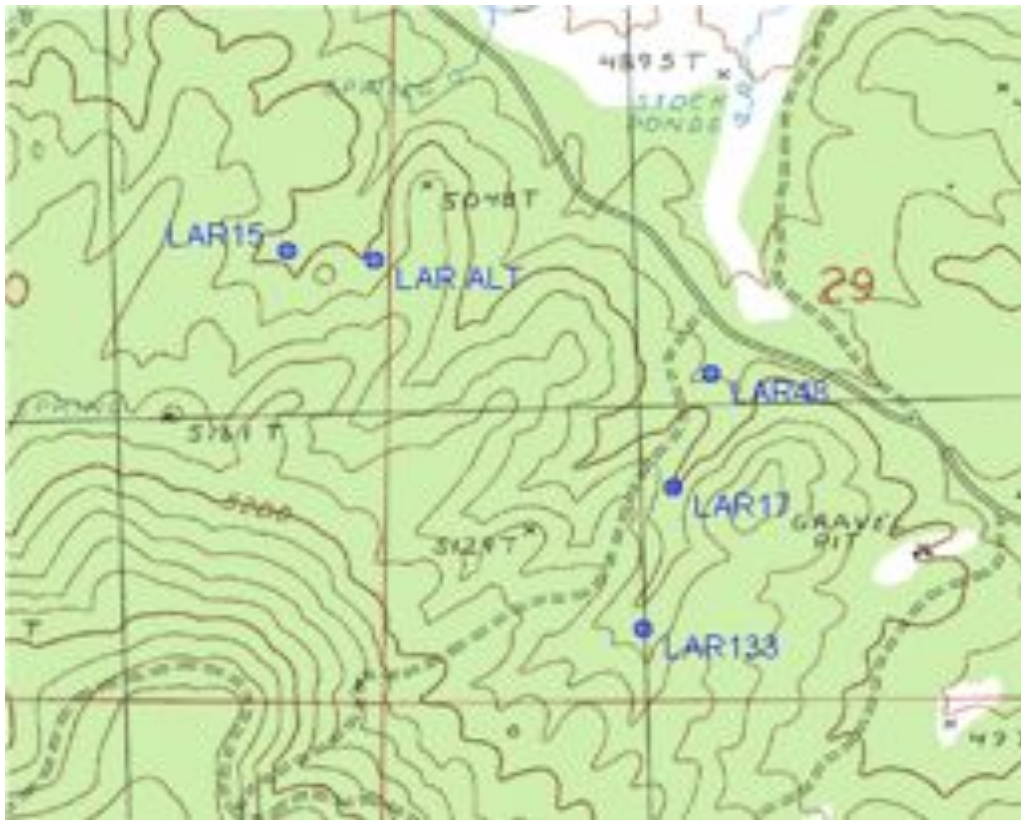
Photo right: Nest tree #133. Photo taken in 2011 from below nest while goshawk female was on nest incubating.



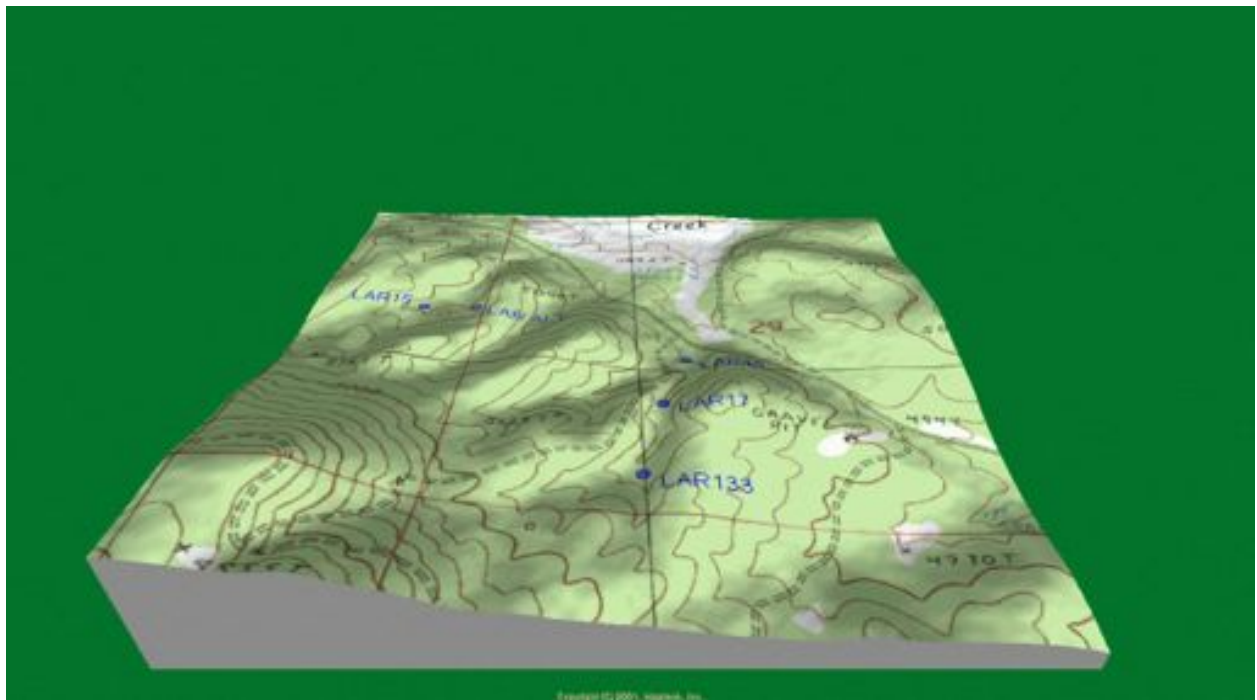
find their nest. The placement of this alternative site fits in well with my field observations during those “missed” years.



Photo left of Nest tree #17 taken in 1993 by C. Schelz  
Photo right of same Nest tree #17 taken in 2011



North up



LARCH STOOP



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
LARCH STOOP -15	NO TAG *	5013	PSME	18	nd	nd	flat	na
LARCH STOOP -17	TAG	5026	LAOC	25	130	42	10	19 to W
LARCH STOOP -48	TAG	4966	LAOC	25	N	40	270	8 to N
LARCH STOOP -133	TAG	5079	DD LAOC	30	105	85	40	10 to NW
LARCH STOOP ALT*	TAG	5032	PIPO	29	300	80	350	20 to W

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
15		I	I	A	I	I	U	U	I	I
17		A	I	I	A	I	A	I	I	I
48			A	I	I	I	I	X		
133				I		I		A	I	I
ALT									A?	

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
15	I	P	P	P		X	DNC			X
17	I	I	P	P	P	X				X
48						X				X
133	A	I	P	P	A	I		I	A	A
ALT						A?				I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

ALT\* = Nest was not marked until 2011, but suspect that this was an alternate nest in the years that territory was active but I could not find nest.

**Post Fledging Area (PFA)** = 473 acres established in 1993-1994, according to FS records

### Recordings

In 1995- Female adult vocalizations [larch stoop 15 95 Jun20.mp3](#) and [larch stoop 15 Jun28.mp3](#)

In 1996- Female adult vocalizations [larch stoop 96 Jul4.mp3](#) and [larch stoop 96 Jun26.mp3](#)

### Trapping and Banding History

In 1993- Female and male adult: Neither was known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### LARCH STOOP

#### 1993

09-Jun-93: 1 adult observed showing territorial defense

12-Jun-93: 1105-1120: 1 adult defensive and 1 downy Nestling visible in nest. Located site for net set-up.

16-Jun-93: 0450-0700: Trapped both adults and banded them. Adult male made prey delivery before getting caught.

27-Jun-93: 1040-1045: 2 Nestlings approx. 26-28 days old. 1 adult present.

03-Jul-93: Nestlings now approx 33-35 days old.

03-Aug-93: Nest site data collection. 2 Fledglings heard begging up drainage still fairly close to nest.

#### 1994

10-May-94: 1200: As stopped on road#24 to go in, we (out with Sonya Daw and Sue, OSU seasonal employee) heard the adult wail. Walk-in to nest # 17- Inactive nest, but heard wail in drainage. NE down drainage, found new active nest (#48) with 1 adult (female?) incubating.

22-Jun-94: Nestling check- 3 in nest @ 24-26 days old. 1 adult present defensive.

30-Jun-94: 1129-1140: Fledgling check- 3 standing in nest, 1@ 34-36 days and 2@ 32-34. 1 adult female? very aggressive- did not see any bands on her.

#### 1995

OLD JACK CREEK TS- RENAMED TO LARCH STOOP: First checked 8 May 95. Occupied nest #15 with female goshawk low and incubating on nest. Male gave low alarm call from the S of area as I got near nest. This nest site as first found in 5/86 during the planning of "Jack TS". Only 1/4 acre buffer was protected in '87. Do not know how often the site was checked in the ensuing years; but, starting in '93, it has been checked and it has been unoccupied until now. This site is adjoining both Larch Stoop and Jack Creek territories, and could just be an alternate site for either place.

26 Apr 95. Walked into nests #17 and 48 and both appear unoccupied. Was walking the drainage for approx. 30 -40 min. and no sight or sound of goshawk. There is another good nest (*now #133*), also in a LAOC, up drainage from #17, also right on the edge of the 2-track. **PFA:** In '93-94(?) areas are marked on a map for PFA, but I think they are informal as of yet. Majority of areas around this drainage are already harvested.

20 June –In for nest check and to record them. 2 chicks I could see @ 24-26 days and 19-22 days. It is hard to see into the nest, could be more. Female came out, stooped, and called at me when I got near the stand. Got recordings of her most was within 10-15 feet, stoops were very close. Female has NO bands.

28 June – Last nest check. There are 3 chicks, 2@ 32-34 days and 1@ 30-32 days. Got second recordings of female but she did not seem as aggressive as last time. Did not collect pellets at this time.

#### 1996

25 APR: into do 1st nest check. Checked on #15 first and nest is unused. Then went over into the drainage with #17 & 48. Female is incubating on #17. She was quiet and did not move off nest.



30 MAY: First nest check. She is still tight on nest, did not flush. Think she is still on eggs actually. I did not get a recording for she stayed on nest quiet. Marked a new OP uphill from the two track, marked by green/black flagging of when to head uphill to get right above nest.

26 JUN: Nest check with 2 chicks in nest @ 26-28 days. Female came out and called, a few stoops, but I did get first recordings. She had no bands.

4 JULY: 2 chicks in nest @ 32-34 days. Got second recording of female.

## 1997

23 APR: 1400 Walked stand and checked N17 & N48 both unused. I walked up and checked on the old structure in LAOC and it also is unused. Went over to the N15 drainage and it is unused. All nests in good shape.

21 MAY: 0900 Did called search of stand and areas of N48 and N17. Forgot the goshawk tape so was using the Cooper's hawk alarm tape. Spent 4 hrs. The area is utilized by goshawk but could not find them. I got a close flew over when at top of draw of road# 132. There were also good mimics in the area all day. See the map for this year of the red circles that note a goshawk circling over me. I called and searched most of the adjacent draws around here. I called the draw by and around N15 where a goshawk buzzed me at top of this drainage. This behavior was more like a hunting male, no real aggressive display. Nest must be near in one of these drainages. Drove up road# 078 going to Jack Ck, and took the fork near the bottom on road# 082. I saw a goshawk circling in the meadow area. This is very good habitat along here and I will have to come back and call this drainage sometime.

*(I think I did this in later years, not this year, no time)*

*(NOTE: Finally found Lar Alt nest in 2011 while marking trees for final write-up. It is exactly in the area described above)*

## 1998

30 APR: In for initial check. Check N15 first and it is being used by GHOW with 2 middle aged chicks in the nest. Female flushed off nest as I walked in. Marked new OP for here, to use the road on the W side of stand and look into nest from road. Went to check N17 and it is occupied, female on nest incubating.

16 JUN: First nestling check. Cannot see well into nest, chicks very young about 14 days? Will have to return to get accurate count. Female was standing on the rim of nest for a long time watching, eventually did flush and call. Out with Dorman and Phyllis Gregory to nest check on their route.

4 JULY: Nestling check and there are 3 chicks, 1 @ 26-28 days and 2 @ 24-26. These are much younger than the age of other nestlings this year. No sight/sound of adults at all. GPS'd N48 and N17, both have signs.

## 1999

4 MAY: In for initial check. The new nest up drainage from N17 that I have watched all these years is now occupied. It will be N133. As I was walking past N17 I heard a goshawk call from SSW. Female was perched below nest as I walked around in order to see. I could not see into nest, so don't know if she had laid eggs yet. It was cold so I left promptly so she would go back to nest. I went to check N15 and it again is being used by a GHOW. A adult flushed from the stand as I walked in and there was one big fluffy chick in the nest, could not see any others.

22 JUN: In for first nestling check. It appears that the nest had failed. There is not much down on the rim nor wh/wa on the ground. I could assume that the nearness of the GHOW at N15 could be the factor, predation for this nest is very exposed. Or it was early when I walked in and the nesting was interrupted, don't know.

## 2000

19 APR: In for initial check. N15 is unused and no sight/sound of goshawk. As walking in the check the other nests, I heard a low-key alarm call in the drainage between N48 and N17. I saw a large female? with fluffy coverts fly off into trees. I went to check both nests up drainage but none of these were being used. As I was walking back down from N17 to search drainage, I saw an adult perched and watching me in this same area that flew off. At this same time, a series of alarm calls was coming from the trees in the middle of the drainage. I searched a bit but could not see any new nest. Since this was so early, I didn't want to over disturb them- I left and will come back later.

14 JUN: There are no goshawk here now and no new or used nests. I searched the whole drainage again, and found nothing. No sight/sound of goshawk at all. I think that perhaps I screwed them up by being here too early. There was definitely territorial display and I saw 2 birds, they may have been in the early courtship or nesting phase and my entry disturbed them, how knows. I

fell up to my knees in quick mud at the spring and got very frustrated. I was burnt out at this point of goshawk hunting, I went home, sigh!

## 2001

12 MAY: In for initial check. N15 is unused. Checked other most used drainage, and all those nests are unused also. No sight/sound of goshawk.

*Did not visit this territory again this year.*

## 2002

9 MAY: In for initial nest check. Female incubating on N133. As I started walking in, I heard a GRJA mimic, thought a good sign. I had a feeling that the original nest would be used, but saw that I was wrong. As I continued walking up draw, doubting my instincts, I heard her beg call. She kept it up and I could follow it to the nest. I could see her on nest across the draw and did not have to walk over close to the nest. So my instinct was right, just the wrong nest!

26 JUN: In for nest check. Late start, for K. Schuetz (*wildlife biologist at the time*) called to ask me about some goshawk nests- some entries are being planned into some PFAs and he was asking me if any goshawk would be impacted. 3 chicks @ 26-28 day range, one slightly younger. As I walked in, I heard the female beg/wail call in the stand away from the nest. She moved 3-4 times around but never was near nest. I scoped out nest with no sight of her ever. As walking back to truck at about halfway, the male perched and called at me. So, she was calling because she knew the male was in the stand the total time. I thought that she sounded frantic and that something was wrong, but all is OK. He was just scoping me out and did not contact call her right away, it appears.

## 2003

3 MAY: In for initial nest check. Walked stand of most used sites and N17,133 still up and ok but unused. Other nest gone. Lots of blow down in this draw now this year. The large PSME snag that was the orienteering tree to get to N17 is down now. No sight/sound of goshawk though. Checked the draw with N15, unused and partially gone now. No goshawk or other structures seen.

5 JUN: In for second called search. Out with L. Vella to call the Flagtail burn area. Late start from being tired from bad call night at Blue Mtn. Hospital- stopped by Forest Service office to get supplies and talked to K. Schuetz- finally got to field at 0930. Drove the camper and Lia's car and will camp near Scotty Ck along road 071 somewhere (found old nest structure right where we parked- looks like RTHA). Lia had GPS 5 and she ran track "5-Jun-03 Lia" and she grid called most of Larch territory. I did 2 stations with her to get her oriented, poor thing dropped her radio and we had to go back to camper to get extra. She felt frustrated I could tell, but I then left her on her own and she got her stride back. There is a lot of gear and process that is new and she just needed time to figure it out for herself. (She also found the dropped radio). At her station 7, she says she heard a goshawk call. This is between N17 and N133. I will go run a line through here tomorrow just to check. At her station 1, she brought out a Cooper's which is nesting up here somewhere. I marked it as COOP on GPS 3 that I was using. I saw the big female fly over road and perch to watch me as I drove back up road. I mistook her for a goshawk at first, she was so big, but then heard her call. Both male and female had buzzed Lia while she was calling. COHA territory is up at east end of Larch along the road 071 on the upper side, the one I take to get to NSC (see notes for NSC and Jack for this day). Lia called about 20 stations in Larch - will have to print out our tracks on map to see how they coincide. She picked up a RTHA calling at her near area of N15. It is hard to gauge how effective this is with somebody inexperienced with goshawk. The only guarantee you have is if they go directly by a nest and get a good response. If it is a subtle one though, I'm not sure others would follow up on it as I would. Even though you get more area covered, is this a good enough survey? I really think I am effective better by myself.

6 JUN: I am going into recheck the area that Lia says she heard a goshawk. I could be a mimic. She is starting to call Jack starting a road 24 working up drainage to nest sites and around toward burn. Ran a track "6-JUN-03" of GPS 3 up by the nests, around to east coming down to 24 and across to N. To N of road is where Lia said she heard goshawk and I picked up a good GRJA mimic. I think this is what Lia heard, but with a mimic in area, goshawk must be nearby somewhere. I also found the RTHA near the meadow area NE of N15, marked it on track. So this territory is unoccupied at least in the normal stands. We spent 2 days in this area, and between this and Jack and did not pick up any goshawk.

## 2004

28 APR: Out with Chadski (*friend out for the day*). In for initial nest check. 2 nests are still partially up. At N17, Chad saw a goshawk fly over but high up. So they are around here somewhere. It looked like a hunting male. We walked the drainage and did not see any other structures. Will have to come back and re-check in better weather. Drove over to N15- it is still partially up but unused.

15 JUN: In for second called search. Out with TJF (*Ted Fremd*). We walked the draw by nests up toward NSC area road and over to W toward Jack area. No sight/sound of goshawk. TJF saw a large raptor, goshawk ? RTHA?, but no good ID. So call this territory unoccupied.

## 2005

24 APR: In for first check. All nests unused- in partial condition. Walked further up draw to old 2-track and back down searching drainage. No sight or sound of goshawk.

*Did not visit this territory again this year.*

## 2006

10 MAY: In for first check. Occupied in #133 with female incubating. Nest is nicely rebuilt. Best OP is past the nest tree up into clearing.

21 JUN: Nest check. Successful with 3 chicks @ 21-25 days. Female called and only stooped once.

## 2007

14 MAY: In for first check. Stopped a long time @ highway construction in Seneca! Unoccupied- walked stand of main nest area and only 1 nest left. No sight or sound of goshawk. Ravens are nesting at top of this draw though. Went over to the area of N#15 this year also. Nest gone but of interest yet. Have to park down nearer road 24 now and walk in, old 2-track that leads in here is impassable now. But as got to stand I saw adult goshawk streak by, from SE, going up draw from stand of #15. In searching, I walked down and traversed over to the nicer drainage (SE) that leads up from where I parked. I have called this draw years ago and I have a hunch that they might be up there. This is a draw between both nest stand of LAR. Perhaps I'll have time to get back here and call later, perhaps not.

*Did not visit this territory again this year. (Thorn Fire Detail this year took my time)*

## 2008

*Did not visit this territory this year.*

## 2009

1 JUN: Unoccupied – no sight or sound of goshawk. Searched stand but only the one nest still up.

*Did not visit this territory again this year.*

## 2010

Late APR or early JUN: Cindy Kranich's seasonals went in to check this territory. They said the #133 was occupied with female incubating. Do not think a final check was made here as to final status of nest. Called Occupied (S/F).

## 2011

10 May: Finally a nice sunny warm day to begin with. Monday, yesterday, was very cold with snow storm in AM, never warmed up above 45\*. Today clear and no wind so far. Temp. at Larch is 50\*. Could drive all along road #24 not blocked by snow. Saw several antelope in meadow of road 24 to N. 1 newborn with a large rough mane. OCCUPIED in #133 with female incubating. Measured all 3 trees here and even 133 without disturbing her (2 photos of #17 and 1 photo of #133) The LAOCs are dying in this draw, lots of mistletoe now. Walked into #15, the two track into this stand is heavily grown over now. Could not find the old nest or exact tree of old PSME. So marker is of the stand and no further data retrieved on this one nest. The PSME grove here has deteriorated a lot with much down and deadfall now. But while at this #15 grove, heard a goshawk call to SE going back toward the other nest sites. TJF and I split up to search- no goshawk seen but I did find an alternate nest "LAR ALT". I marked and tagged it and it is in the draw that I would have expected it to be in. I had searched this draw that is in-between the 2 known nest stands many years in the past, but never found a nest in here. This is even in the area for two of those years that I had heard and seen goshawk. So perhaps this is the place they used in those years. The call we heard today I thought was a male anyway, slow cadence and low register. My impression is that this might have been the hunting male for the female incubating on #133 and he was just using this area for hunting.

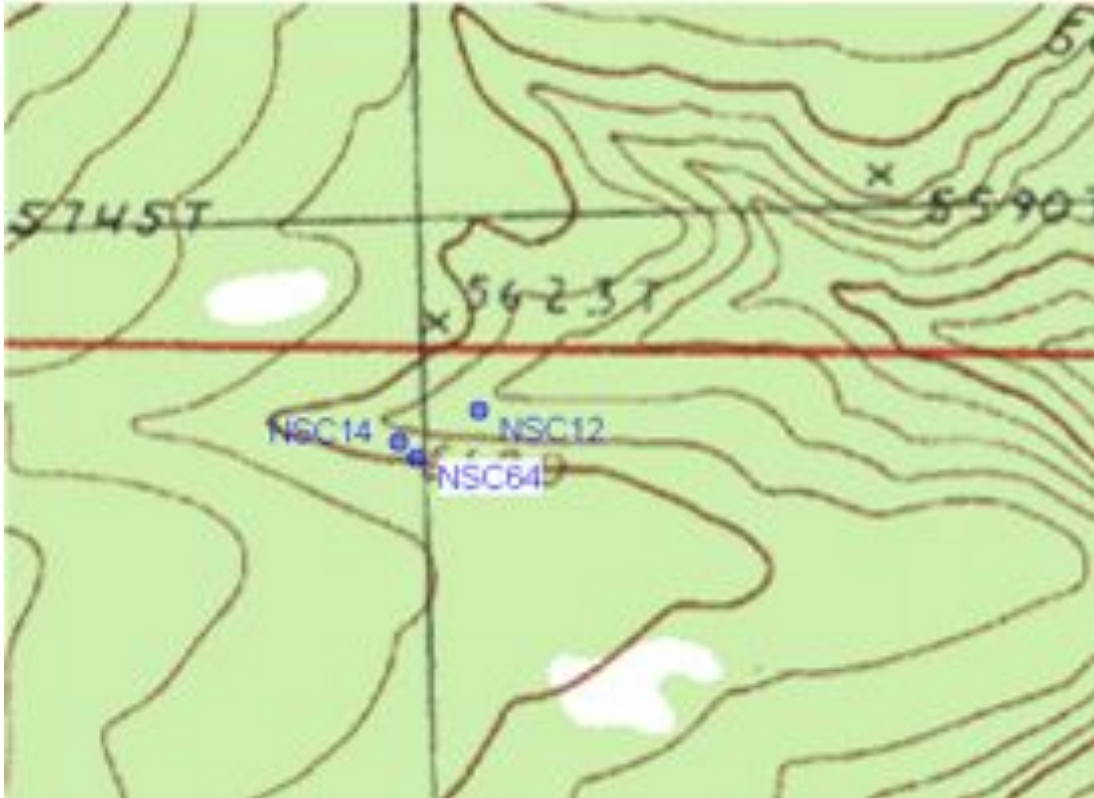
## NORTH SCOTTY CREEK

NSC <sup>13</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993	14	5/10/93	Y	S	2	
1994		5/6/94		A		
1995	64	5/8/95	Y	S	2	
1996		5/2/96		UNO		
1997		5/3/97		UNO		
1998		4/30/98		A		
1999		5/18/99		UNO		
2000	64?	5/2/00		A?		
2001		5/13/01		A?		
2002	64	5/22/02	Y	S	3	
2003		5/7/03		UNO		
2004		5/14/04		UNO		
2005		5/23/05		UNO		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

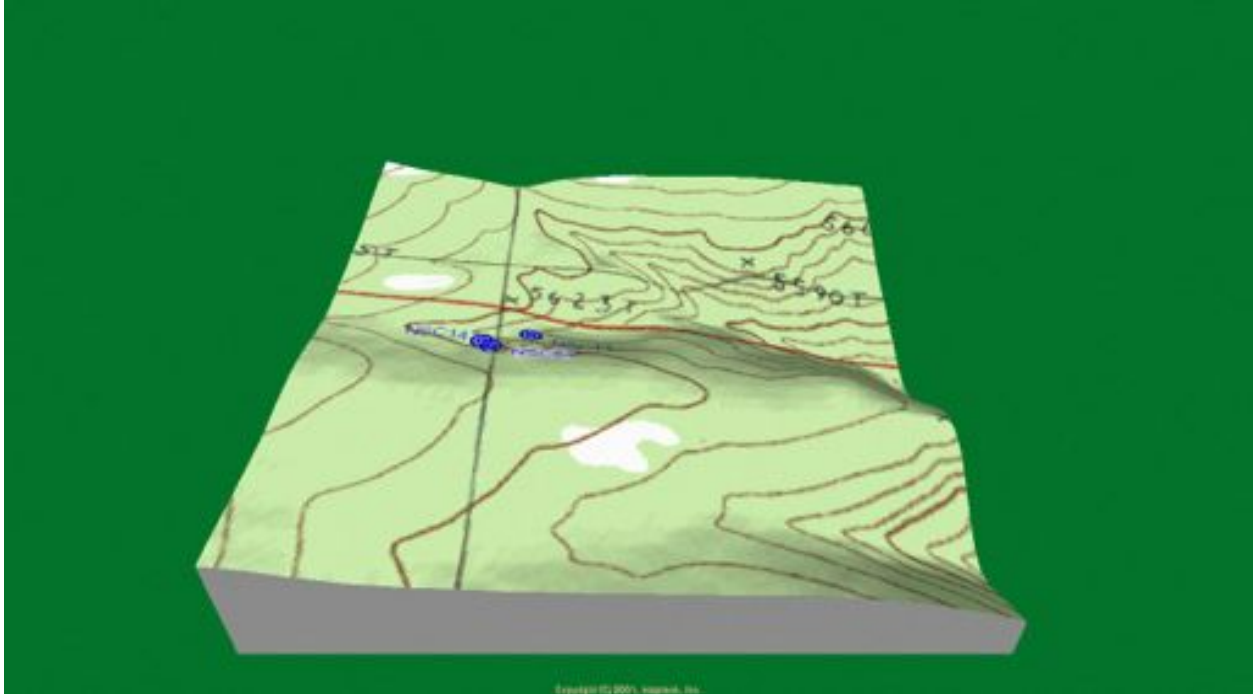
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

While planning the Scotty Creek management area in 1993, this nest cluster was found causing a shift of several cutting units designated for this area. This is a rather localized nest cluster at the top of a draw in one of the highest elevation goshawk territories on this study. It is located on a ridge that is usually the last area to be free of snow.

As in other territories, the usage activity is probably under-reported. For several years goshawk were observed in this draw, but exact nest sites were not found. The draw is fairly steep sided and the forest structure is a mixture of older trees and smaller clumps of firs. There are many old logged-out units that surround this draw. However, since the road leading into this area has had a road closure posted since about the late 1990s, the forest stands seem to be rehabilitating. This process is noticeable in other territories, e.g., that when these stands are left alone (and without fires or drought) the natural successional processes ensue. This draw looks very much like it did years ago and thus is still a viable territory.



North up



NORTH SCOTTY CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
NORTH SCOTTY CREEK -12	TAG	5579	PIPO	32	S	100	70	15 to SE
NORTH SCOTTY CREEK -14	TAG	5602	PIPO	24	SW	89	70	24 to SE
NORTH SCOTTY CREEK -64	TAG	5603	LAOC	26	NW	65	70	10 to SE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
12		I	I	I	I	I	I	X		
14		A	I	I	I	I	I	X		
64				A	I	I	I	X	R	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
12					DNC	DNC	DNC	DNC	DNC	X
14										X
64	A	I	I	X						X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 470 acres established in 1993 according to FS records

### Recordings

In 1995- Female adult and juvenile vocalizations  
*north scotty creek 95 Jul1.mp3 and north scotty creek chick whistles 95 Jun17.mp3*  
*and north scotty creek juvs 95 Jul15.mp3*

### Trapping and Banding History

In 1993- Female adult: She was never known to return to the Malheur (see Figure #4 for band numbers).

## FIELD NOTES

*Regarding field notes: Some of the 1992-1993 are field notes taken from others (Sonya Daw and Cam Carstarphen). All other years these are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### NORTH SCOTTY CREEK

#### 1993

10-May-93: Nest found by BV wildlife biologists (N#14).

07-Jun-93: 1430-1450: 1 adult defensive and brooding, 1 Nestling seen.

12-Jun-93: 1200-1215: 1 adult observed, defensive behavior.

17-Jun-93: 0500-0725: Trapping and banding, caught 1 adult female. Never saw or heard the male, heard nestlings in nest. Started early and had net set by 0500. Female was caught at first stoop. I took her away from area while Sonya Daw and Charlie Schelz re-set net for male- who never did show up. I kept her hooded and calm, but went back at about 0710- no more than 2 hr hold. Sonya banded and we took measurements then released her. Nestling was very chirpy through all this. ( See notes 93-63 to 93-65)

27-Jun-93: 1250-1300: 2 Nestlings seen, approx. 29-31 days old and 26-28 days old.

03-Jul-93: 0950-0955: 2 Nestlings at approx. 36-38 days old.

09-Aug-93: Nest site data collection. 1 Fledgling heard down drainage.

26-Aug-93: Nest #12 Nest site data collection and Nest #14 site data collection. 1 Fledgling heard down drainage.

#### 1994

06-May-94: 1300-1600: Stand watch 3 hrs.- Territory appears unoccupied; no sight or sound of goshawk. Drove by nest area, walked out to look at it, shows no sign of activity. Detailed stand watch notes on page 94-23. Was using the OP uphill along the haul line, but it does not have a good view into the nests.

26-May-94: 1300-1600: 2nd standwatch-3 hrs. OP is along ridge with view into whole drainage - off road#215 that runs along ridge top down to a landing that gives a view back west up to nest area. 1 adult grey raptor (90% sure of goshawk id) flew up from stand down drainage from #14 nest. Marked area to search. Appears to be a moved/new nest? Bird was flying down from nest area into the Scotty Creek major drainage.

9 JUN: With S. Daw to do vegetation stand plots. We walked in N #12 and #14, and both still inactive. No sight/sound of goshawk. Drove down to check on the area where a bird was sighted on the stand watch. Called 2 stations on road#998 above this site but no response. We will do vegetation transects through here now. Finished 9 plots through stand C1- split out in a group of PS/L. Saw a goshawk flying low thru forest at plot 52 heading into Scotty Ck drainage. Good stand up on top near plot 9, may need to go call in this.

10-Jun-94: 1200-1621: Data collection of vegetation plots. Saw 1 adult flying low & fast down drainage near plot pt.#5. Called stations while data collecting in stand just N of nests and lower down drainage. Drove around down to road#3190 and #390 in Scotty Creek drainage. Used caller working from the ridge to north of road#390. Saw adult circling near and land to watch me then flew West up N Scotty Ck. drainage. Afterwards, I drove up #390 to see if it is good habitat. The north side of #39 is good but there are large HCC (*clear cuts*) on south side. This north side does connect to the slope of good habitat I called this AM on nest side. So, have seen a goshawk utilize this area but no real defensive behavior or new nest found.

22-Jun-94: Calling stations along Scotty Ck where Sonya sighted goshawk. Good drainage E of road 3190, and E of #14 nest. (Sec 5, off road #502 that ends in meadow- see map) No sight or sound of goshawk. There were good GRJA mimics in this draw though.

#### 1995



**PFA:** In '93, 31 ac. at nest site and 440 ac (with 250 ac in high CC) established.

8 May: In for initial check. Arrived at the OP overlooking NSC drainage. It is raining and it started only as I was driving down Scotty Ck road. Does not look like it will stop, will sit and watch for awhile maybe get a break in rain then walk into view nests. Watched but no sight/sound of goshawk. A TV (Turkey Vulture) did pop up and fly from the same rocky cliff area on west side of drainage. TVs did breed in here in 1994. Sonya and I searched for nest but did not find them. Walked in to check N#14. Occupied, but in a new nest that is in LAOC right near to #14. Adult goshawk on nest, did not flush.

17 June: In to check nestlings and record. First part of recording is the chatter of the chicks. 2 in nest, 1 @ 14-17 days and one @ 17 +days. The older one can sit at side of nest and look out- 1/4 again bigger than the little one. Female did not come into me until I was 5m from base of nest tree. She did a few 'croak' calls but did not get them on tape. I was at base of tree shooting up at her 20m at closest. Other times she was flying away. On tape, can hear the chatter and whistles from chicks. At about 3/4 of way through tape, the female landed on the nest briefly to check on chicks. I ran out of tape, will have to dry out microphone- I think that may be the static noise.

1 July: In for second nest check. 2 nestlings very different in age. One already branched @ 34-36 days and one @28-30 days still with downy crown on head. Got a good recording of duet between the older juvenile and adult female. Female has no bands. The juvenile has a higher pitch than the adult. I was recording with in 30 ft of nest tree, but the adult was off in the trees about 50-80ft. Did not collect pellets at this time. She had stopped at nest to make food drop before she noticed me. I didn't see the chicks eating so she may have to get back to them to feed, so I left.

25 July: In to do measurements on tree. One fledgling near nest and one flew in from north in drainage. Got a brief recording of juveniles. GPSd all the trees in this area with the 3 nests.

## 1996

2 May: In for initial check. Can drive all the way into the nest area now. It was warm enough last week to melt the last big snow drift on road. All 3 nests are unused. No sight/sound of goshawk, walked along road right around the nests- nothing.

1 June: In to do search and use the caller. Spent 3.5 hours calling the area within a PFA range (see map). No sight/sound of goshawk. Looking at back records - goshawk were responding to caller by end of May last year. This is right about hatching time. So, this being the 1st of June, if goshawk were in the immediate area I believe I would have elicited a response. I have called the good habitat areas roughly 1/2 mile around the nest area. This territory is unoccupied this year.

## 1997

3 May: In for initial check. The road has a closure sign on it all the way out to the main road #071. Will have to take a long walk into nest area. It takes about 30 min. to get in. All nests still up but unused. Walked around and through the stand but no sight/sound of goshawk. Spent about 45 min in stand.

26 May: In for search and used the caller. Started from below of Scotty Ck road and #179. Walked and called up drainage to nests. All still unused and no new structures or goshawk seen. Walked along road #998 at top over to nice stand at end of road. Called and searched this stand, then walked down ridge to Scotty Ck road and back to car. Nothing.

## 1998

30 Apr: In for initial check. This is the earliest I have ever gotten into this nest area. The snow packs were all gone along the road coming up high. They have logged along the top ridge that leads to the NSC drainage road. The road is still muddy but passable- lots of log stacks on plateau top now. Walked into nest and all 3 unused - still up but getting ratty. Did get a silent fly by from goshawk as walking along road - at the hairpin turn and deep drainage that is just before the nest OP, just to NE of nests. Goshawk was watching me and flew overhead heading down drainage ESE toward Scotty Creek proper.

*Apparently never got back into this territory again this year.*

## 1999

18 May: In for initial check. I am on the Scotty Ck road and will hike up from the bottom of the drainage. Cannot drive into site from above as usual- too much snow. All 3 nests are gone now. Marked route into site on GPS and remarked the trees. No sight/sound of goshawk.

22 June: In for second search and using caller. The upper road was open, so drove to first junction before the nest sites and started calling. Kept a track log of route, which was along the roads mainly, but went down to Scotty Ck road apparently. See track logs. No sight/sound of goshawk.

## 2000

2 May: In for initial check. Again a road closure at the main junction with #071. Will have to take 30-40 min to walk in. Possibly occupied? As I came around corner of stand where nests are, I thought I heard a wail call. Only one nest #64 looks like it has been built up again, all others gone. As of last year's notes, this nest was gone, so it may be early and they are building on this nest again. Will have to check later in June. Note: 33 min to walk in, 18 min searching stand, 29 min to walk out = 1:18.

14 June: Walked into check nest. Nest #64 is 1/2 built only. It was gone in 1999 and only started this year again on first entry. Perhaps it was an attempt that failed this year. But it was definitely worked on, but now unused. No sight/sound of goshawk in stand at all.

## 2001

13 May: In for initial check and have to walk in from road closure. The one nest structure still up in unused but the territory is active. I marked on GPS "goshawk X" where goshawk flew directly over me down drainage. I was searching in drainage to NE of old nest sites when a large adult - female size - flew over me, silent. Searched area but found no structures. This is the same drainage that I saw goshawk in years past (see above notes). I will check later to see if I can find a nest - but this is being used again this year.

19 June: Walking in for second search. No new nest or goshawk seen. Searched the stands and between them but no goshawk sight/or sound. Possible that the area is used by a non-breeder or I saw a hunting male. Territory is active and in someone's PFA!

## 2002

22 MAY: In for initial nest check. Road has been snow packed so this is the first time I could access this area. N64 is used, female on nest incubating. Can see well into nest from road at the corner where you first come into the nest area. As I got out of truck, I heard a great long and loud coyote sing down in the drainage. As I was walking in, coming up the draw that road goes around before the nest stand (place where I saw goshawk last year), 3 young coyotes trotted by me just down off the road. They did not see me. There was a slow cow they were trailing but she didn't seem bothered by them or me.

26 JUN: In for nest check. 3 chicks @ 26-28 days. All sleepy and possibly just fed. Female was perched in tree near to nest tree and just calmly watched me the whole time. It was a very peaceful scene and time.

4 JUL: Final check. There is only 1 hunkered down in nest now @ about 34 days. On adult, male?, was perched at tree and did a slight stoop as I first came in. Called a few times but stayed at distance from me. Couldn't see or hear the others, but assume all fledged.

## 2003

7 MAY: In for initial nest check. Road closure was down so could drive in a ways to site. Only N64 is up, others gone. I searched around the nests, down the drainage to the secondary draw that comes back up to the road where I saw the hunting goshawk and coyotes one year. Runoff is good and this small creek is running. No sight/sound of goshawk. As I was back at the road closure, scoping out the Larch and Jack drainages, I saw what I thought was a goshawk fly across the road from the NSC area down into the Larch area. There is a draw off this top ridge that I think I should look at some time. Access is better to come from the top here and work down toward road 24 and finish there.

5 JUN: In for second called search. This is combined with the 2 days out with L. Vella grid calling Larch and Jack. After getting Lia started at Larch, I drove up road 071 into NSC area. Not down to the nest sites, but called the upper draws nearer road closure where I had seen the "goshawk" flying out of earlier. I did get an accipiter to come into watch me, but got no vocals. I think I had mis-ID the large Cooper's here for a goshawk on my first visit here. It is close enough to the area where we saw them today, to have them checking us out. I then called stations below 071, top parts of Larch area and over to the HCC that is toward Jack. No sight/sound of goshawk. I checked on Lia to see where she was and she was OK. I then drove down to road 24 and started the draw between Larch and Jack. (see track log for Larch and Jack on these days).

## 2004

14 MAY: In for initial nest check. Out with KS (*Ken Schuetz*). Unused and only 1 nest is still up. Walked the stand and side draw just showing KS the habitat, but no sight/sound of goshawk.

23 JUN: In for second called search. See photo 2301-82. Spent about 3 hours calling stand and suitable surrounding places but nothing. No sight/sound of goshawk nor any new structures. It seemed unusually quiet all around.

#### **2005**

23 MAY: In for first check. Unused- all nests gone now. I walked around stand and sat to listen about 30 min, but no sight or sound of goshawk. I guess and fear that it is only my witness now that will remember this place for them.

#### **2006, 2007, 2008, 2009, and 2010**

*Did not visit this territory these years.*

#### **2011**

22 July: Sunny about 67-70\*- out with TJF and Kutya (*Ted Fremd and dog*). Road closure up again which is good will have to walk in. Unused, all nests gone and trees tagged and measured. The drainage where nests are looks good, with this area closed off it is rehabilitating, the forest looks good and healthy in the surrounding stands also.

## NORTH SWAMP CREEK

NSW <sup>43</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	86	?		S		Found by FS personnel
1997		4/23/97		UNO		
1998	86	5/11/98	Y	F		
1999		6/10/99		UNO		
2000		6/24/00		UNO		
2001		?		UNO		
2002		5/10/02		UNO		
2003		5/13/03		UNO		
2004		5/7/04		UNO		
2005		5/17/05		UNO		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		
2011	86	8/23/11		A?		Nest used, but species unknown

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Forest service personnel doing random surveys for management planning purposes found this territory late in the season. This is one of the territories that I had attempted to turn over to volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years. In 2004, I did an extensive search of surrounding area again, but never found any other nest sites (see 2004 notes).

The draw that contains the nest sites is a thin remainder of the mature forest structure that is bordered by clear cuts and logged out units. One side of the draw itself is clear cut. The old structure, # 201 when found, was one of the few large PIPO maintained in this meadow area that had been heavily cut. It is a good indication that this whole long draw was once suitable habitat and used by goshawk in the past. When visited in 2011, it was encouraging to see that this draw is again rehabilitating. The road that leads into this draw has had a closure sign in place since the late 1990s which most probably has attributed to the area having the chance to rehabilitate.



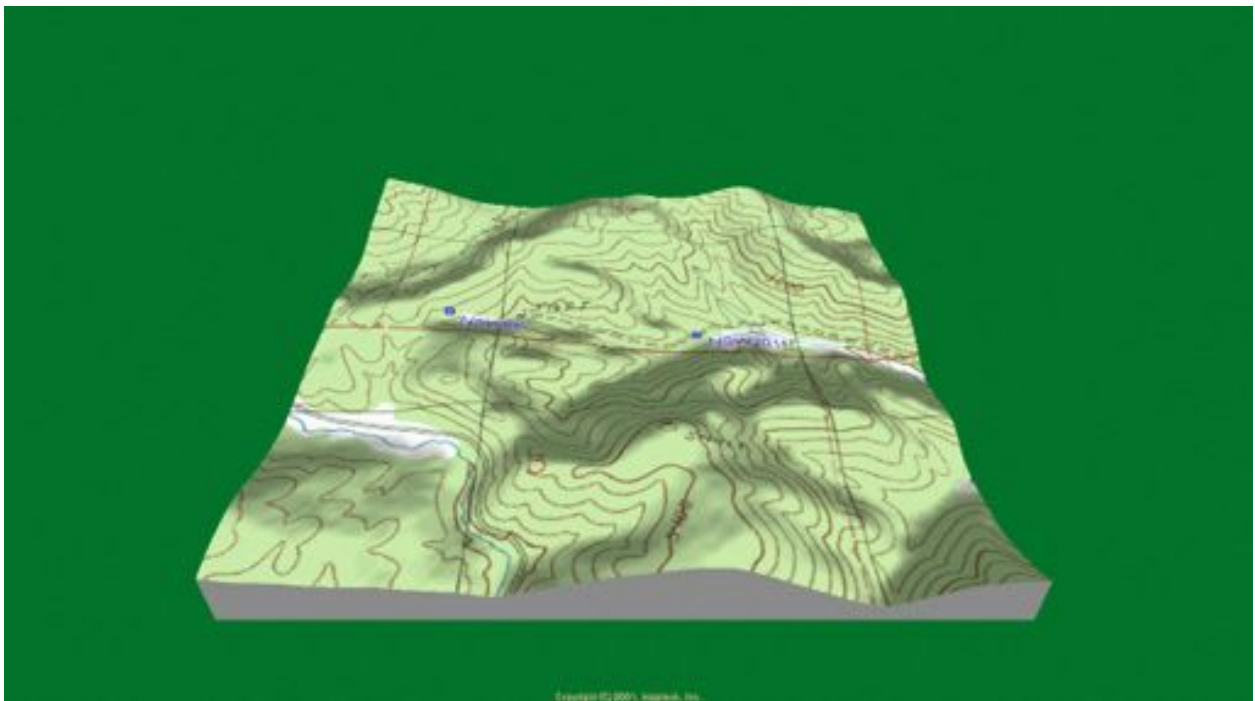
Upper photo of Nest tree #201

Photo to left: View of re-growth of forest habitat surrounding #201 nest area.





*North up*



NORTH SWAMP CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
NORTH SWAMP CREEK -86	TAG	5280	PIPO	34	140	50	220	21 to SE
NORTH SWAMP CREEK -201	TAG	5108	PIPO	40	70	40	150	15 to NE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
86					A	I	A	I	I	I
201								I	I	

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
86	I	I	I	I	DNC	DNC	DNC	DNC	DNC	A?
201			P							P

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)**= 423 acres established according to FS records.



## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### NORTH SWAMP CREEK

#### 1997

23 APR: 1650 This is a new area for me this year - found by BVRD people in 96. The drainage is steep and nice habitat just N of Flagtail territory. Nest tree is right along the 2-track as you go down into drainage. N86 is unused at this time. Have to go up on to hillside to left as walking down to see into nest.

*Did not return to this territory again this year*

#### 1998

16 JUN: Dorman and Phyllis Gregory had checked this territory earlier and had seen a goshawk on the nest and had heard a goshawk (male) calling in the stand. We went back this day to do first nest check. Failed- nest is empty with little wh/wa on rim even. Someone had moved the road block and had driven down this 2-track right by the nest. Could have caused failure or it could have been the weather.

#### 1999

10 JUN: Gregorys had done the initial check and found nest empty. I came in to do the 2<sup>nd</sup> called search. I called and walked a long way down the 2-track. It is chopped up by cuts scattered throughout this drainage. There is (marked NSW X) (*now #201*) an old nest site way down by the meadow area along this road but not quite yet to the DOG unit. Apparently, this habitat use to be intact all along this drainage and used. Nest 86 is still in good shape but no sight/sound of goshawk. Searched a small area across road#2170 from the road closure here, but no sight/sound of goshawk either nor any structures.

#### 2000

24 JUN: Gregorys did first check- unused- and I am in for 2<sup>nd</sup> searched call. Nest still unused and I called stations along drainage between N86 and the old X structure. No sight/sound of goshawk.

#### 2001

Gregorys had this territory to check and reported that it was unoccupied. I am not sure of the quality or quantity of the searched done this year.

#### 2002

10 MAY: First check done around this date. Gregorys checked this and said that it again was unocc, but the nest was still in good shape. Not sure of the quantity or quality of any other searches.

#### 2003

13 MAY: In for initial nest check. Nest is still in good shape but unused. I walked and search the drainage around this site, but no sight/sound of goshawk.

*Did not visit/check again this year.*

#### 2004

7 MAY: In for initial nest check. I just saw a male? goshawk fly across road 24 about .2 miles from the Wickiup study plot heading into FLA area, but just past the meadow area. Walked into check N86 but unused. Walked down drainage to old X structure, partially gone, then turned up that draw and circled back to N86 along the ridge. There is some good habitat but saw nothing new. Heard a good mimic in the draw and with seeing the goshawk along the road, there is an active nest in here somewhere.

24 JUN: In for second called search. See photo 701-86. Searched and called the areas that looked good from the photo. The stand to the S, closest one to the HCC (*clear cut*) on other side of nest site, looks good on photo, but it is small area and steep. No sight/sound of goshawk nor any structures seen. Walked down to bottom of HCC and over up toward N86 calling. Nothing. Unoccupied this year.

#### **2005**

17 MAY: In for first check. Checked on #86, unused. Nest still in good shape but nobody here. I just walked into check the nest an immediate area, did not search the whole stand. It started to rain and it is cold weather. Note: Need to sometime call along road #2470, through Keller Spring area and onto ENE toward Luce Creek sites. Good habitat along this area. Possible alternative sites here.

*Did not visit/check again this year.*

#### **2006- 2010**

*Did not visit/check again these years.*

#### **2011**

23 AUG: Out with TJF/K (*Ted Fremd and dog*) sunny and warm. Parked at road closure to walk in. #86 looked like it was used this year. Active by some raptor. Nest is well maintained still and found prey remains at base of tree (1/4 DOSQ). #201 is barely visible now, but the habitat at this end of the draw has really improved. The understory has grown back and the complexity has increased well. It looks much better than in the first years here! RTHA was perched nearby watching us in this stand.

## SNOWSHOE CREEK

SNO <sup>29</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994	56	6/30/94	N	S	2	
1995	66	5/30/95	Y	S	2	
1996		4/25/96		UNO		
1997	97	6/25/97	N	OCC		
1998		5/2/98		A		
1999	135	6/10/99	N	S	2	
2000		4/18/00		UNO		
2001		5/12/01		UNO		
2002		5/3/02		UNO		
2003		5/13/03		A		#179 used-no good species ID
2004	135	4/30/04	Y	S	2	3 nestlings
2005	179	5/4/05	Y	S	2	
2006	135	5/10/06		Usurped		GRGR
2007	135	5/14/07	Y	S	2	GRGR using #179=S
2008				DNC		
2009	223	6/1/09		OCC		#223 used-no good species ID
2010		5/11/10		A		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory, first monitored in 1994, was one of the areas incorporated into the second survey performed during Haines (1995) M.Sc. efforts.

Geographically, this is a moderately flat, rolling area running from NW to SE down into the small open basin of Snowshoe Creek. The forest structure here is still a mature intact old growth (at least old growth for this forest), with a mix of pines, firs, larch, and small openings. While there have been a few cuts in this area, the draw where the nest cluster resides is still in healthy shape. More recently there has been an increase in the amount of downed trees, but not any significant deterioration to the stand since it was first found.



This territory also supported GRGR co-habiting successfully with goshawks in the same year (also see Geary and OG 238 (Middle Route)).

Photo left: Nest tree #56, leaning PIPO in center.



Photo upper left: Nest tree #66

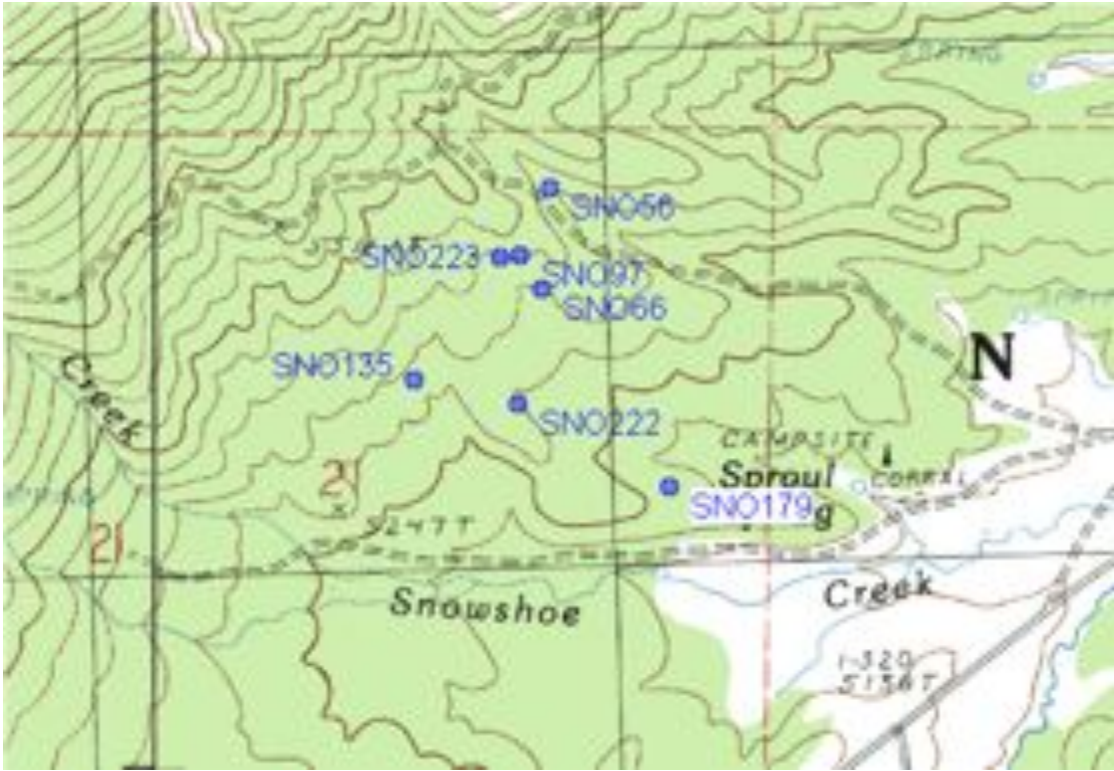
Photo upper right: Nest tree #97, large fir on right and nest tree #233 is directly downhill from this.

Photo lower left: Nest tree #135

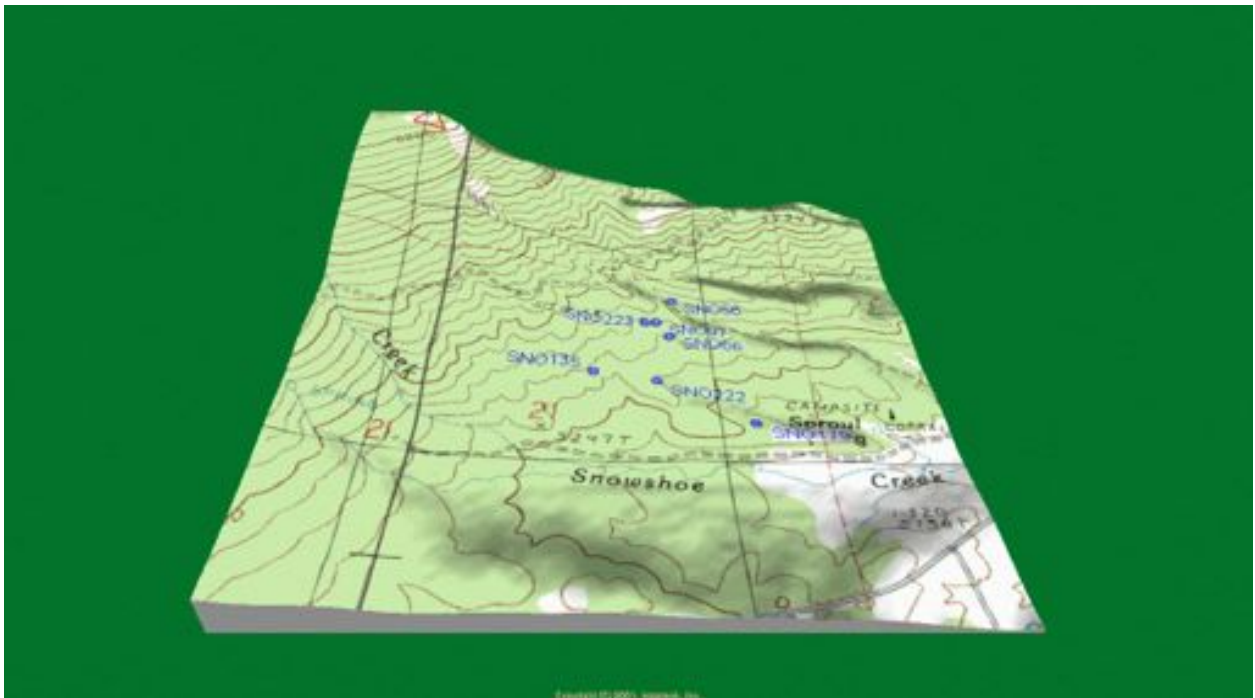
Photo lower right: Nest tree #179, the dead LAOC on right







North up



SNOWSHOE CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
SNOWSHOE CREEK -56	TAG	5316	PIPO	39	SW	55	195	5 to E
SNOWSHOE CREEK -66	TAG	5284	PIPO	27	100	35	flat	na
SNOWSHOE CREEK -97	TAG	5313	PSME	45	S	60	205	18 to E
SNOWSHOE CREEK -135	TAG	5256	PIPO	31	180	70	240	3 to S
SNOWSHOE CREEK -179	TAG	5175	DD LAOC	22	204	50	100	13 to NE
SNOWSHOE CREEK -222	TAG	5251	PIPO	22	214	40	130	5 to NE
SNOWSHOE CREEK -223	TAG	5318	PSME	33	86	55	250	15 to S

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
56			A	I	I	I	I	I	I	P
66				A	I	I	I	I	I	I
97						A	I	I	I	I
135								A	I	I
179						P				
222										
223										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
56	X						DNC			X
66	I	I	I	X						X
97	I	P	X	X	X	X				X
135	I	I	A	I	U	A				I
179		A?		A	I	U				P
222										P
223								A		I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)** = 430 acres established according to FS records.

### Recordings

In 1995- Female adult vocalizations

*snowshoe 95 Jun20.mp3 and snowshoe 95 Jun28.mp3*

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### SNOWSHOE CREEK

#### 1994

Summary: New nest found by Robb the falconer (*falconer attached to the first OSU field crew*) is S of Flagtail #24 over the hill. Directions: Hwy 63 just past road#24, take road#645- it goes across the meadow area just NW of Hwy 63. Drive to cattle guard on 645, (this is just as you are heading into forest). From here, drive 0.5 mi up road (NW). Nest is due E of road in drainage. Large PIP0 about 100' from road, nest is about 70' up. If you come to the Y-junction with road#848, the nest is 0.15 mi back down the drainage. The drainage to the W of here, Robb showed me, also had stick nest in it. Good habitat to search if nest moved, Sec 21 NE.

30-Jun-94: Found new nest #56. Rob-a falconer that helped in 1992- dropped by and said he had noticed a goshawk. Went with him and found nest - I believe he had already checked it out, something fishy about this. Nest is due east of road#645 in draw. 2 nestlings- 1 standing on branch- at 32-34 days old. Responded to caller with their wail. One adult in area flying and a few alarm calls. Nest is in PIP0 about 100' off road#645. I have a feeling that this is the nest that Karen Haines said she just found working on her area, but it turned out to be a different one than she had found.

#### 1995

21 Apr 95. Walked up road # 645 to look at nest #56 which appears unoccupied. Was in area no more than 1/2 hr.

30 May95: In to use caller and search. Found new nest # 66 in the drainage to SW that was suspected as goshawk territory in '92-'93- still good habitat. Nest is approx. 300m S of #56. Female responded by silent fly-in and perch in snag on top of ridge between the two drainages to call while I was still in the #56 drainage. She became vocal when I walked to her and started searching the SW drainage. Nest is well hidden in a PIP0 that is in a clump of white fir right along the 2-track that runs down this drainage. Female went back to the nest to incubate. It took me about 40 min. walking around her to see her, yet she stayed quiet on the nest and did not flush.

20 JUN: In to record and check nestlings. 2 chicks in nest @ 24-26 days. Female was not at nest but in area being quiet. I was watching nest for about 20-30 min., had even walked right down to the nest, but got no response. I had idea to playback through the Nagra speaker, it was a very faint call, but it got her to respond. I got a recording of her alarm call. I was shooting up into trees above me, but she was still 15-20m from me, and never did stoop me. She did not have any bands.

28 JUNE: In for final check and recording. As walked in and set up scope, female came out and called 1 set over me. I had to walk to nest in order to get her to continue calling at me. Second recording taken yet she was way up at top of tree 40 m? up with a slight breeze going. She did not come any closer this time. 1 chick @ 32-34 days and 1 @ 34-36, but both still in the nest. Did not collect any pellets this time, will do it when I GPS the tree later.

18 JULY: In to do measurements. I saw 1 adult goshawk as walking to nest and heard 1 juvenile call/beg while I was at tree.

#### 1996

25 APR: In to do 1st nest check. Both nests unused, searched the #66 stand a little, but no sign of goshawk.

19 MAY: In to do silent search around #56. No sight or sound of goshawk. No new structures or signs seen in this drainage. Nest still in good shape. But I will concentrate on calling the other drainage of #66 when come back.

30 MAY: In to do stand search with the caller. Spent 1.75 hours calling 10 stations with in the PFA area of nests (450 ac) see map for this year. Mainly called the drainage with #66 in it, but called along road #645 also. No sight/sound of goshawk. Nests still unused, no hunting activity seen of goshawk, and have spent 3 hours total in area. I came in and searched with caller same time last year and found them, therefore, if they are nesting here this year it would not have been too early to get a response. I have gotten absolutely nothing this year, so will call it unoccupied.

#### 1997



23 APR: 1045 Both nest appear unused at this time. No sight/sound of goshawk. There was a call from the E of N56 but it could have been a PIWO (*Pileated Woodpecker*). Both nests in good condition.

11 MAY: 1400 In to do silent search of stand. Walked drainage but no sight/sound of goshawk. Did find old structure down drainage from N66 toward the highway. It is on the ridge to west with good old growth and a lot of ragged looking LAOC (*now #179*). I put flagging out and found OP up slope to look into structure if ever rebuilt.

*Did not get back to this territory again, but Ann Frost, USFS, found a new nest, late in season, that was used over by the #66 nest. I had missed it – see next year's notes.*

## 1998

2 MAY: In for initial check. All 3 nests unused, did find and mark last year's #97. Spent 1.5 hours searching drainage of #66 and #97 all the way down to the old structure. Walked back up and down road#645 by #56 but no sight/sound of goshawk. The road is mainly clear of snow this year. A large T-storm passed over us when first there (with Jade, German Shepherd dog and Ted Fremd).

6 MAY: While driving by this area on highway, saw a goshawk soaring over the meadow area there, so probably at least active.

2 JUNE: In for search using caller and GPS'd all nest trees. Started at top with road junctions of 645-646-647 at closure there. Walked and called all the stand areas around nests, but no sight/sound of goshawk. I called this active because seeing the goshawk at least using the area to hunt.

## 1999

4 MAY: In for initial check. Had to walk in a ways because of large snow drifts on road. All nest still up but all unused. It snowed heavily while I was walking this area.

10 JUNE: In for search with caller. Found new nest #135. While calling around #97 nest I got a response to the west that I thought may be a GRJA. This next drainage over looked good so called at top where heard call, and she responded again and I saw her fly off down drainage. Followed her and finally found new nest in an opening at the bottom of the draw, where it opens into a small meadow right along the road that comes up here. Marked a route and OP site. As I watched nest, saw at least one head top in nest, but these are very small yet and it is a deep nest. Female finally came back to nest and perched on rim. I marked the route to come in from the top road #645, but found better access from 2-track that comes in from the bottom.

6 JULY: In for nest check. 2 chicks in nest @ 30-32 days. Watched from the OP at first then walked into the tree area. While I was below nest marking it, female flew to the nest with prey and the chicks started to whistle. She then saw Jade (*German Shepherd dog*) walking out in the clearing and stooped and hit her in the back of head. She stooped again at Jade and this time saw me, then stooped at me. She finally perched and called at us and we left promptly. I had written directions coming in from the top but while at tree I saw that it would be better to approach from the road coming up from highway area. This is the way to come in future years.

## 2000

18 APR: In for initial check. Searched at all 4 nest sites, all still up and in good shape, but all unused. No sight/sound of goshawk here. But I saw a raptor flying to ESE of hwy (SE ¼ of Sec 22) that could have been a goshawk or Cooper's. I need to check these 2 small draws later in year.

11 JUNE: Left house early to get to stand before dawn. Read a report that there is a 100% detection rate of goshawk ½ hour before dawn to within 4 hours post sunrise. Started walking and calling stand at 0510. Searched all around the known nest sites. No sight/sound of goshawk. I took a hunch, and went across the highway to search the draws, see above note. I was right about seeing a raptor here, but it is a RTHA. As I called at the 2<sup>nd</sup> draw, a RTHA responded and called at me several times. There was also a male that came in and perched, called 1 time and flew away. It is interesting to note that the male RTHA voice is lower pitch than female and croaky like that of male goshawk. Did not see the nest, but sure it is up in this draw. So, I call Snowshoe unoccupied this year.

## 2001

12 MAY: In for initial check. Checked all nest sites, but all unused, and all still up. No sight/sound of goshawk as I was walking the area.

Late in JUNE: Grayal Farr, FS volunteer of Karen's (Haines), called this territory. He said he got a faint response from a call at the #66 nest. He said "from the N66, follow road#647 SE for about 300m then go north, distance unknown. Karen felt that this meant that goshawk was calling from south of road#645. Will have to check this out for next year and see if I can find a new structure. He did see a SHHA by nest #97.

*Did not revisit this territory again.*

## 2002

3 MAY: In for initial check. Nest #56 is gone now. Walked and searched the drainage around other nests, all unused. I walked the ridge that is SE of #66 where goshawk supposedly heard last year, but no sight/sound of goshawk nor any new structures. Will walk lower part of road#645 on way out. As I got to bottom of road, down opposite the new aspen enclosure along road, I flushed out a GRGR that perched and watched me, but I did not find any nest. As Ted (*Ted Fremd*) was waiting for me in car at this point (the cow camp), he thought he heard a KEK call, but also saw a GRJA so was not sure. I circled the area, that runs NNE from the cow camp to come back to later. NOTE. The goose box along the Snowshoe meadow here as drive in is being used by Canadian goose- in box incubating!

24 MAY: In to do another search in this lower area. Parked at the beginning of road#645 at cow camp, where Ted heard call and I saw GRGR. Will search the draws to the NE of here this time. Walked along the ridge that runs parallel to road and it is good habitat. I have the track marked as "Sno alt-02" These draws are about 300-600m as the crow flies from the other nest sites. It makes perfect sense to me that the volunteer last year picked the goshawk up from this area, but did not go far enough to search over here. I did not see any new structures, but will come back to call this area. I will bring back the camper to get the early AM and later PM search at Izee. At least try it, there are nice places to camp here.

11 JUNE: I am camping at cow camp at bottom of road #645. Will call around here today and move to Izee tomorrow. I walked and called the alternative site to NNE all the way over and up to the logging road that comes out at top of ridge, above #56. This track is "Sno 6-11-02". I came across two very vocal and protective ravens caring for their 2 young fledglings. Spent rest of afternoon and evening searching and calling the other sites. Called in the draw of the nests and extended it out to SSW. Many old logging tracks that are now game trails and good habitat here also. I marked a waypoint "rd 721" where I searched thinking I had heard a wail call come from here when I called to the east of here. Could be a possible stand, but the dogs, Jade and Curly, spooked up an elk calf and I needed to yell and contain them. So I left area without searching further. Sunrise is 0513 tomorrow and sunset is 2030.

12 JUNE: Started before sunrise and drove over to Flagtail road to walk into area by road 721 where I thought I heard the call yesterday. Did not see or hear anything. I had left the dogs in the truck this time. I stayed in area until 0530.

## 2003

13 May: In for initial check. Checked on the original nest site along road 645 and it is unused and in poor condition. Walked this draw and no sight/sound of goshawk. I searched the other nest areas and none of them used and they all are in partial condition. I walked over to Snowshoe Creek itself to view possible habitat, and the lower part of drainage is ok but at the top along the road it has been logged. No sight/sound of goshawk.

25 JUN; In for second called search. Territory is active and possibly a failure. This is a puzzle. I started calling at the Cow camp and on the 1<sup>st</sup> station I got a response from a female I think from the direction of the most used drainage, over the ridge from this (where N66 and 97 are). This is way down drainage from N66. She came calling and flew over me heading N? NE? into the habitat I first called last year. I also got a call from area around N58 but that turned out to be a GRJA mimic. I searched in the direction she had flown to first but saw no nests and did not see or hear her again. I worked my way over to the top of the drainage that has N66 and 97 and down this to where she first called. There is an old possibility of a nest structure I found down here years ago but it is in a LAOC with clumps and at the time I was not even sure if it was a nest. Well, it is used as a nest! "Sno X 03 poss" (*now #179*) is the mark. Nobody was there, but there was some whitewash on the ground and a few downy feathers, but they look brown more like a GHOW. So possibilities: This was a goshawk nest and it failed because of an owl. The fact that the female was still here and defensive adds support to this. I would think hormonally they are still in breeding mode even if nestlings are gone; i.e., at ESC she failed 2x and was still around defending for the summer. This could be just an Active territory and I just picked up a hunting adult. This was a GHOW nest that fledged but if so I doubt that a goshawk would be in this area showing defensive behavior. So all I can say is it was active yet I don't have sufficient information to say anymore. That will teach me to not re-check ALL areas that I think goshawk have ever used.

## 2004

30 APR: In for initial nest check. N135 is Occupied. Female incubating on nest with lots of down on nest and I saw her tail feathers. Took about 1 hr walking the stand checking all other nests prior to getting down into this draw. Spotted 4 horses with 1

colt down along the road leading up to N135. Very pretty dark brown Mom with rust colored colt. This is always a good start of year when IZ and SNO are both occupied.

16 JUN: In for nest check. Out with Chadski (*friend out for the day with me*). 3 maybe 4 chicks in nest all about 14-17d. No adults seen or heard and we stayed up on hillside awhile to watch nest. Very messy nest this year.

25 JUN: Final nest check. Successful with only 2 chicks @ 30-32d. Something happened to the littlest guy. All very peaceful sleeping in nest. Female was perched in nearby tree and I only saw here after I had walked down to nest tree on my way out. She came in and stooped 2X but not real hard. I found the lens cap to my scope on the road walking out, the one that Chad had lost on last trip in.

## 2005

4 MAY: In for first check. Drove up road 656 just at about level of the original nest tree #56 and could go no further- tree down in road. Walked in from here. Occupied in the old "X 03" nest ( now #179). Female incubating. I can now number this structure, I now have direct goshawk evidence. I'm pretty sure this one was the nest used where I called in a goshawk but only found owl feathers here late in season. I called the territory active in 2003. Checked other nests and only the one used last year is still up. I marked a better approach to nest labeled "Path 05". If you walk up the lower road from the road closure before the Y-junction. I have a green/black flag on edge of road. That marks a horse path that traverses up the hill- follow flags and at top I have marked a small fir where you can see nest well.

20 JUN: Nest check. Successful with 2 chicks- no adults seen or heard. These 2 are about 28-30 days with down still on head around eyes and cere. They are alert, preening and look healthy.

## 2006

10 MAY: In for first check. GRGR occupied in nest #135. Adult owl in nest incubating. No new structures seen no sight or sound of goshawk. There is a raucous raven nest up in area of #97- feeding time with loud baby ravens!!!

*Did not visit/check again this year.*

## 2007

14 MAY: In for first check. Great double occupancy- goshawk female incubating in # 135 and GRGR in #179, adult with 2 chicks in nest. The GRGR chicks were downy but with feathers showing. They must have just finished eating for the adult was calm sitting up and chicks moving about. Walked almost straight into the tree with goshawk, coming in from a different direction. Lots of down on nest rim and female staying tight on nest.

18 JUN: nest check. Successful with at least 2 chicks @ about 28 days. Female present and called but not aggressive.

## 2008

*Did not visit/check this year.*

## 2009

28 MAY: In for first check. Tried to walk in along #645 past road closure to check last year's sites, but T-storm came in and would not be able to do thorough search, so postponed.

1 JUN: Occupied in a new nest in a large PSME right below, down draw, from # 97 (*new nest now #223*). Lots of down on nest rim, but cannot see well into nest. Could be owl or goshawk at this point. Ravens were calling in area also. Lots of white wash on ground below nest.

*Did not visit/check again this year. So no final status known.*

## 2010

11 MAY: In for first check. Out with TJF (*Ted Fremd*). Unoccupied but USED. TJF checked on #135 which is unused and I walked stand to other sites. No sight or sound of goshawk while walking the stand. BUT calling it Active because on drive away out in the meadow toward highway, saw a goshawk hunting? in this meadow which then flew back into the stand. Goshawk sighted at 44°10'220 N and 119°13'745W. So a new/unknown nest site may be in stand that we didn't find- so if have time can call in here later this year to find them.

*Did not visit/check again this year.*

**2011**

10 May: Tried to get into #56 but road #645 blocked by snow drifts. Still tried to walk up road but it is a no go! So will have to come back to measure. This year is very different with such a cold wet prolonged Spring. It will be late getting out to check places thus may miss any incubating goshawk if any.

1 July: First measured #56 then drove to road block that leads to other side. All now measured and tagged and the GPS units look good in here. Unused- No sight or sound of goshawk. Ravens in here that came out to scope us out.

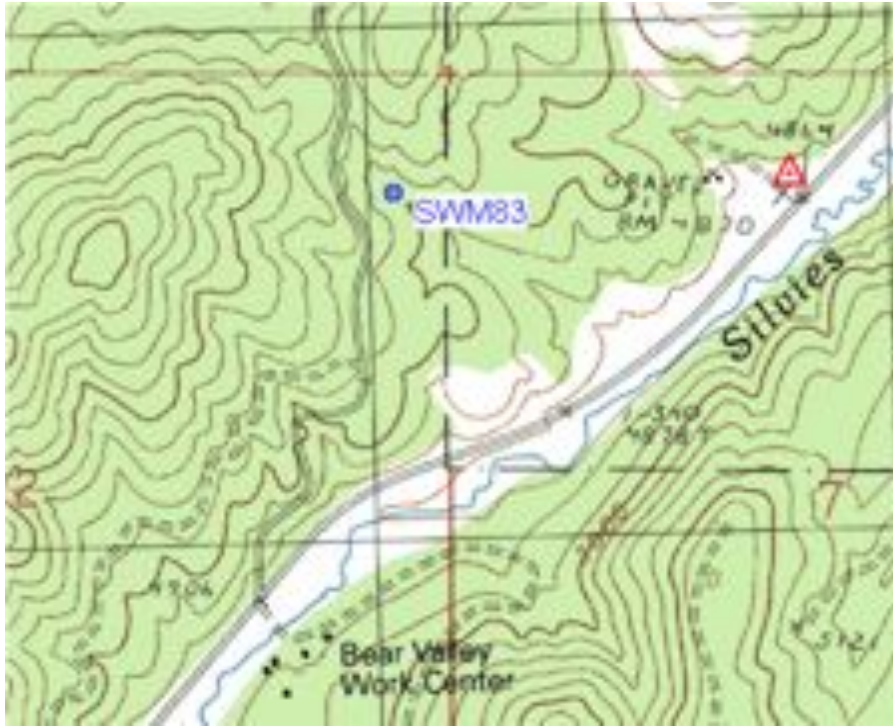
## SWAMP CREEK

SWM <sup>40</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	83			OCC		
1997	83	4/23/97		Usurped		GHOW
1998	83?	5/11/98		A		
1999	83	5/4/99		Usurped		RTHA
2000	83	?		Usurped		RTHA
2001		5/31/01		UNO		
2002		5/10/02		UNO		AREA BURNED
2003		5/13/03				CALLED SURROUNDING HABITAT
2004						AREA LOGGED
2005						NO FURTHER MONITORING OF THIS AREA OR THE SURROUNDING HABITAT TO THE NORTH OF ORIGINAL SITE
2006						
2007						
2008						
2009						
2010						

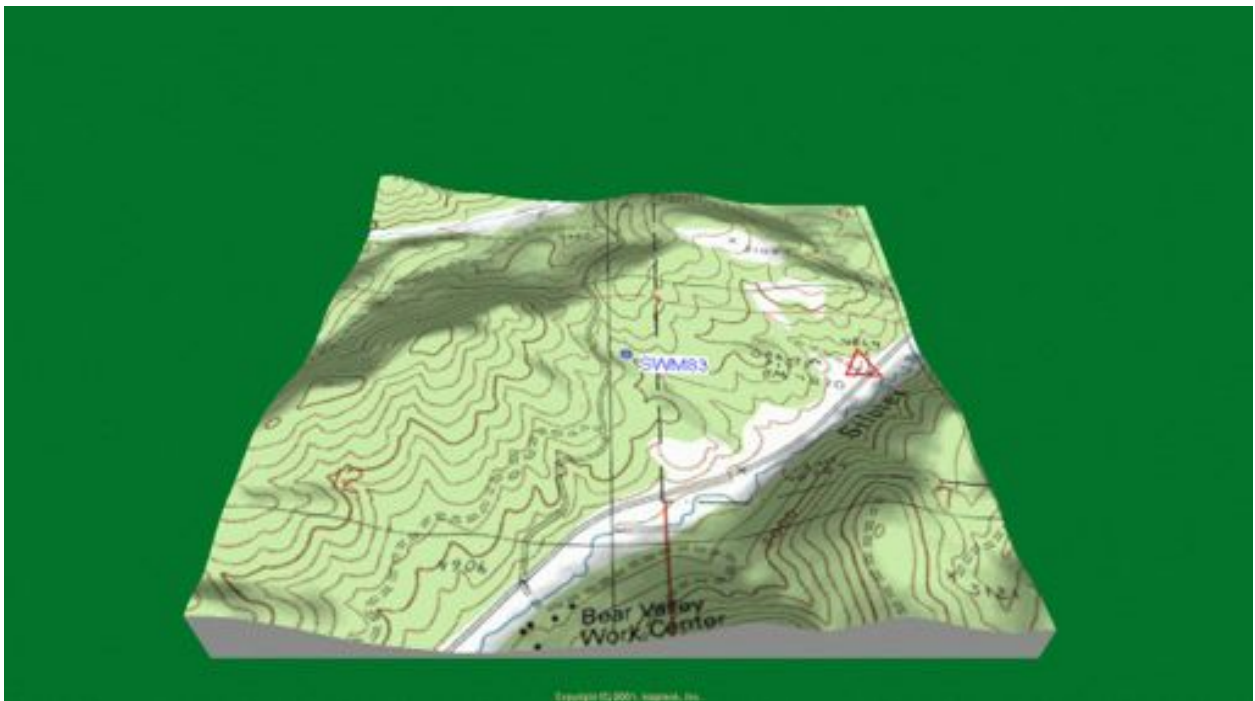
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

Swamp Creek was in a fairly steep draw directly off Highway 63 across from the now defunct Bear Valley Work Center. Only one nest site was found in this heavily forested draw before the area was badly burned in the Flagtail Fire late in 2002. The one nest site had greater use by owls and red-tailed hawks than by goshawks during the years of monitoring.

In 2003, an extensive called search was performed to the north of this burned stand. There is a large meadow surrounded by suitable habitat along the Swamp Creek drainage running roughly east-west. North up over the ridge on Rd. 2195, one descends down into an area with stands that have a more mature, complex structure. Unfortunately, no alternate nest sites were discovered and no goshawks seen or heard during this search. I have not entered this area since 2004 so do not know if there is still suitable habitat left. The Flagtail Fire complex was large and I presume that the fragmentation of the surrounding forest structure may have taken its toll on this area as well.



*North up*



SWAMP CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
SWAMP CREEK -83	GONE	5035	PIPO	36	S	60	NA	NA

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
83					A	U	A?	U	U	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
83	I	BURNED	LOGGED	DNC	DNC	DNC	DNC	DNC	DNC	tree gone

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)** = 423 acres established according to FS records. However, I doubt this is valid because of the 2002 Flagtail Fire.



## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### SWAMP CREEK

**1996-** Found by BVRD personnel late in season. Nest occupied but no other info gathered this year.

#### 1997

23 APR: 1730 This is new territory for me, found by BVRD in 96. This is just W of the BV Guard station. Nice drainage with 2 track that goes by nest. GHO is using nest which is very high up in PIPO. Have to go around tree up onto NE slope to see into nest at all. Saw the 2 ears sticking up and finally saw her face.

#### 1998

16JUN: Out with Dorman and Phyllis Gregory to check on the nests they had first visited. Some of the Murderers Ck route I had given him to do initial check- done in May sometime. Nest #83 was empty and no goshawk seen in the area, but when Dorman first checked the nest it had fresh green fir branches in it and looked rebuilt. They did not actually see any female on the nest however. While they were there on first visit, they did get called at by a goshawk. So we GPS'd the tree, walked the stand but neither found or heard anything else. Called this territory Active this year (possibly could be a failure) but not enough accurate info to tell more.

#### 1999

4 MAY: In for initial check. RTH is incubating on the nest #83. She stayed on nest a long time watching me, but when I started walking closer to tree she flushed, flew a short way and started calling.

#### 2000

Was checked by Dorman sometime in May, I think. He reported that a RTH was again using the nest. I did not go to this territory myself this year to verify.

#### 2001

31MAY: In to check on nest. Nest in good shape, but unused. Walked the stand searching, no goshawk. Drove up the road, over ridge down into the meadow area of Swamp Creek. There is good suitable habitat (marked as "HABT") that could be an alternate. Didn't spend a lot of time here though, but is good site to search in future.

#### 2002

10 MAY: Dorman and Phyllis checked nest. Nest still in good shape, but unused. They said they would do a second check later in season, but I did not hear that they did.

14 JUL: Major fire started- Flagtail complex. This territory was burned badly I think and territory lost. Some buildings at the BV ranger station were burned also.

#### 2003

13 MAY: In for initial check. Completely nuked at the nest stand. I drove over ridge top down into Hay Ck meadow area and there is a mosaic here in the other good bit of habitat along the meadow edges. But it still looks passable as a place that goshawk might have moved to. I will come in and call this year.

6 JUN: In for second called search. Out with Lia (*Vella-volunteer*) in calling fire areas. I dropped her off at the top of the ridge so she could call down the road and along the south side of the meadow. I started on the far side and called the areas north of her and back around to meadow. Lia got stooped by a pileated woodpecker and she said she might have heard a mimic, don't know. But no sight/sound of goshawk. There is some good habitat along the track I took particularly at the end of the track before I came back down to the main road. I had a small accipiter come check me out. It flew over until it saw me in the trees then circled back over the ridge to the meadow area. It did not call but was brought in by the caller I suspect. No sight/sound of goshawk. I

saved all of her and my track logs but there are a lot of lines- did not remember to clear track from the previous days, but the essential routes are there.

**2004**

Logged this year with Flagtail fire, nothing to call or search. Did not have time or access to the meadow area that Lia and I called last year. Will look at next year.

**2005-2010**

*Did not visit/check these years.*

**2011**

*Did not re-visit this area-nothing here now.*

## **Murderer's Creek Route**

**Alkali Creek (ALK)**  
**Beaver Creek (BEA)**  
**Buck Creek (BUC)**  
**Corral Creek (CC)**  
**Dewey Creek (DEW)**  
**Lemon Creek (LEM)**  
**Luce Creek (LUC)**  
**Oregon Mine (OM)**  
**Stewart Cabin (STW)**  
**White Creek (WHT)**

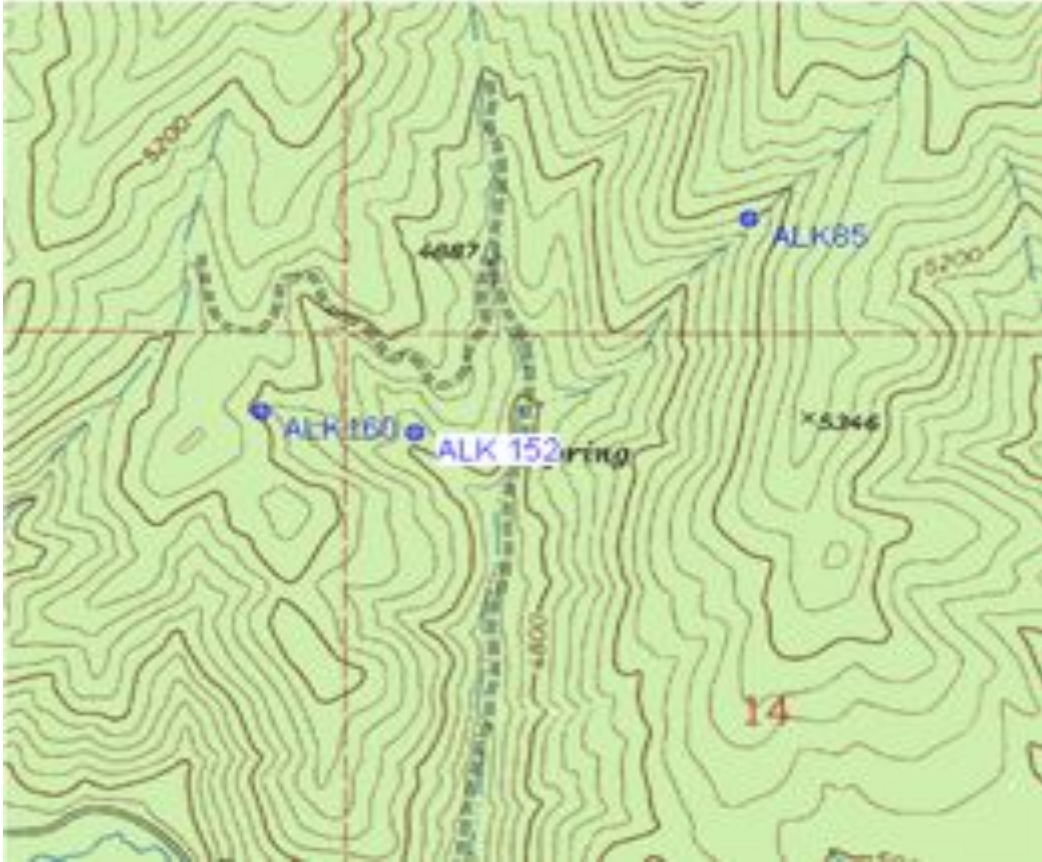
## ALKALI CREEK

ALK <sup>42</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	85			OCC		First found by FS personnel
1997		5/4/97		A		
1998				UNO		Volunteers in charge of monitoring from 1998-2001 See field notes
1999				UNO		
2000				UNO		
2001				UNO		
2002	152	6/21/02	N	S	2	
2003	160	6/17/03	N	S	2	
2004		4/29/04		UNO		
2005	160	5/17/05	Y	S/F		
2006				DNC		
2007		5/16/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		

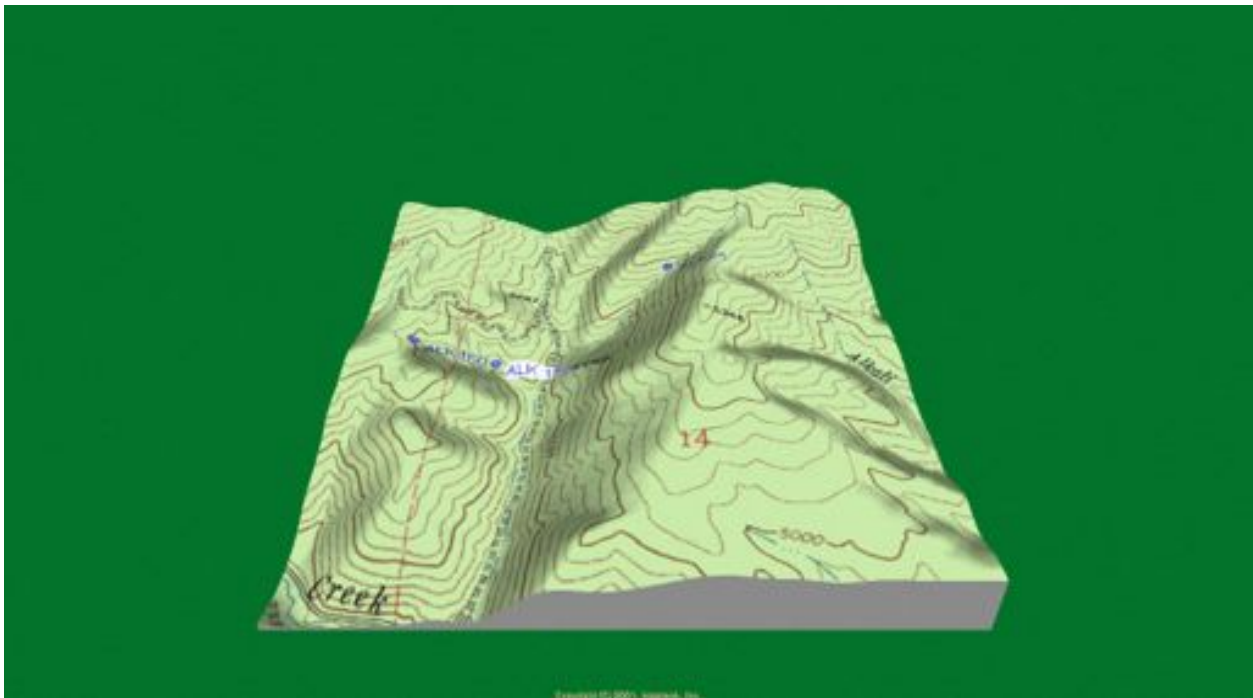
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

The initial nest site #85 is not located in the most suitable habitat in this nest cluster. The location of nest sites #152 and #160 contains the better, more mature forest structure of the area. This suggests that the first nest site found (#85) represented an alternate site; so the actual usage of this territory is very likely under-reported as a result of search efforts during the first few years focused on #85 rather than on the more suitable habitat.

*Forest service personnel found this territory late in 1996 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a few volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years.*



North up



ALKALI CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
ALKALI CREEK -85	NO TAG *	5178	DD PSME	21	S	45	nd	nd
ALKALI CREEK -152	TAG	4838	LAOC	33	SW	60	140	22 to W
ALKALI CREEK -160	TAG	5008	PIPO	24	140	80	300	18 to NE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
85					A	X				
152										
160										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
85					DNC	X	DNC	DNC	DNC	
152	A	I	X			X				X
160		A	I	A		I				I

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\***No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 454 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### ALKALI CREEK

**1996**

Found by BVRD seasonals while planning the Murderer's Ck watershed this year. No protocol survey done here, they just entered the most likely drainages to call.

**1997**

4 MAY: 1100 Walked up drainage to find nest. The one found by BVRD last year. Walked past nest at first, but saw flagging on way back down. Nest is gone, must have blown down, it was in a 3-dead PSME clumped together in middle of drainage. Was in area for about 3 hrs. but no sight/sound of goshawk. This drainage is not what you would call typical goshawk habitat. It is logged and grazed out at bottom, and only when you get up toward top does it have any habitat. But this is ratty PSME and not many large trees here.

*Did not go back to this area again this season.*

**1998**

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

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**2000**

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

25 JUN: I went to check on a possible new site – or an alternative for Alkali – up Sugar Creek. This is just north over the ridge from the Alkali nest. A goshawk was reported to be at the road junction of 128 (see map) and green/black flagging had been set out. I found a half built nest in an old snag. I marked it in GPS as SUR 00 for now. I have to ask Karen (*Haines*) who found this and what time of year they were here. It is possible that they disturbed the cycle of the nest building. I walked the drainage and did 4-5 calls but got no response. Nice drainage in places, lots to explore if this is the alternate to Alkali. I met Jim and Pat Hammett and Pattie Moss (*friends from the NPS*) on horseback coming out of the roadless area that day.

**2001**

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

**2002**

8 MAY: Sarah Herve took over monitoring some of the Murderer's Creek route territories, such as this one. Went out with her this day to orient her to places/nests. Drove up road#216 to show her where the starting point to go to #85 was. I gave her Ann Frost's (*FS seasonal*) original instructions that she marked and will come back to search later in season.

21 JUN: Volunteer, Grayal Farr?, called this territory and had a good response from a goshawk, but he could not find any new nest.

5 JUL: I went out to try to find new nest by following the directions that Karen Haines gave me of where Grayal had the greatest response. I found the new nest easily, # 152. Two chicks in nest @ 36-38 days. Nest is in a LAOC not more than 50 ft from



where the volunteer had flagging, where he saw the adult. This shows that those without experience are not the most reliable to see goshawk in the field. He missed the new nest at Fisk last year also. This nest could be easily mistaken for a mistletoe clump, but there was a lot of wh/wa on the ground and down on the rim. I marked a OP to see into the nest on hill opposite tree, got the scope and could see well into nest. Both chicks walked out onto branches at times while I watched. The female had flown out to me and called once while I was walking down drainage before I got to the nest tree. After that, she was silent and not seen. This is possibly the old nest that we have missed thru the years. This stand is across the road and ridge from the initial nest found in 1996. It is a much better stand and habitat, and the initial nest found most likely was the alternative. I do not think that Dorman and Phyllis (*Gregory*) really searched or called over here.

7 JUL: Sarah Herve has in her notes that she visited this area, at #85 nest. She called territory and got one response, then silence. She scared up a flock of blue grouse though. I see now that this was the day after I had found the nest, and she was across the way calling away from the original stand so she got the female to call but was not near enough to have the goshawk come out to her.

### 2003

8 MAY: In for initial check. Checked N152 in the new found stands and it is unused. I walked this drainage a little and found an old deteriorated structure up draw from 152, but nothing else at this time. It started to rain lightly, so I did not spend too much time here.

17 JUN: In for second called search. Out with Lia Vella to search some territories. Found a new nest with female on nest incubating. I dropped Lia at the bottom of the draw to start calling from here and work up to the top along the road. I drove up and parked at the top and started searching the draw that comes down into the area of N152. Good hunch as I walked down from top, for the new nest was right where I half expected by the feel of the habitat. I thought it was just an old nest unused at first, but as I got to the base of tree I saw all the whitewash and she then came at me stooping close and calling. Hard to see into this nest. I think there is 1 maybe 2 chicks but younger than others @ 14-17 days – a late nester. I finally found and marked a good OP on the hillside above nest, sitting down scoping the nest. Lia came up and we watched it for awhile, but still not sure of how many chicks in nest.

1 JUL: Final check. 2 chicks in nest still @ 26-28 days. Their heads and necks were visible now but both are still very downy yet. These guys are way behind other goshawk in being really late to fledge. Female flew and stooped at first but calmed down as I sat with scope for awhile.

### 2004

29 APR: In for initial nest check. N160 seems occupied. White fluffs of down on nest rim. Did not see anybody on the nest, or hear anything, but this is a high nest and hard to see into. I did not go around to OP site because of time of year. I did not want to flush her if she was there. Will re-check in late May.

14 JUN: In for nest check. I was wrong – Nothing in or on the nest. The down that I see must be from last year, for there are no chick or adults here now. Unoccupied this year. It is not on the cyclic list to call this year either.

NOTE: I had the most unusual encounter with a wild horse here this time. A small stallion was across the road at the closure where I park. He did not scare off. When I was walking back to car he was on the road by my car and gave a big snort-prance to alert me. I walked up slowly and he did not run off but stayed about 30 ft distance. He started to graze. He gave me such a strait head on stare for a long time. He is still standing just a short way off, grazing, while I sit writing my notes in the car. He is not shy and running off like all the other wild horses I have seen.

### 2005

17 MAY: In for first check. Occupied with female on nest #160 incubating. I stumbled around a while looking for flag for the OP on this nest and the nest looked unused. I went in closer to look at nest then and saw the top of her head and eyeball! She was low in the nest the whole time, and it looks not too messy yet. She may be a later nester this year.

*Did not visit/check again this year. So no productivity counts for this year.*

### 2006

*Did not visit/check this year.*

### 2007

16 MAY: In for first check. Unused no sight or sound of goshawk. Took measurements for FS- 2 nests gone, only one left.

*Did not visit/check again this year.*

**2008, 2009, and 2010**

*Did not visit/check these years.*

**2011**

25 AUG: Unused- in to measure and tag trees. Measured the 2 in the good part of habitat, but did not bother to check on the old dead PSME (the original nest #85 that has been long gone) for I think the trees are gone now even.

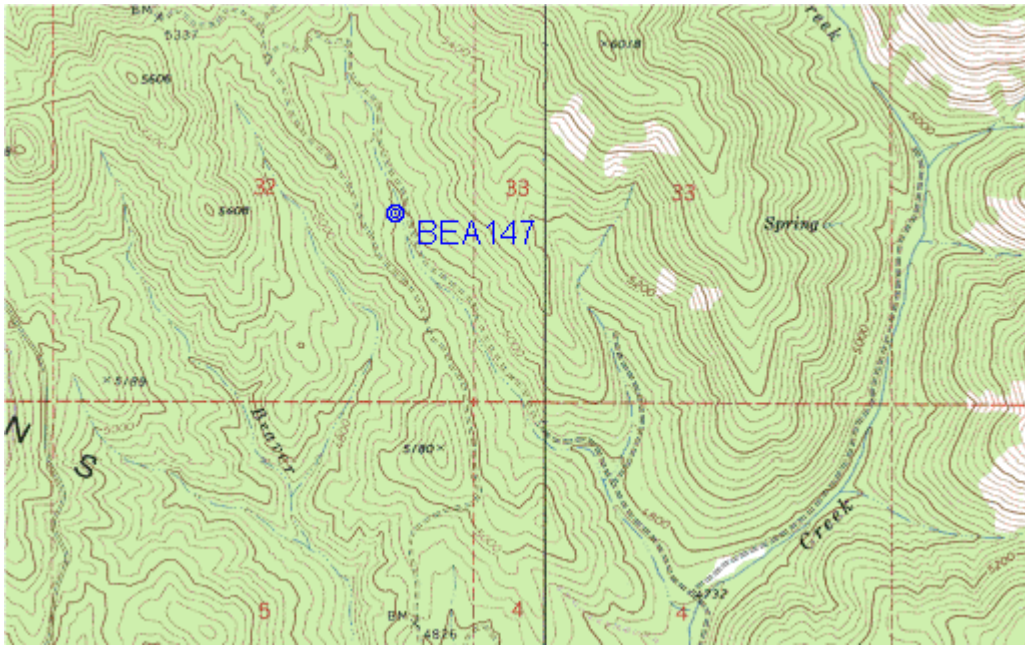
## BEAVER CREEK

BEA <sup>53</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000	147	?		OCC		Found by FS personnel-reported as successful
2001		6/6/01		UNO		
2002		5/8/02		UNO		
2003		6/18/03		UNO		
2004		4/29/04		UNO		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

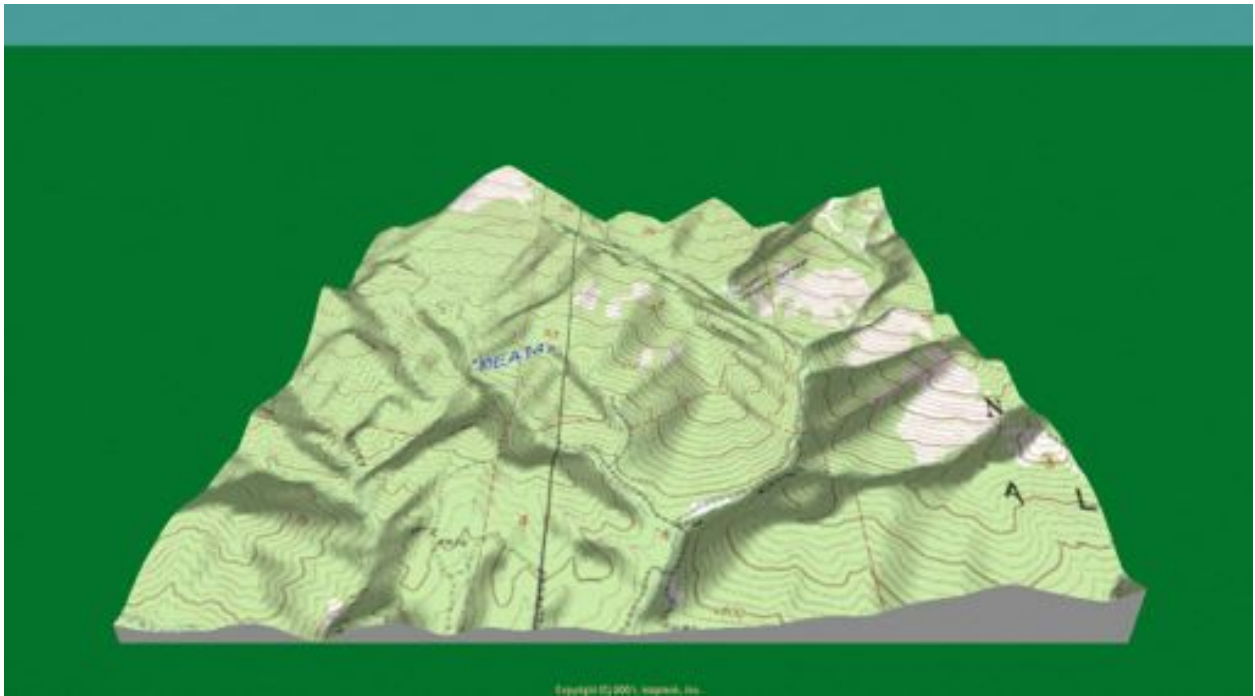
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

In 2000, the nest was reported as occupied with aggressive adults present. It was apparently successful, but no verification of fledgling number was accomplished, to my knowledge. In the few years that I personally monitored this area, this nest was never re-occupied. However, this is a region where I did encounter active goshawk. Calls performed along Rd 102 where it joins with Rd 132 and especially up Tex Creek to Miners Creek draw received goshawk responses several times. I searched for but never found a new or alternate nest structure in the 4 years that I surveyed this area. I did scare up 2 juvenile goshawks up Miner Creek in 2000, but this was considerably past fledgling time and I could not find any nest in the draw nor were there any adults present. I surmise that Miner Creek drainage also contains suitable habitat for goshawk and should be considered as a possible extension of this nest cluster.

*Forest service personnel found this territory late in 2000 while doing wildlife surveys required for planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a volunteer to help me with monitoring of nests in 2002.*



*North up*



BEAVER CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BEAVER CREEK- 147	TAG	4978	DD LAOC	14	240	35	flat	flat

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
147									A	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
147	I	I	I							X

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)=** As of the time of this writing, there is no designated PFA for this territory according to the FS records accessible to me.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BEAVER

#### 2000

Site found late in season by BVRD personnel. Was a successful nest apparently.

#### 2001

6JUN: Checking this site for the first time. In the Miner's Creek area where I have yet to find the goshawk I know frequent this area. I am off road#2160 to road#102 that runs down toward new nest site. Good drainage that is to the south of Miner's Ck. Walked down road#102 to the PSME marked (GPS'd) this as marker. When I walked over to the west side of drainage it is more open for access for the goshawk. I saw an old nest in a small LAOC in the bottom of this drainage that had a sign on it. The directions to this nest said that the tree was a PIPO, but they didn't know their tree species. I called up the drainage and searched down from this nest but no sight/sound of goshawk.

#### 2002

8 MAY: Sara Herve took over monitoring some of the Murderer Creek route territories, such as this one. We searched the stand where nest #147 is, walked a ways up the road. Nest is unused but still up but not in good shape.

21 MAY: *Sarah's notes* – Says she searched but no sight/sound of goshawk

20 JUN: *Sarah's notes*- Says that no calls were heard, meaning that she called the area. A pileated woodpecker was spotted in the area.

#### 2003

18 JUN: In for initial check. This is the only search that will be here this year. Sarah could not make this so I am doing search late in season. Nest is up but unused. I called the stand on my way back down road after having searched on way up. No sight/sound of goshawk. I did pick up a Cooper toward the top of the draw off to the NE of this draw. I could not call the habitat down drainage like I wanted, because people were camping at the good spot.

#### 2004

29 APR: In for initial nest check. Nest up but unused. Just drove up the road to look at nest, did not walk or search any of the stand really

*Did not get back to this territory again this year. Not on rotation list to call this year.*

#### 2005-2010

*Did not visit/check these years.*

#### 2011

25 AUG: Last territory to check this last time! Measured tree, which is a dead LAOC now. The original brown sign is still on this tree. I thought I heard a beg call while in this stand, but it was only one time and short duration, so not sure. Still think that the Miners and Tex creek draws are the more used habitat. Also, the Sugar creek area heading up into Riley CK are possible.

## BUCK CREEK

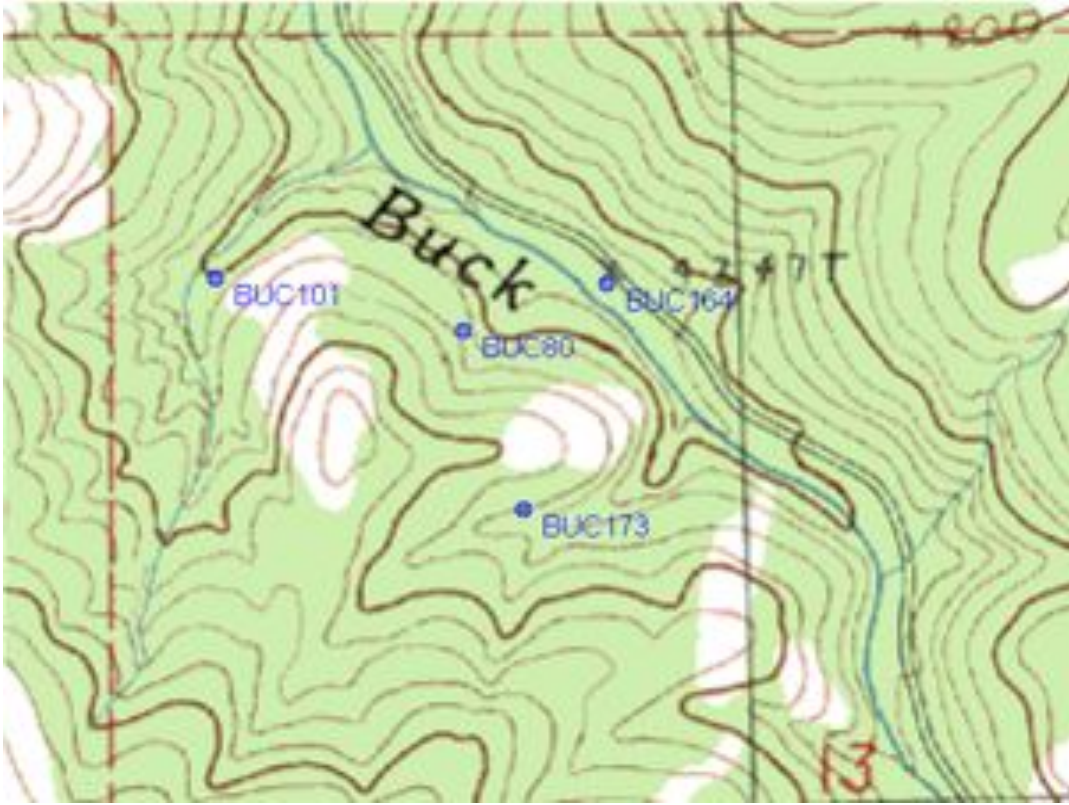
BUC <sup>38</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	80	?		S		Found by FS personnel
1997	101	5/4/97	Y	S	2	
1998		6/16/98		A		
1999	80	7/1/99	N	S	1	
2000		6/27/00		UNO		
2001		?		UNO		
2002	80	5/8/02		S	2	
2003		6/18/03		UNO		
2004	164	5/7/04	Y	S	1	2 nestlings
2005	173	6/10/05	Y	S/F		
2006				DNC		
2007		5/8/07		UNO		
2008		6/4/08		UNO		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This area is in the more arid open western side of the Malheur and the territories are constrained by the steeper draws midst the basalt flows where large PIPO grow. All the nests in this cluster were placed at or near the bottom of the slopes with rocky outcrops dominating the tops of the ridges. There has been no management activity around this territory since its discovery, but there has been some increase in dead-fall in the smaller sized stands interspersed within this draw.

*Forest service personnel found this territory late in 1996 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a few volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years.*





*North up*



BUCK CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
BUCK CREEK - 80	TAG	4425	PIPO	30	186	50	334	20 to NE
BUCK CREEK -101	TAG	4401	PIPO	43	SE	60	214	10 to NW
BUCK CREEK -164	TAG	4339	PIPO	32	172	80	296	30 to N
BUCK CREEK -173	TAG	4497	PIPO	43	140	50	260	34 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
80					A	I	I	A	I	I
101						A	I	I	X	
164										
173										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
80	A	X			DNC	X		DNC	DNC	X
101						X				X
164			A	I		I				I
173				A		I				P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 468 acres established according to FS records.

*Note: The accuracy of the markers is less at this site than others. It is a steeply sided area in here and access to satellites was a constant problem with the GPS unit I had at the time. So, the UTM's reported will have a lesser level of confidence, greater than or equal to 100 ft of the tree. The marked point is definitely within the immediate stand of the nest tree, however.*

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are “as is”, transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### BUCK CREEK

#### 1996

Territory found by BVRD seasonals while planning the watershed. A random protocol calling was used here in just checking suitable habitats.

#### 1997

4 MAY: 1700 New site found by BVRD last year, but could not find the original nest by the directions. But as searching stand, heard a beg call in adjacent draw. Female in new nest incubating at end of draw in medium size PIPO. Have marked road with cairn on top of black stump. Follow game trail into draw around rocky knoll - flagged. When get to where it narrows, past large PIPO in middle of draw, start uphill to the SSE side of draw. Flagged along game trail, contouring high to open area with PIPO flagged. Look back down into draw into nest.

4 JULY: Successful with 2 chicks @ 32-34 days. Marked tree with sign

#### 1998

*Dorman and Phyllis Gregory had taken over this route to do the initial checking on territories. I went out with them to do the first nestling check this year.*

16 JUN: I could not find the nest used last year, but searched the drainage it was in. It all looks different again, probably blew down. Dorman had found some flagging in here when they first searched and did hear a goshawk call. There was a ACST that called at us and flew over us while there, so it is possible that they thought this was the goshawk call (if not familiar with accipiters one could make this mistake). However, we did find the original nest from 1996 – the one I couldn't find 2 years ago. I re-flagged and GPS'd the tree to find later, but poor satellite coverage here. Called the territory Active anyway. Possibly we may find them later in season. (Don't think much effort was done later though).

#### 1999

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*

1 JULY: 1 fledgling found late in season. I think they had searched this territory earlier, and found the fledgling on a second search. The original nest #80 was used.

#### 2000

27 JUN: Went to recheck the area and used the caller between the two nest areas. N80 is still good and N101 is gone – re-GPS'd both nests. Called about 25 stations in the area – no sight/sound of goshawk.

#### 2001

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*

No goshawk were found – unoccupied; however, I don't know how much an effort was made here.

#### 2002

8 MAY: Sarah Herve took over monitoring some of the Murderer's Creek route territories, such as this one. Took her out to orient her to areas and nest sites. Nest #80 is occupied. Female was standing on nest watching us as we were coming into view from the slope above. She finally flushed off nest, but we could not see any heads or bodies, so they must have just hatched or she was incubating eggs still. We had walked into the #101 drainage to see if that nest was rebuilt, and as we walked up to the end where tree is we saw an adult goshawk, male, fly off around us back down drainage- no vocalizations. Good sign! We than

walked over the top of ridge to #80 and found them. Sarah marked a good OP and route back to the nest. Have asked her to do 1<sup>st</sup> nest check in early June to get nestling count.

24 JUN: *Sarah's notes:* Male and female present. No chicks spotted in nest and very little down on nest rim.

6 JUL: *Sarah's notes:* Two chicks in the nest @ 19-22 days old. Still very downy but with some dark feathers. No male present, but the female stooped the entire time.

### 2003

18 JUN: In for initial check. Sarah said she looked for N80 and it is gone. It is gone and so is N101. I walked the stand between these 2 sites calling stations. No sight/sound of goshawk. I then walked the road up stream direction further and found an old nest "BUC X" (*no number for this one*). The mark was taken from the road because I could not get satellites right at the nest tree. It is just across the stream on the steep part of bank- a large PIPO live. You can see the nest high in the tree from the road.

### 2004

7 MAY: In for initial nest check. Left TJF (*Ted Fremd*) at Piper's (*a friend with house up Vester Creek*) to check her solar panels and spent about 45 minutes searching an area along Vester CK that J Hammett (*friend*) said he heard goshawk call. Marked "VS hab" where I walked and it is good habitat, but need to spend more time here is possible. Drove up road to the old X nest I had found last year right along the road just to look, but unused. Drove back down to park where level of N80 is to start my walk. N80 is gone now, continued over ridge to check N101 also gone. As walking back along the creek to car I heard an alarm call. I saw a goshawk fly away, followed her, and found the new nest (#164) just uphill from the old X nest that I had first looked at. This is well screened from view of the road, but I can see it from an OP I marked just the other side of road. I searched here to finally find the nest and female was on nest and stooped close as I finally came into view of her. I was actually close to nest because it is a steep hill here and I was on eye level with them. The male came in and was stooping and calling also. Marked tree very hastily and left. So occupied and it pays to revisit the old sites!

14 JUN: In for nest check. Parked along road by OP. 2 possibly 3 in nest but youngest so far @ 14-17d. She came out to call at me while across the road at OP.

24 JUN: Final nest check. Bummer only see 1 chick in nest now @ 28-30d. I watched a long time and searched the branches, but did not see any other chick. Both adults were there and aggressive as I walked up hill to search from beneath the tree. Did not see any bodies or branchers, so, either something happened to them or one already fledged, don't know. I did get hit this year from behind by the female, slight glance took my hat off, while I was at the base of the tree. Exciting.

### 2005

10 JUN: In for first check. Weather- warm 50-60 deg, slight wind and maybe T-storms in PM not real bad yet. Occupied in new nest! (*now #173*). Up the draw to south of last year's nest (#164). Both male and female there and calling, flying around me. I did 2 call stations along the road and got a brief response when right below #80 nest area. I walked up this draw but no new or rebuilt nest seen. Some ravens were calling overhead and I briefly saw a goshawk fly over right to SW. I was going to check the other draw of #101, but thought I had better check to SW first. As I topped the ridge between these areas, she came out calling at me. Big female with fluffy coverts. As I searched draw for nest the male came in and also called and mild stooping. A turkey vulture was circling over head as well- lots of activity so I needed to find nest quickly. It is a small nest high up in a bifurcated PIPO rooted in bottom of draw close to the game trail. I walked up ridge to get a view into nest, but no good. They must be very small yet, not much down or white wash yet. I probably will not make it back here this summer, so productivity will be not known this year. The adults are both healthy and active so I will think and wish the best for them all.

*Did not visit/check again this year.*

### 2006

*Did not visit/check this year.*

### 2007

8 MAY: In for first check. Hot and clear weather, out with TJF (*Ted Fremd*) to transfer cars at TCPC (*Thomas Condon Paleontology Center- NPS*) and then up South fork road. Unoccupied – checked all known nest areas and no sight or sound of goshawk. Took measurements for FS this time.

*Did not visit/check again this year.*

## **2008**

4 JUN: NOTE: Saw a goshawk flying along Rd #49 right at the Fall Mtn Look out road over by original Geary nest site. This was one of only 3 goshawk seen this year. Checked nest here, but nothing.

## **2009 and 2010**

*Did not visit/check these years.*

## **2011**

24 AUG: Staying by Oregon Mine CG in Bambi (*Airstream*) for 2 days to finish up Murderer's Ck route. Hard walking in here and got all measured, but again the GPS had problems of getting satellites. TJF (*Ted Fremd*) newer gps unit was way off of mine for some reason. I had the memory of where the nest trees were, so could find them OK. My points are OK, but will have to put in note of steepness in here, poor satellite reception-so in future, the markers will be not as accurate (to within 100 ft or more of tree!) Territory unused.

## CORRAL CREEK

CC <sup>46</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	94	?		S		Found by FS personnel
1997		5/6/97		UNO		
1998		?		UNO		
1999	94	5/1/99	Y	S	2	
2000		6/27/00		UNO		
2001		?		DNC		
2002		5/8/02		UNO		
2003		6/18/03		UNO		
2004		5/7/04		UNO		
2005		6/10/05		A		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

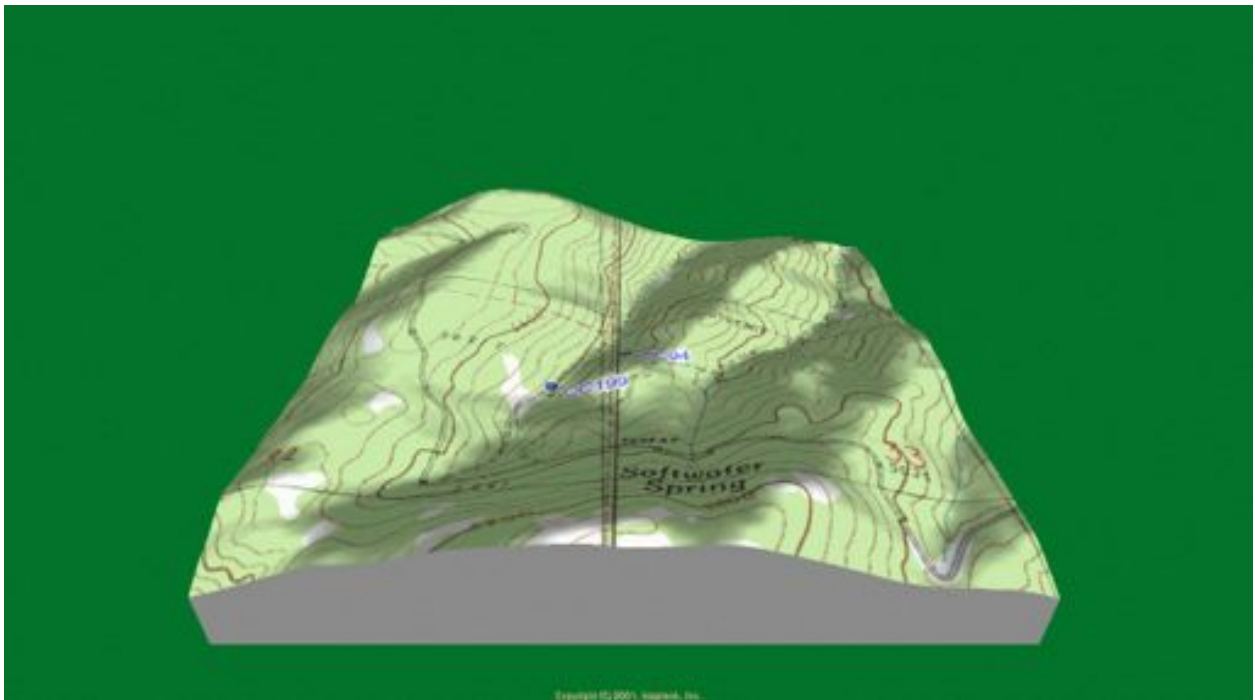
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This area that runs along Corral Creek up Road 450 has several patches of complex forest structure that would provide suitable habitat for goshawk. It is notable that goshawk activity was observed frequently in this or closely adjacent areas; however, an intensive search has not been done, to my knowledge, to locate any alternative sites other than those 2 nests first found. The usage of this area is definitely under reported for it received the barest of attention during the breeding season.

*Forest service personnel found this territory late in 1996 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a few volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years.*



North up



CORRAL CREEK



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
CORRAL CREEK -94	NO TAG *	5431	PIPO	36	165	38	260	25 to N
CORRAL CREEK -199	TAG	5400	DD PIPO	32	120	60	360	8 to E

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
94					A	I	I	A	I	I
199						I			I	

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
94	I	I	I	I	DNC	DNC	DNC	DNC	DNC	X
199	I	I	I	I						P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 499 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### CORRAL CREEK

#### 1996

Found by BVRD seasonals while planning the Murderer's Ck watershed this year. No protocol survey done here, just entered the most likely drainages to call.

#### 1997

6 MAY: 1400 Found nest, still up but unused. Walked around a little but no sight/sound of goshawk. On way driving out, spotted a double-decker nest tree, large PIPO, up drainage right along the road. Stopped and searched this area, but only found raven nest in area.

*It appears that I did not get back to this area this year.*

#### 1998

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

#### 1999

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was Successful, but I did not visit this site at all.

#### 2000

27 JUN: Gregorys did first check and found no birds. I went back to call along the road a bit. I checked and marked the PIPO right along the road, no sight/sound of goshawk. I did not look at the other N94 at this time.

#### 2001

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.  
It may be that this territory did not get checked at all this year. I have it in the database as Unknown (?).

#### 2002

8 MAY: Sarah Herve took over monitoring some of the Murderer's Creek route territories, such as this one. Took her out to orient her to areas and nest sites. Nest #94 is still up and in decent shape. Had to re-GPS the tree for better accuracy. It is unused and no new structures seen in the immediate area. Walked to nest X along the road and it also is still up, but unused. The Ravens are still nesting in this stand as we heard them calling while there. Did not take too much time searching here, but advised Sarah to come back to call along road here and further down at the end of drainage where you first drive in, good habitat there.

*Sarah did not have time to get back to this territory again this season.*

#### 2003

18 JUN: In for initial check and only one this year. I checked the nest and X along road- both unused.  
Walked a little in here, but am very tired and did not stay here too long. No sight/sound of goshawk.

#### 2004

7 MAY: In for initial nest check. Unused both N94 and old X nest. Walked briefly searching between these 2 nest sites, but no sight/sound of goshawk.

*Did not return this year- it was not on the cyclic rotation of search schedule for this year.*

**2005**

10 JUN: In for first check. Active but no new nest found but goshawk heard. I called 4-5 stations up the road 450 along the nest stand and near the top, past double-decker nest (now #199) I got a male goshawk call from up on ridge to west-where it has been logged in past. Definitely a male call but did not come in closer- hunting I guess. I thought I heard calls from far in stand itself in the direction of nest 94, but it did not repeat and it felt like a mimic. I am trusting that with this caller when close to a nest I would have gotten a bigger response at this time in season. I didn't hear much at all after the males 2-3 calls. So they are using the area, but not this stand.

*Did not visit/check again this year.*

**2006-2010**

*Did not visit/check again these years.*

**2011**

14 AUG: In for final measurement. Nest #94 could not be exactly pinpointed, satellite coverage spotty. So marker is for the stand of tree "no tag". Nest #199 is almost gone and the tree itself is dead, it will be on the ground within a very few years. This nest was always in good condition, but it never was observed in use!

## DEWEY CREEK

DEW <sup>39</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	82			OCC		
1997	82	5/6/97	N	A		
1998	121	6/30/98	N	S	1	
1999		?		UNO		
2000	121	5/13/00	Y	S/F		
2001		?		UNO		
2002		5/8/02		UNO		
2003		6/18/03		UNO		
2004		6/14/04		UNO		
2005	174	6/10/05	Y	S/F		2 (3?) chicks in nest @ 14-20 days old?
2006				DNC		
2007	190	5/8/07	Y	S/F		
2008				DNC		
2009				DNC		
2010				DNC		
2011	174	8/24/11	N	OCC/S?		Nest used with goshawk feathers on ground

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory is similar to that of Buck Creek in existing on the more arid western side of the Malheur, and also because it is within draws constrained by basalt ridges. Some of the Dewey nest sites appear to be placed higher up toward the *top* of draws than in other places, as most other nests are located toward the *bottom* of the V-shaped slopes that bound their specific draws. A lot of the tree cover in this territory is small diameter PSME clumps and very few large PIPO in the nest stands. This is surprising habitat to find successfully nesting goshawk. During the time of monitoring, there has been an increasing decay and die-off in the forest structure in these clumps resulting in greater downed, woody material on the ground.

*Forest service personnel found this territory late in 1996 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a few volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years.*



Both photos of Nest tree #174.

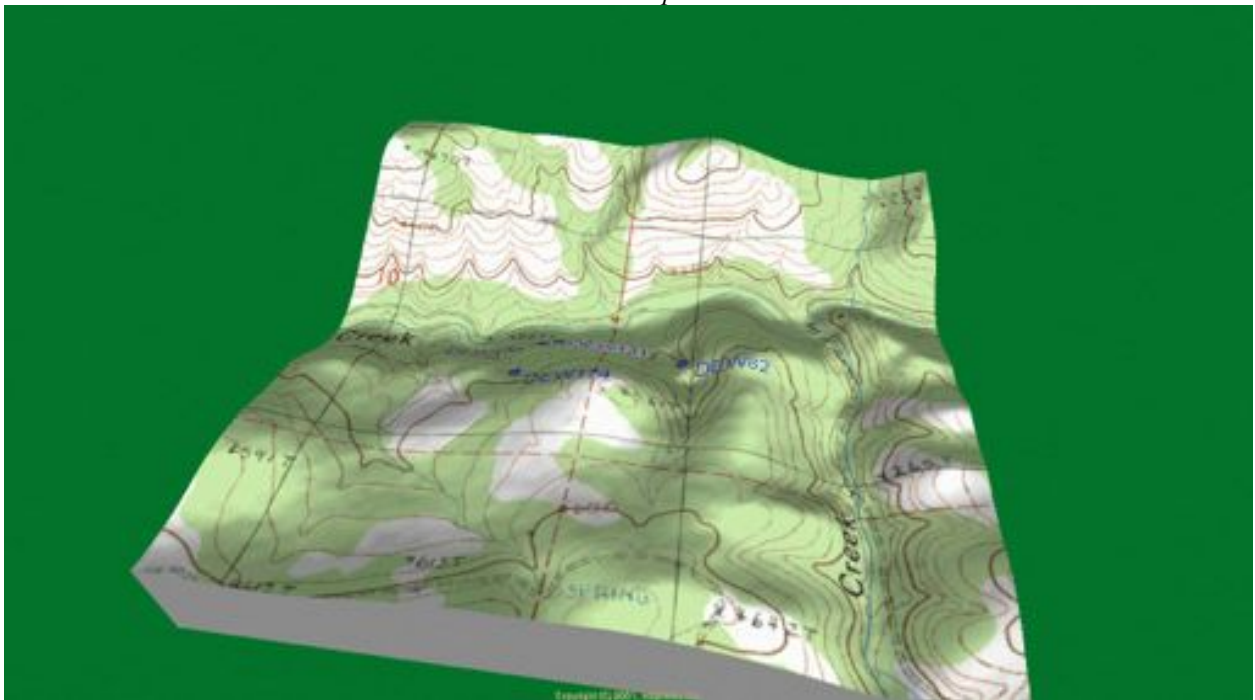
Close-up of nest and nest stand.  
This is representative of the  
type and condition of the forest  
around this nest cluster.







*North up*



DEWEY CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
DEWEY CREEK -82	TAG	4280	PSME	28	95	35	280	26 to N
DEWEY CREEK -121	TAG	4166	PSME	21	218	60	250	34 to N
DEWEY CREEK -174	TAG	4369	PSME	15	134	35	226	16 to NW
DEWEY CREEK -190	TAG	4230	PSME	18	180	40	280	31 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
82					A	A?	I	I	I	I
121							A	I	A	I
174										
190										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
82	P	P	P	X	DNC	X	DNC	DNC	DNC	X
121	I	I	I	X		X				X
174				A		I				A
190						A				P

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)=** 437 acres established according to FS records.



## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### DEWEY CREEK

#### 1996

Found by BVRD seasonals while planning the Murderer's Ck watershed this year. No protocol survey done here, just entered the most likely drainages to call.

#### 1997

4 MAY: Creek too high now, WOW. Will have to come back to get in.

6 MAY: 1030 Walked into check nest with K Haines (*BVRD wildlife biologist*). New site right by the old nest tree in draw bottom. Saw body in nest, but not a good ID on bird, it could be a GHO. We watched for awhile but could not get a good reading on it. Left to come back and verify later in season.

4JULY: Didn't see anybody on the nest. No clear ID on this bird (GHOW or GOSHAWK?) but territory active. There was not much wh/wa on the ground, but the nest is in a mistletoe clump and most of it would be caught up high.

#### 1998

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories*  
They found a new nest site #121 that was successful. I did not get out to this territory at all and have not seen the new nest site.

#### 1999

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that the territory was unoccupied.

#### 2000

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories*

13 MAY: Gregorys said there was female on nest incubating.

27 JUN: I re-checked but did not have the correct nest site. It appears that I did not check the N121, but only the two in the drainage by N82. So it is in data base as failed, but this may be a mistake (*changed to S/F status*). I did get a good GRJA mimic, but I was in the wrong place.

#### 2001

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They did not find any goshawk and reported it unoccupied. I do not know how well this was searched or how many times.

#### 2002

8 MAY: Sarah Herve took over monitoring some of the Murderer's Creek route territories, such as this one. Took her out to orient her to areas and nest sites. I found and remarked, corrected the database, of the nest #121 that Dorman had found in 1998. We walked up to #82 first and nest unused, but we did see a GHOW fly away from us in this draw. Years back owls did use this nest. Searched a ways along Deer Ck and finally found the flagging Dorman had left. Nest is unused but GPS'd correctly now. Discussed with Sarah of where to call and search later in season.

*Sarah did not have time to get back to this territory this season.*

#### 2003

18 JUN: In for initial check and only one this year. Both nest still up but unused. Walked and called stand between the 2 nests and down along the creek. No sight/sound of goshawk.

#### **2004**

14 JUN: In for initial nest check. Searched the area of N121. I stumbled onto a green/black flagging that Dorman Gregory must have left. It marks a place to view this nest without having to cross the creek. Marked it as "DEW OP". Nest still up but unused. I have hit my limit today, fatigue, and this is all I will do here. I may get back to recheck this area on next BUC visit, but may not.

*Did not have time to return here this year*

#### **2005**

10 JUN: In for first check. I am just going to do calls along Rd #24 (with the new digital set-up) and if I get a response I will go and search, but both nests are gone. Occupied !!! Found new nest- Dew 05 (*now #174*). After 3 call stations, I heard a faint response up on ridge to south of road above nest #121. I drove down the road a ways and used caller to get a bearing-and she responded again. I searched the area between the 2 known nests and then went back higher to S on ridge following the contours toward another draw to the west of #121. I got to a place that looked and felt possible and just as I was starting to go down to searched, I heard and saw her above me higher up draw. I found the nest in a small PSME in a thicket grove. Nest is low and big, exposed to one side of tree. 2 maybe 3 white downy chicks in nest about 14-20 days. She stooped close and actually hit me hard on way out!!! First hard hit I have had in awhile, but I had been right close to nest for a while and annoyed her. The male also came in and called while I was hunkered down by tree marking nest site. A great added experience- while I was hunkered down 5 elk with 2 fawns walked into the thicket not more than 70-100 ft of me. I was up wind because they did not see me. I watched them munch around as long as I could until "MOM and DAD" started stooping me again. Great scene.

#### **2006**

*Did not visit/check this year.*

#### **2007**

8 MAY: In for first check. Occupied in new nest just up a little ways from #121 (*new nest =#190*). Small PSME again with female on nest incubating. Marked OP that was near Dorman's old OP. While I was here, TJF (*Ted Fremd*) reported that a goshawk, probably male, checked him out in the stand he was searching to east, nice large PIPO by road and where I usually park the car.

*Did not visit/check again this year. No productivity data for certain here this year.*

#### **2008, 2009, and 2010**

*Did not visit/check these years.*

#### **2011**

24 AUG: OCCUPIED/ used #174 again. Lots of wh/wa, down on rim, and prey remains/ egg shell on ground. Also a molted goshawk feather. So good ID that nest used successfully (by the looks of it ) by goshawk. Have to recheck my database because I did not have #190 in my gps unit. I know I marked it and I found a remnant of the nest so tree was marked. Have to download it and make sure they are not reversed (*corrections were made*).

## LEMON CREEK

LEM <sup>41</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	84	?		S		Found by FS personnel
1997		5/4/97		UNO		
1998		?		UNO		
1999		?		UNO		
2000		6/25/00		UNO		
2001		?		UNO		
2002		5/10/02		A		
2003		6/17/03		UNO		
2004		4/29/04		UNO		
2005		5/17/05		UNO		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

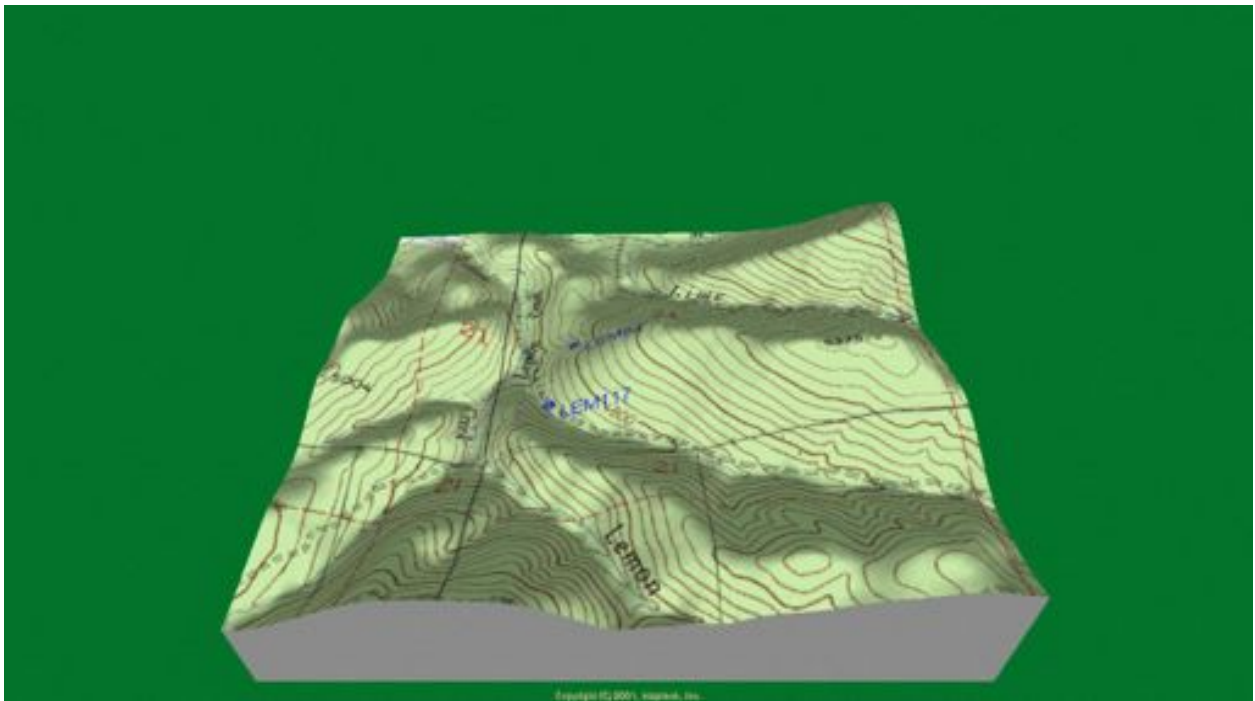
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

There is a lot of mature complex forest structure along Lemon Creek, following Rd 401, leading up to the only used nest site (#84) and continuing on to the SE of this nest. The larger, mature trees were in good health, but there was a notable amount of mistletoe encroachment in the smaller diameter tree clumps. When I last entered here in 2011, there was further deterioration. Many of the trees within the stand of nest #84 are now dead and on the ground. Much of the surrounding areas have been logged and some older clear-cut units are in this region.

*Forest service personnel found this territory late in 1996 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a few volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years.*



North up



LEMON CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
LEMON CREEK -84	NO TAG *	4756	PIPO	22	SE	35	nd	nd
LEMON CREEK -117	TAG	4692	PSME	35	nd	nd	flat	flat

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
84					A	I	I	I	I	I
117										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
84		I	I	P	DNC	DNC	DNC	DNC	DNC	X
117			I	I						X

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

\***No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 457 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### LEMON CREEK

#### 1996

Found by BVRD seasonals while planning the Murderer's Ck watershed this year. No protocol survey done here, just entered the most likely drainages to call.

#### 1997

4 MAY: 1300 New site found last year by BVRD. Nest unused at this time. Long walk into drainage because road is blocked. Use different directions than the ones Ann (*Frost*) used - don't walk up drainage because you have to go to S side of draw to see into nest. Walk up road to flagged 10" PIPO above where Ann said to start into draw. Walk straight uphill contouring draw on S side. Stay high to get to game trail marked by LG PIPO. OP is on this trail that you can look down into nest. Nest in PIPO well hidden in places.

*No other checking was done at this territory in the season*

#### 1998

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

#### 1999

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

#### 2000

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories*  
They did the initial search and found nothing.

25JUN: Walked in from Rd #21. Called stations in the area, up both directions from the Y at intersection where original nest site is. I did not actually check the nest itself for I was calling close to it. However, I did get a GRJA mimic in the area near here. No sight/sound of goshawk though so called it unoccupied.

#### 2001

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories*  
They reported that territory was unoccupied, but I do not know how much this area was searched.

#### 2002

10 MAY: Farr, the volunteer, had checked this territory and said that he had got a response from goshawk with caller. And that the nest was now gone. *NOTE: this turned out to be wrong, for I found the nest in 2003 still up and good- they apparently did not check the correct area.*

5 JUL: I went in to call the areas that he said he had gotten a response. Marked a track of "LEM 7-5-02" as I called and this was away from the nest stand. Walked and called Lemon Ck itself and a drainage to S off of road #406, but no sight/sound of goshawk. I did not go into recheck the nest – but should have! Still marked this territory as active though.

#### 2003

17 JUN: In for initial nest check and calling stations with L Vella. Lia was dropped off at the beginning of the drainage from road #21 and called stations along road and up into creek at the Y-junction in road while I walked the ridge and checked the nest

stand and surround. I found that the nest was in fact still up and in good shape- thus it had been missed in the last few years. Last year, I was searching away from this stand so this nest could have been occupied when Farr got the response- or this nest could have been rebuilt, but it looks too deep and well established to be a new one I think. This was the only time available to search this territory and no sight/sound of goshawk at all during this time and search. I GPSd the nest again to have as a better marker for next year.

#### **2004**

29 APR: In for initial nest check. As driving up road 401 slowly, I saw an accipiter- possibly goshawk – fly into view and perch along road, but flew off up drainage before I got good ID. Nest is still up but unused. I walked up the left side of Y- junction of roads below nest. Up along this road is a large PSME with an old structure in it high up. No sight/sound of goshawk though. The one I saw flying could have been a SHHA or COOP though.

*Did not get back to this territory again this year. Not on rotation list to call this year.*

#### **2005**

17 MAY: In for first check. Unused- nest #84 is partial now but still in tree. Walked along ridge above road #401 to area of X 03 (*now #117*), but unused. Have not seen this used yet, could just be old mistletoe clump but possible nest site. No sight or sound of goshawk.

*Did not visit/check again this year.*

#### **2006-2010**

*Did not visit/check these years.*

#### **2011**

25 AUG: In to do final measurement. “no tag” for #84. The nest is gone, poor satellite coverage, and a lot of the trees in this stand are dead and on the ground. Lots of deterioration now. While walking down to the large PSME #117, thought I heard a goshawk juvenile call. Saw a body of a large bird flying off, but no good ID. Could have been a mimic though, so will not call this used. No data on #117, never measured the nest parameters for I never saw it being used, but it was in one of the lower mistletoe platforms.



## LUCE CREEK

LUC <sup>45</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	88			S		Found by FS personnel
1997	102	5/22/97	Y	S/F		
1998		6/16/98		UNO		GHOW nesting in stand
1999	102	5/1/99	Y	S	3	
2000	146	6/27/00	N	S	1	
2001	148	6/6/01	Y	S/F		2 nestlings
2002	146	5/9/02		Usurped		GRGR
2003	146	5/8/03		Usurped		GRGR
2004		4/30/04		UNO		
2005	146	5/4/05		Usurped		GRGR and Canadian goose in "ALT nest"
2006				DNC		
2007		5/16/07		A		
2008				DNC		
2009				DNC		
2010		5/16/10		UNO		
2011	ALT	5/5/11	Y	Usurped		GRGR

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

FS personnel doing general surveys for the Murderer's Creek watershed found this territory late in the season; however, this particular nest cluster has had more continuous monitoring because of interesting interspecific encounters. Not only has this area been a consistently used territory for goshawk, it also has attracted Great Horned Owls (GHOW), Great Grey Owls (GRGR), and Canadian Geese (CAGO). This stand has maintained its healthy components through the years and supports a complex structure with larger diameter trees within a gentler sloping contour.

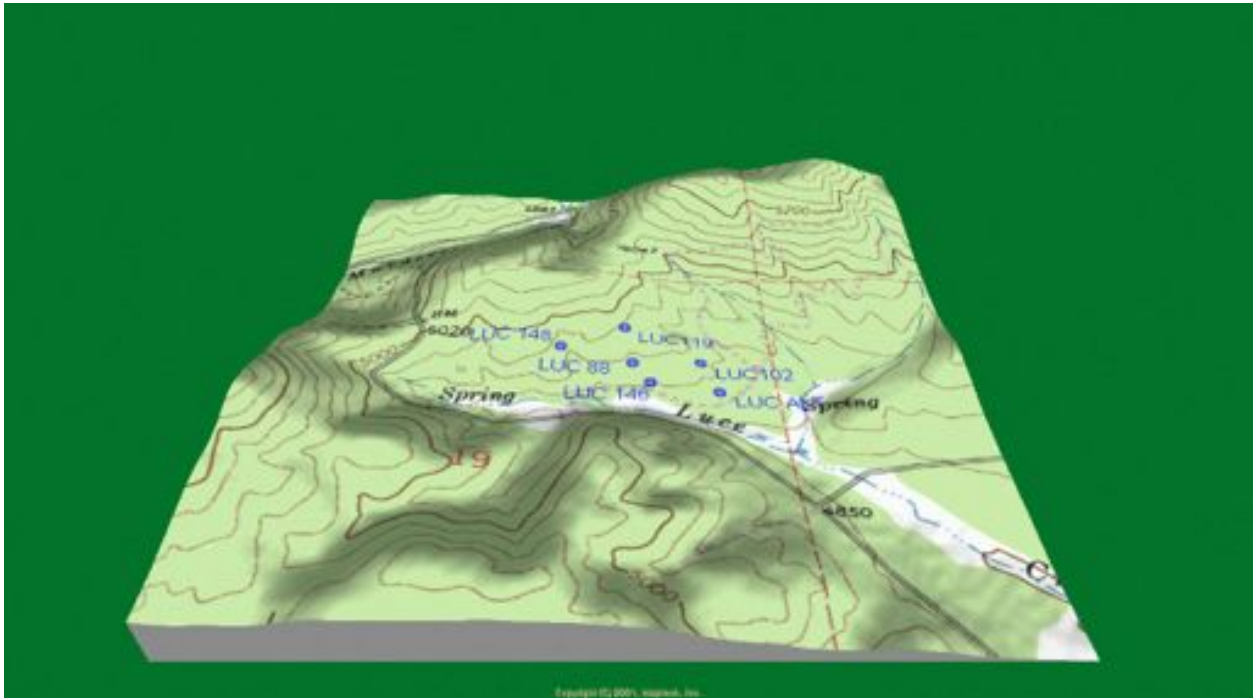
In 2002, there was an observable and marked increase of GRGR utilizing goshawk sites. Prior to this, only rare GRGR were found periodically at one other territory; but this year, there were 4 territories that GRGR occupied successfully (some in conjunction with goshawks nesting in the same stand and some supplanting the goshawks from that stand). This was the only species of owl with which a goshawk would occupy the same stand, sometimes in nests that were very close together. Since GRGR start their breeding season early (roughly 3 weeks before goshawks), the owls would already be established in the stand at the time the goshawk pair was just starting nest building.

"LUC ALT" nest has not been numbered, as a goshawk has never actually been observed using this particular nest. It has been used by CAGO and GRGR. In 2004 (see field notes), I

was puzzled by what species was occupying this nest and did not figure it out until I observed the CAGO nesting in it in 2005. There was one other territory that supported a CAGO (see Old Growth 238-Middle Route) and I am still surprised to know that goose will take nests high up in large diameter trees as they are usually reported to be ground nesters near bodies of water.



*North up*



LUCE CREEK

## NEST AND NEST TREE DATA

	ELEV		Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
LUCE CREEK -88	NO TAG *	4945	PIPO	31	nd	nd	190	5 to SE
LUCE CREEK -102	TAG	4925	PIPO	31	20	60	flat	flat
LUCE CREEK -146	TAG	4927	PSME	35	130	50	295	19 to SW
LUCE CREEK -148	TAG	4987	PIPO	31	155	70	190	20 to ESE
LUCE CREEK -119	TAG	4988	PIPO	31	164	60	250	12 to SSE
LUCE CREEK ALT	TAG	4900	LAOC	27	120	65	220	2 to SE

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
88					A	X				
102						A	I	A	I	P
146									A	I
148										A
119										
ALT										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
88					DNC	X	DNC	DNC	DNC	X
102	P	X				X				X
146	U	U	I	U		I				P
148	I	I	I	I		I				P
119						P				P
ALT				U		I				U

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA) = 546 acres established according to FS records.**

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### LUCE CREEK

#### 1997

4 MAY: 0800 Walked into stand where nest was. Nest is gone but tree marked. Nest found late after fledging last year. It appears in last year's notes that this nest was down on the ground when found. Has been logged in this area but not too badly. Nice habitat extend around meadow area and along road #353 to N. Not real dense, but large PIPO and LAOC with multi-story layers.

22 MAY: In for second called search. Occupied and found new nest in the same stand. Nest in large PIPO in rather open area that is flat. This is SE in the stand a short distance in from the road corner. Instructions of how to find tree are in notes but I have since GPSd the tree. Female on nest incubating and found out that sometimes goshawk do not respond to caller. I was only about 30 ft from the nest tree and blasted the call in 4 directions. When I started walking around the tree to see the opposite side I saw the nest, down, and then her peering over at me. She had not even moved with the calls right at her!

4JUL: In for first nestling check. Too late, they are already gone. By looks of the nest with down and wh/wa it appears that they were successful. I did hear a beg call away in the stand as I started walking into nest.

#### 1998

16 JUN: Gregorys (*Dorman and Phyllis*) had done first check and I was out with them to do first nestling checks. The nest they had found turned out to be an owl's nest, up in a fir thicket and the owls were gone. We called a few stations in the stand to teach Dorman how to do it. No sight/sound of goshawk though. If an owl had been here I doubt that a goshawk would have nested in the stand. I went over to GPS last year's nest #102. So this was Unoccupied this year.

#### 1999

Gregorys had taken this territory all year and found N102 occupied and successful. I never visited this territory this year - volunteers did a good job here.

#### 2000

27 JUN: Gregorys had done first check and did not find anything. I was out to call and search stand myself today. Started calls at far end of stand on road #4955, but when drove down to nest areas to search I saw new nest right away. In a PSME right near the road where I usually park to start walk-in. One chick in nest @ 17-19 days. No adults seen or heard in stand as I was watching nest and walking around to re-GPS all the nest (3) now.

9 JUL: Last check but late. No chick in nest but was branched somewhere near. As we (*Ted Fremd*) watched from the OP, the adult female? flew into nest tree, perched, and watched us the whole time, calm and no vocalizations. We searched but never found the fledgling, but there were lots of down and wh/wa on nest and ground so it appears successful.

#### 2001

6 JUN: In for initial nest check and search. Occupied in a new nest. Female on nest perched watching me but no other reaction. I GPSd tree which is a large PIPO further up the draw NW from the original nest found here. Instead of parking where I usually do, take the first left on #605 up a short way to the first slash pile. The skid trail going uphill leads to this area. Tree is on edge of a slight depression and clearing. Note - directions to this tree have been marked as routes since.

19 JUN: In for second nestling check. Success - 2 chicks @ 20 days plus range. One is a little older with darkening aureoles. No adults in evidence, no call or stoop.

#### 2002

9 MAY: In for initial nest check . No goshawk seen here, but N146 is taken by a GRGR owl. Female on nest incubating. I walked around to check the other nests but none used. The GRGR seem to be moving in, 3 territories are being used now (Gea, HS, Luc). 2 were nesting last year also, 2 this year so far and 1 seen along the road to Sno.

29 MAY: Out with Matt Smith to see the GRGR, but it was gone already and no fledgling seen or heard. We walked and searched more of the stand and surround again and Matt found an old structure NW of the #102 nest over nearer to the fence that runs up this draw. Marked it as Luc X (*now #119*) to put on areas to check each year.

### 2003

8 MAY: In for initial nest check . Nest #146 is taken by GRGR owl again this year. As I walked up I could hear her soft “who..who” call. She/he was tight on the nest and did not flush. I searched the stand and checked all other nest sites, but no sight/sound of goshawk.

### 2004

30 APR: In for initial nest check. Occupied in a new nest it appears. This nest is in a large LAOC in a big clump- tree is in rather open area near the road where it makes a curve around the stand. I marked “OP 04” with GPS and flagging that is right on roadway. There are bits of down on rim and a bird-I think- in nest low. It is hard to get a good look down into nest, so this could be a RTHA also. But if so, I would think they would be further along by now and calling at me. I need to come back later. Walked stand and checked all other nest sites. Most nests still up but unused.

14 MAY: In to recheck this nest with the scope. I still cannot get a good view into nest. Still only the few flecks of down here and can't really make out any bird- like I thought I saw with binoculars . So, maybe I am wrong about this nest. Will check again later in year.

14 JUN: In to re-verify if I can. This is strange. There appears to be more down on nest, but I'm beginning to think it is not in use. I saw no movement or bodies in nest, though this is an impossible nest to look into. But, I walked all around it and did not see or hear any goshawk. I even went to the base of tree and still no sight/sound of goshawk. I think if a goshawk was here I would see more activity. So will have to check again but I am having doubts about this as being occupied at all.

24 JUN: Final nest check. There is nobody here and it is unoccupied. My mistake at first- this down is probably from a past year's attempt- or somebody tried to start this nest here and abandoned it early on. It is unoccupied.

### 2005

4 MAY: In for first check. GRGR is in N#146 and Canadian Goose is in X04 (*now Luc Alt*). Walked and checked all nests and no goshawk seen but last year's mystery is solved. The X04 nest in big LAOC by road is a goose. It has down and appears like last year and this time she stuck her head up so I could see her. So, last year, I knew a bird was in the nest but by the time I made my last nest check, they had already fledged. I was gauging it to be raptor timing, not goose, thus that is why I didn't see any young when I returned last year. So, good call to say it was unoccupied territory last year. GRGR status: as of today there were 2 big chicks in nest, downy but alert and watching, heads upright and not real wobbly. One of the adults was perched on branch above nest and did not flush or look concerned. When I came back to truck after search, he/she was down sitting in nest (thus beginning of May GRGR chicks are hatched and about 1-2 weeks old already).

### 2006

*Did not visit/check this year.*

### 2007

16 MAY: In for first check. Active at least. No new nests found but first heard good beg call (possibly mimic) and then I heard a male? alarm call one time. Searched the area where this was coming from up slope from other nests, but did not find or see anything.

14 JUN: In to do a few calls to see if I can pick them up. Definitely ACTIVE. I picked up a hunting male at top of draw along fence line NW direction from nest sites marked as “GOS 07”. And also a goshawk seen flying toward Murderer's Creek (found old nest structure X 07 in this area just N of other nests). Could have been the hunting male again because no other call or response given. I drove and called along Rd 55? (road that forks off Rd 21 at the hairpin turn) and called along draw of Murderer's Creek itself. Walked and called all the good looking habitat in these areas to NNW of other nest cluster. Did not find anything. Will drive out along the road that borders to the south and east of nest cluster to see if there is another good draw back that way.

## **2008 and 2009**

*Did not visit/check again these years.*

## **2010**

16 MAY: In for first check. Unoccupied –unused. We (*Ted Fremd*) searched the whole stand and no sight or sound of goshawk. Only 3 nests are up now in partial condition. I walked all the way over top of ridge, down into Murderer’s Creek where “Gos 07” was picked up. TJF drove the car around on road 21 to pick me up. I had forgotten that the N side of this ridge is all cut over here. Went up the road fork to marked site “X 07” nest- it is a nest in very top of small-med size PSME in crotch of tree top. It actually looks more like a COHA or Raven nest now. Also unused.

*Did not visit/check again this year.*

## **2011**

5 MAY: Out with TJF (*Ted Fremd*), drove in on road 21 as far as we could before snow bank stopped us. Thought it might be open now so we could get into Murderer’s Ck from this side, but no go. Too much snow on roads this year. Walked into measure nests here. OCCUPIED/GRGR in Luc Alt. This is the LAOC that had CAGO and other that I could not ID, so never numbered it. But now will mark it for FS to put into GIS. A RTHA is nesting somewhere near to #146 off toward the meadow area this year.



## OREGON MINE

OM <sup>49</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997	98	?		S		Found by FS personnel
1998	98	6/30/98		A		
1999	98	5/1/99		F		
2000		6/27/00		UNO		
2001		?		UNO		
2002		5/8/02		UNO		
2003		6/18/03		UNO		
2004		4/29/04		UNO		
2005		5/17/05		UNO		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

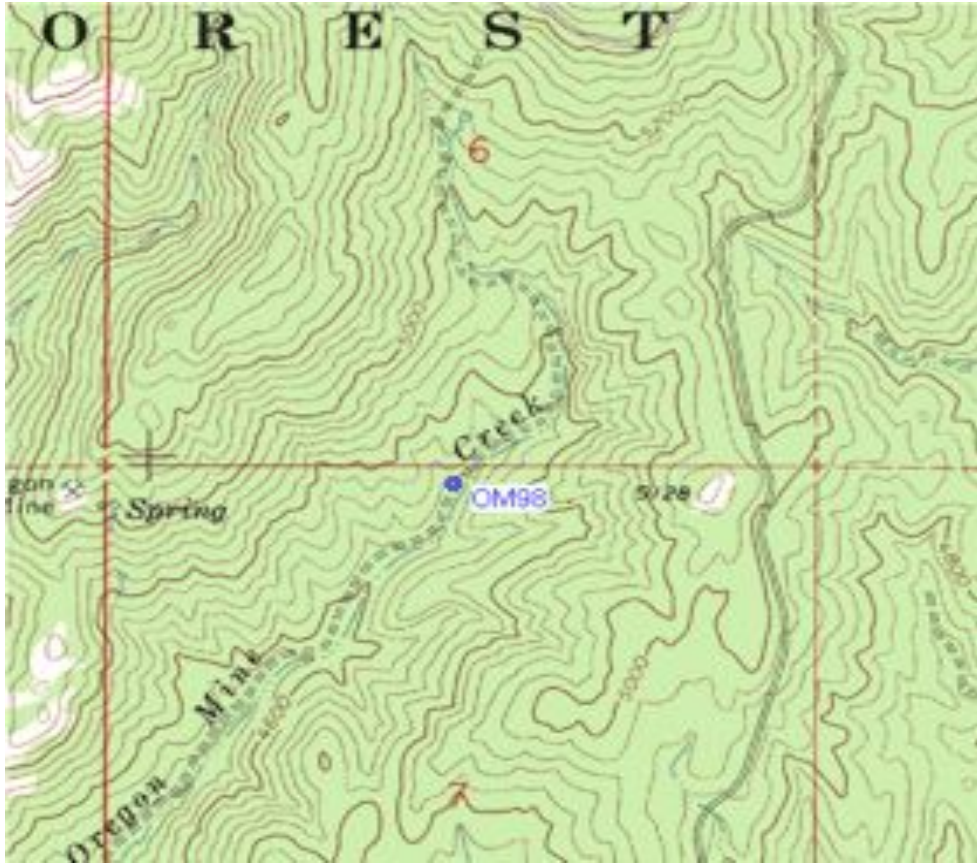
There has only been one nest found here in this draw. The habitat is a thin line of uncut forest along the creek, surrounded by cut units on the up slope of the draw.

In 2004, I did an extensive search with calling stations up this draw and in the surrounding region, but never found any other nest sites (see 2004 notes). This search was intended to ascertain if the prescribed burn scheduled for this area would impact any nesting goshawk. At the north end of this draw just below Rd. 2150, there is some suitable habitat which includes a spring.

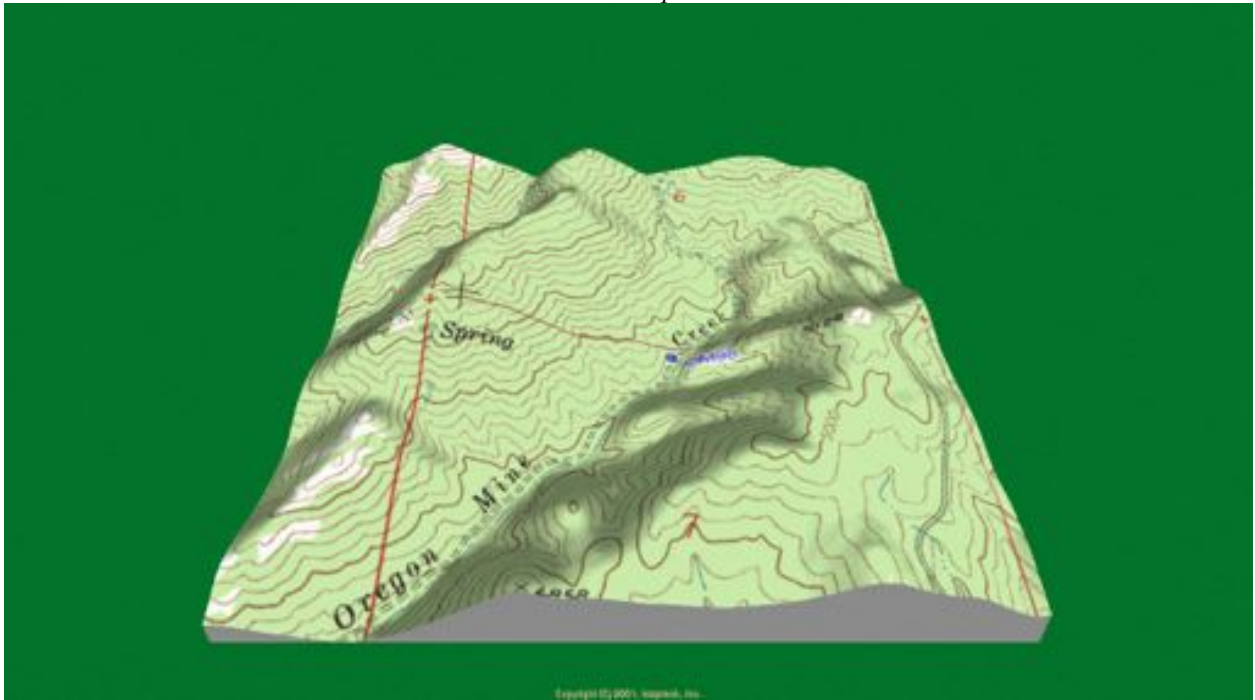
Photo to right: Nest tree #98

*Forest service personnel found this territory late in 1997 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest.*





North up



OREGON MINE

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
OREGON MINE -98	TAG	4800	PIPO	42	E	50	230	11 to SE

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
98						A	I	A	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
98	P	X	X	X	DNC	DNC	DNC	DNC	DNC	X

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**Post Fledging Area (PFA)**= 449 acres established according to FS records. However, with the burns in this region this designation may have been altered.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### OREGON MINE

#### 1997

Nest found by BVRD personnel late in season. Not found via protocol survey.

#### 1998

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*

They reported that territory was active, but I do not know how much this area was searched. A goshawk must have been seen in the area, or the nest looked used early in season, so they called it active.

#### 1999

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*

They reported that territory was occupied but had failed, but I do not know how much this area was searched.

#### 2000

27JUN: This is the first time I had been to this site. I had a time finding the road to walk up because a gravel pit obscures the road #917. I GPS'd the tree, it was marked way off on the FS maps. The drainage is decent. I walked up past the nest and did a few calls, then called all the way down the drainage. No sight/sound of goshawk. I did get stooped by the Prairie falcon in the Geo on Field's Peak road coming in. I went to look for the nest in the outcrop that is down below this road, chicks still in nest. Marked an OP for this.

*Never got back to this territory this year.*

#### 2001

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*

They reported that territory was unoccupied, but I do not know how much this area was searched. They did report that an alternate site may be lower toward the Murderers Creek itself. They saw goshawk flying and calling around here later in the season. Will have to check it out next year.

#### 2002

8 MAY: Sarah Herve took over monitoring some of the Murderer Creek route territories, such as this one. Took her out to orient her to areas and nest sites. Drove up road to just below nest area and walked up. Nest 98 is ½ gone now and is unused. Did not take time to walk a lot of drainage. SH will search later. We then drove to other side of ridge, to east?, where supposedly goshawk were seen late last year up road#915. We walked up 915 to see if any possible sites. It is rather open habitat, but there are some large trees left especially in a draw that runs up ridge toward the nest #98 drainage. There is not much good habitat on the other side of Rd 915 that runs toward the Prairie falcon nest site.

*SH did not have time to get back to this territory this season.*

#### 2003

18 JUN: In for initial check and only one for this year. Nest is gone now and I did not spend any real time searching the draw. It has started to rain.

#### 2004

29 APR: In for initial nest check. Curly (*German Shepherd dog*) with me. The only nest is gone along road. No sight/sound of goshawk all time there. I saved the track as "12-Apr-04 OM". Walked up road all the way up to the spring and almost to road 2150. Marked a good habitat "OM HAB" toward top of road, but above this it gets steep up to 2150 where the burn is. The activity planned in this burn area for this year would probably not be a disturbance to any nesting goshawk in the drainage. I will drive the 2150 road later to see the layout of the burn units.

3 MAY: discussed in field with KS (*Ken Schuetz*) about the burn units and the possible disturbance of the goshawk PFA here. I pointed out the good possible habitat in drainage and where the only known nest is located. The thinning cuts are not all yet planned, so there is still some time here so I can come back and call area later. I am not too concerned about any problems with this though.

14 JUN: In for second called search. Started on top off of road 2150. Spot checked a few draws off of major roads in this area. Using photo 801-221. Access from the top 2150 road is not good so went down 21 road to W of nest drainage and walk some of that. Checked a little at the top, but on the topo map these are real steep draws so that is why they look good on the aerial photo. I ended up going down and driving up the OM road to old nest site. I walked across the stream and searched the draw east that looked good off of photo 2501-69. No sight/sound of goshawk. All the roads that look like they access to the west of old nest site are obliterated and I do not see any plausible way to search this.

## **2005**

17 MAY: In for first check. Drove up the road a ways, raining a bit now. Unused and nest is gone. It was raining as I walked up to nest tree but not on the way down. Didn't really search much off the road. No sight or sound of goshawk.

*Did not visit/check again this year.*

## **2006- 2010**

*Did not visit/check again these years.*

## **2011**

24 AUG: In to do last measurements. Unused – no nest either. Staying near OM campground but not in it. It is FULL-the first time I have ever seen this many people in here-good that it is getting use, but bad because this means that "my non-populated" forest may be getting discovered!!

## STEWART CABIN

STW <sup>47</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993		8/93		UNO		Spot check for initial survey
1994				DNC		
1995		5/7/95		UNO		
1996				DNC		
1997	42	5/4/97	Y	S/F		
1998		?		UNO		
1999		?		UNO		
2000		?		UNO		
2001		?		UNO		
2002		5/8/02		UNO		
2003		6/18/03		UNO		
2004		6/14/04		UNO		
2005		4/24/05		UNO		
2006				DNC		
2007		6/4/07		UNO		
2008				DNC		
2009				DNC		
2010				DNC		
2011	43	8/24/11	N	OCC		Wh/wa and down on nest, prey remains on ground

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This territory represents an old goshawk territory found in the late 1980's during the Shake Timber Sale planning. At that time, no formalized goshawk regulations were in place so only the nest tree and a few acres were saved from logging. Most of these old "goshawk trees" (listed in the FS records) were revisited in 1993, while in the process of determining where to concentrate the protocol surveys on the Malheur (Daw 1997, Daw and DeStefano 2001, DeStefano et al 2006).

While this territory itself was not included within the initial studies, when I searched it again in 1997, it was reused and occupied by goshawks. This represents one of the many examples I observed that it may be *many* years between usage of these nest sites but they still are viable territories. In fact, in 2011, nest #43 was again occupied representing a hiatus of much greater than 5 years between usages. The USFS considers a territory dormant if not used in 5 years and will consider timber management activity on these areas under the directives of "East Side Forest Plan Amendment 2" (pers. comm. C. Kranich). I strongly suggest that a much longer management time line be used in saving these stands from any disturbance. Actually, in my opinion, these known stands should simply be permanently maintained as goshawk habitat. There is enough continued attrition to the forest due to fire and disease, that the small percentage

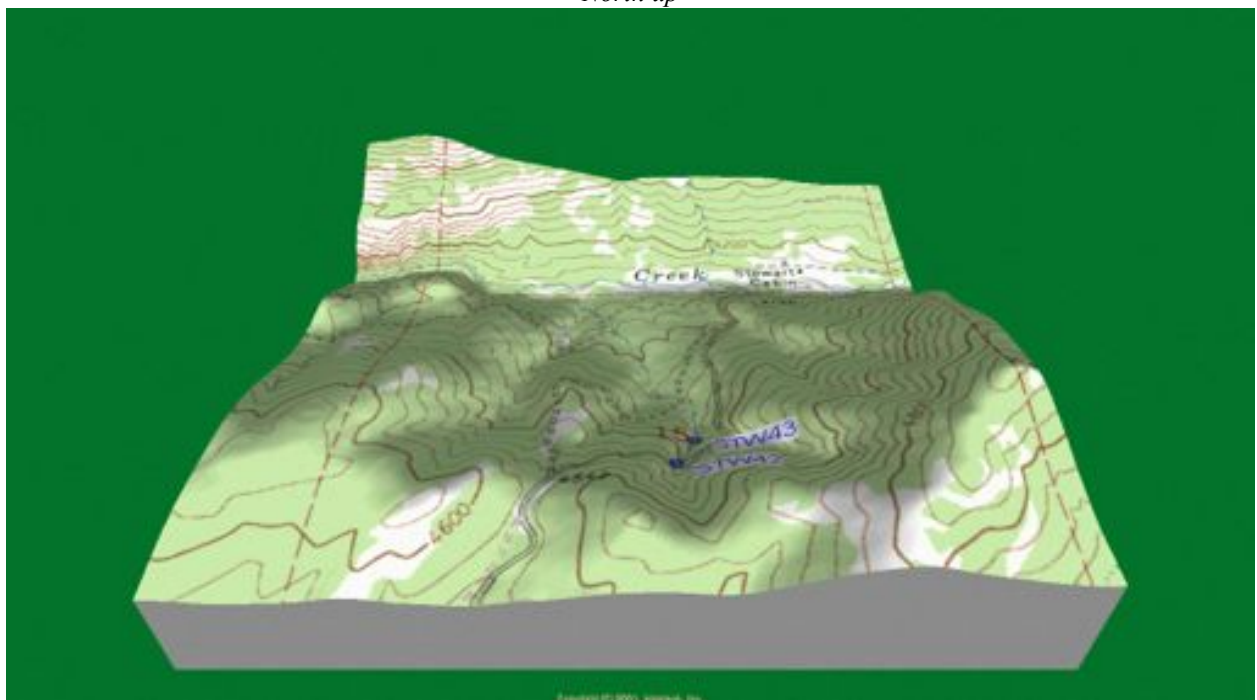
of stands included in this study should be saved, as best as they can, to augment this loss of habitat altogether.

In 2005, I thoroughly performed a called search in this area because of a prescribed fire proposed for the region. The stands to the west and particularly to the north that drop down into the Murderer's Creek drainage are intact older mature forest and seemed highly suitable habitat for goshawk. Although I did not get back to search specifically along Murderer's Creek just below Thorn Creek Butte, I strongly suspect that alternative nest stands will be found here. It is a steeper part of the Murderer's Creek area and it appears to have not been logged.





North up



STEWART CABIN

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
STEWART CABIN -42	TAG	4500	PIPO	21	180	50	275	15 to N
STEWART CABIN -43	TAG	4384	DD PIPO	22	180	80	265	12 to N

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
42						A	I	I	I	I
43						I	I	I	I	I

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
42	I	I	P	P	DNC	P	DNC	DNC	DNC	I
43	I	P	P	P		P				A

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 433 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### STEWART CABIN

#### 1995

##### Summary Notes

Checked on 7 May 95. This is an old territory found in late 80's planning the Shake TS. Only the nest stand was protected. Found both nests, but they are badly deteriorated and no signs of use. Sonya checked this territory in Aug 93 and found nothing then either. The drainage is logged right up to the stand. Since this is so far out of the study area, I'll consider this an "extirpated" territory and not check it again. (*See notes on this for 1997 - taken again*)

#### 1997

4 MAY: 1430 This is rename of old Murderer's Creek territory. This is territory found during TS planning in late 80's and had not been occupied since we started checking. I have this as "extirpated" in my database. Nest N42 is occupied this year - Female on nest incubating. It is the nest right at the curve of the road at top and can see clearly into nest.

4 JULY: In for fledgling check. I found one dead fledgling @ 40 days at base of the tree. I could not determine if any other chicks had made it, but called it successful. Tree has sign on it.

#### 1998, 1999, 2000, and 2001

*Dorman and Phyllis Gregory had taken over this route to do the checking on territories.*

They reported that territory was unoccupied during all these years, but I do not know how much this area was searched.

#### 2002

8 MAY: Sarah Herve took over monitoring some of the Murderer's Creek route territories, such as this one. Took her out to orient her to areas and nest sites. We drove by nest #42 to show her where it was and which areas to search. Nest still up and in decent shape but unused. We did not walk the stand at this time, SH said she will have to do that later.

21 MAY: Sarah's notes: Nest #42 in good shape, drove by. Nest #43 in good shape.

#### 2003

18 JUN: In for initial check and only on this year. N42 is unused and N43 is almost gone. No sight/sound of goshawk. I searched the stand and called over to WNW a possible other draw close by (marked "poss hab") but nothing.

#### 2004

14 JUN: In for initial nest check. Both nests only partial, but unused. Walked stand and found a very old nest site down draw, but unused. Unoccupied and will not be back, not on this year's rotation of searching.

#### 2005

24 APR: Checked early due to fire planning. The nests are unused. TJJ (*Ted Fremd*) and I walked and searched the good looking draws around the nests and from the maps that KS (*Ken Schuetz*) put together for habitat protection, but didn't find any new nests or goshawk. BUT-the draws that lead down into Murderer's Creek to north of nests, are very possible. The find of the day is this old growth area along Murderer's Creek, below Thorn Creek Butte that looks very good. My bet is that this drainage is the main goshawk territory and that the STW nest found in the 1980s was an alternative site then. I have never been down here along Mur Ck to call before, but hope to come back. Will have to talk to KS about possibly saving out these 3 draws planned for burning- and ask just what basis is there in the first place to burn here. It doesn't look all that bad to me!!!!

*Did not visit/check again this year.*

**2006**

*Did not visit/check this year.*

**2007**

4 JUN: In for first check. Just checked on the nests, not much of a search. Unused #43 is partial now and #42 is unused. No sight or sound of goshawk. On to doing survey for Thorn Fire Area this year.

*Did not visit/check again this year.*

**2008-2010**

*Did not visit/check these years.*

**2011**

24 AUG: In for final measurement. OCCUPIED/nest #43 this time. This nest I have never seen used yet and it was partially gone last time I saw it. It is well rebuilt with lots of wh/wa on ground and nest- down on nest rim-prey remains on ground. Probably a goshawk definitely by the looks of it this late in season, but couldn't find any feathers. Both nest are still in good shape which leads me to believe that this territory may have been used more in the last years since 2007 when I last searched here. Obviously, still a viable stand for nesting!

## WHITE CREEK

WHT <sup>37</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996	79			OCC		Found by FS personnel
1997		5/4/97		UNO		
1998	79	5/4/98	Y	S	1	
1999		?		UNO		
2000	79	5/13/00	Y	S	1	
2001		?		UNO		
2002		5/10/02		UNO		
2003	79	5/8/03	Y	S	2	
2004	170	6/14/04	N	S	3	
2005		5/17/05		UNO		
2006				DNC		
2007	170	5/16/07	Y	S/F		
2008				DNC		
2009				DNC		
2010				DNC		
2011	(New)	8/25/11	N	OCC/S	@ least 2	2 juveniles calling in stand-no nest found though

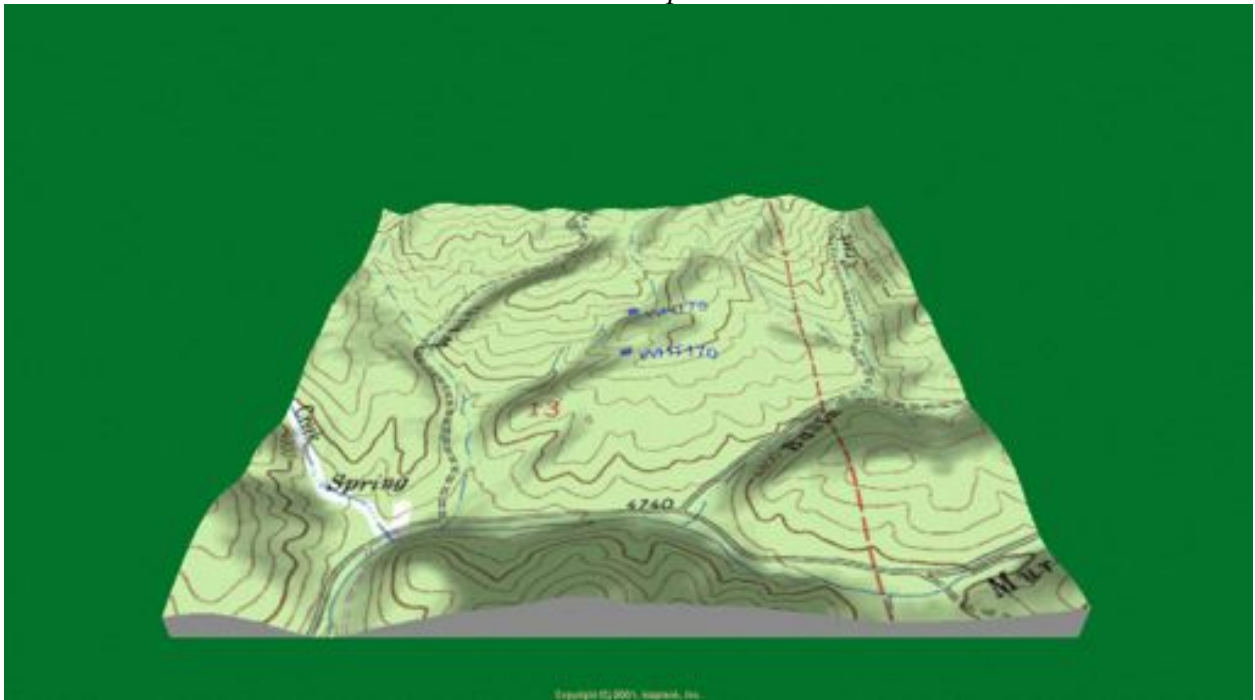
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This area has maintained its more mature forest structure in the nest areas, however logged units surround it. This draw of White Creek is rather difficult to access from the lower road and is a substantial walk to the nests if approached from the north side. Thus, this territory is fairly well protected from disturbances from regular human activity (e.g., wood cutting, vehicle traffic). When last entered, the nest stands themselves had not suffered a lot of dead and dying trees, yet there is evidence of this in the lower part of the draw.

*Forest service personnel found this territory late in 1996 while doing wildlife surveys required for timber sale planning of the Murderer's Creek watershed. Territories within this watershed have not received the intensive monitoring as those territories found in the initially surveyed areas of the Malheur National Forest. This territory was included in what I call the Murderer's Creek Route, which I had attempted to turn over to a few volunteers to help me with monitoring of nests in 1998 to 2001. All were trained in the standardized field protocols; however, detection of goshawk was variable during these years.*



*North up*



WHITE CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
WHITE CREEK -79	NO TAG *	4850	PIPO	30	E	50	215	22 to NW
WHITE CREEK -170	TAG	4670	PSME	24	115	40	200	16 to NW

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
79					A	I	A	I	A	I
170										

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
79	I	A	I	I	DNC	I	DNC	DNC	DNC	X
170			A	I		A				I
new										A

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

\*No tag= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= 487 acres established according to FS records.



## FIELD NOTES

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### WHITE CREEK

#### 1996

Found by BVRD seasonals while planning the Murderer's Ck watershed this year. No protocol survey done here, just entered the most likely drainages to call.

#### 1997

4 MAY: 0900 New site found by BVRD in 96. Nest good but unused. DIR: Directly E of the turnout on Rd. #2190, that is .4 mi up road, is a meadow. Flagged a small lodgepole at this end of meadow. This leads to a small game trail that follows the old skid road up tributary. At about 200 paces, the stream widens a bit, there is a very old large stump and large LAOC here. On E side of stream is a flagged PSME. Cross here and head uphill to flagging and gnarled branch I set against tree at top of rise. There is another game trail that follows stream ...very hard to describe and find. Need a GPS unit and/or someone to take you there.

#### 1998

*Dorman and Phyllis Gregory had taken over this route to do the initial checking on territories. I went out with them to do the first nestling check this year.*

4 May: They found the female incubating on nest.

16 Jun: 1 nestling in nest @ 26-28d. The female was watching nearby and stooped when I got close to the tree. I used the GPS to mark the tree, so it will be easier to find for others.

#### 1999

Was Checked by the Gregorys, and was found unoccupied

#### 2000

13 May: The Gregorys checked and found the female incubating on nest #79.

25 Jun: I went out to do the nest check. I think the chick has already fledged! As I was walking up to nest, it looked like a failure, but still with lots of wh/wa on ground. An adult was watching me in the stand, but only called one time. I could not see anybody on the nest, but a little ways up the drainage I heard a persistent beg call. As I was walking up to it, it flew away high across the ridge and was back-lit. I could not make out any color on the breast to see if it was a juvenile or not. I watched a long time but it stayed put, and there were no other adults around me. I believe that this one juvenile fledged early and this was it.

#### 2001

Territory checked by the Gregorys and found unoccupied. This was only checked once at the beginning of season and was never entered again to my knowledge.

#### 2002

10 MAY: Gregorys had checked this nest and said it was still in good shape but unused. They said they would do a second search later, but I am not sure if or when it was done.

#### 2003

8 MAY: In for initial check. Nest is used-female on nest incubating. I saved a new track = "8 MAY03 WHT" into the nest. The first set of flagging allows a good view into the nest. But uphill from this to flag hanging on dead stick on tree clump is a good OP to look down into nest. I can see her whole body from here.

17 JUN: In for nest check. I'm going in from the Riley Ck side from the top this time to see if it is an easier hike to the nest, instead of bushwhacking up the drainage. Walking over the hill from road #331. Found the OP and at first thought that this was a failure also, because a lot of the nest had fallen on the limb below and I was scoping that out. But successful with 2 chicks, 1 @17-19 and 1 @29-22 days. Female flew to perch above us and called a few times but then stopped and just watched us (*out with Lia Vella*). There is a lot of good habitat up here at edge of the logging cuts along the road.

27 JUN: Final check. I have marked a spot on the road #331 to start walk in = WHT ST. 2 chicks still, one @28-30 and other older @32 days. Female was a bit more aggressive this time and stooped 2x as I was setting up scope. She finally settled and perched above to watch. I stayed awhile to get a good view of the chicks that were lying down- had to wait till they moved. Very peaceful. I now have to change the flat tire on the VUE and drive slowly into town to get the full tire repaired- that shoots most of the day!

## **2004**

29 APR: In for initial nest check. Walked in from "back" from road 348 off of road 331. Nest still up but unused. This will be one of the territories to call in rotation this year. I need to walk around on this side more to scope out possible habitat. The aerial photos will help. This end of drainage seems like it has more sites than down on original side that I use to come in on.

14 JUN: In for second called search. Using photo# 2102-192 and walking in from the N now. Occupied in a new nest! I found her in a new nest in the draw SE of original nest. I walked 1.25 miles down drainage and past the old nest continued on the E. She did NOT respond to the caller at all, but only to me when I topped the ridge that looked right down into her nest site. Very aggressive female. 2? chicks in nest @ 17-22d perhaps. Can't see real well with her stooping me a lot. Nest is low in a PSME will have to mark later, but I have marked "TOP-04" as the area that begins the descent into this nest draw.

24 JUN: In for final nest check. Successful with 3 chicks. All were standing on nest when I entered the stand, but as I got closer, 2 flew off. So they are fledged already. One stayed on nest, calling and was well into 34-36 d. Female very aggressive again. Good thing I have GPS because it is very hilly and convoluted in here that it is hard to navigate. I marked nest 2004 as close to PSME as the female would let me get. But the chick was stressed also, so I did it quickly. Female perched and stooped very close to me at times so I saw her clearly. T-storms have started in Bear Valley and toward Strawberry Mtn. now.

## **2005**

17 MAY: In for first check. Walking in from road 331. Unused, both nest still good but nobody there. I walked all around nest stand and down, between and up but no sight or sound of goshawk. When walking down the draw of last year's nest #170, I really got the feeling that they were there, and I was going to see them momentarily- like being watched. But, they weren't in nest and I won't have time to call this year. So I bet they are here but don't know where. Or I could again doubt myself and say this feeling was just my desire to see them and not really picking up on their presence. Who knows!!!

## **2006**

*Did not visit/check this year.*

## **2007**

16 MAY: In for first check. Occupied with female incubating on N#170. So couldn't take measurements for FS. Nest #79 looks good and rebuilt, possibly used last year? I did not visit/check last year.

*Did not visit/check again this year.*

## **2008, 2009, 2010**

*Did not visit/check these years.*

## **2011**

25 AUG: T-storm last night. Out to do final measurements and final 5 territories. OCCUPIED/S with at least 2 juveniles in here. Heard the 2 calling in the vicinity between both the nests. Was measuring #170 first and heard them in the other draw but SW of nest #79. Thought that 79 might be used, but not the case. New nest for 2011 is in this area somewhere, but not found. The gps was not receiving satellites well in here for some reason, so the exact tree for 79 will be a "no tag". Nest is gone but I recall this area well and know that the marker is accurate to the stand.

## **Supplemental Territories**

**Duncan Creek (DUN CK)**

**Little Malheur River (LMALRIV)**

**Lost Cabin (LC)**

**Shirrtail Creek (SHTT)**

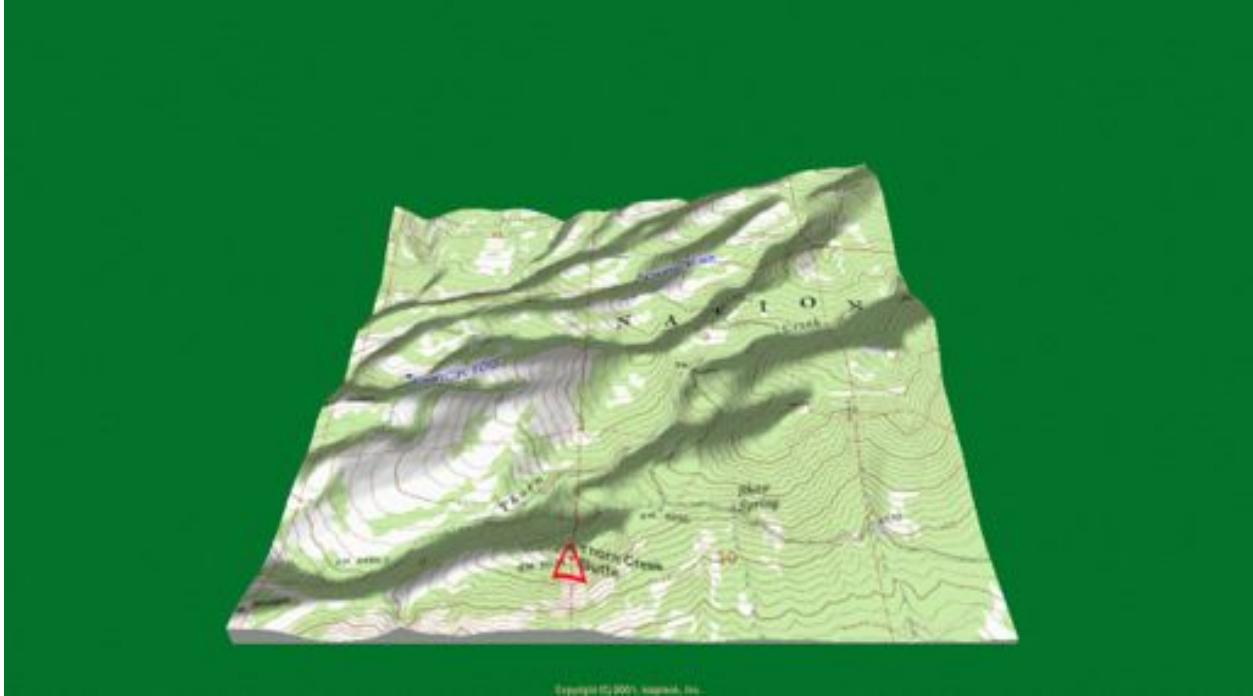
**Sugar Creek (SUR)**

DUNCAN CREEK NEST  
(DUN CK<sup>37</sup>)

This territory was found during a survey of the Thorn Fire Area in 2007. I was hired on contract by Ken Schuetz, wildlife biologist for the district at the time, in order to assess the total area for nesting goshawk prior to any timber harvesting activity of the burn. The only information I have of this occupied nest was obtained when I first discovered it (see field notes); and to my knowledge, no other follow up visits occurred. I did not take any measurements of this tree or area. I submitted a detailed report of my survey and findings to the FS in 2007 which should still be on file at the FS office.



North up



## DUNCAN CREEK

### FIELD NOTES

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#### **Duncan Creek Nest in Thorn Fire Area**

**2007**

Doing survey for FS Fire restoration for KS (*Ken Schuetz*).

6 JUN: Found new nesting goshawk. Found goshawk pair and nest. Marked nest with “NT” (*now #DunCk 109*) and the contact point when male came up to see me. It was from a long distance that they heard the caller. I took off down draw searching and did not find the nest tree for awhile. It is down along the 062 road in draw. Female was watching and calling at me the whole time and got very aggressive when I was near the nest. Tree is PIPPO about 21 dbh, nest exposed on uphill side and when you walk up to ridge here, can look down into nest well. Looks like 3 chicks with pin feathers in wings already 14 days???maybe up into 20 day range. GPS marked as close as I could get to tree, but she was knocking me down to the ground with her stoops. Left to continue calling area up road when I thought I was well enough away.

LITTLE MALHEUR RIVER  
(*LMALRIV*<sup>36</sup>)  
Prairie City Ranger District (PCRD)

In 2004, my services were requested to investigate the possible disturbance to a known goshawk territory on the PCRD. Salvage logging from the Monument Fire was underway and there was a concern about the activity along the haul road #1672 that ran directly by this territory. I didn't take any direct measurements of this nest tree or the nest stand for it was the jurisdiction of PCRD. I have attached here a copy of my report submitted to Ken Schuetz, the wildlife biologist for the USFS at that time.

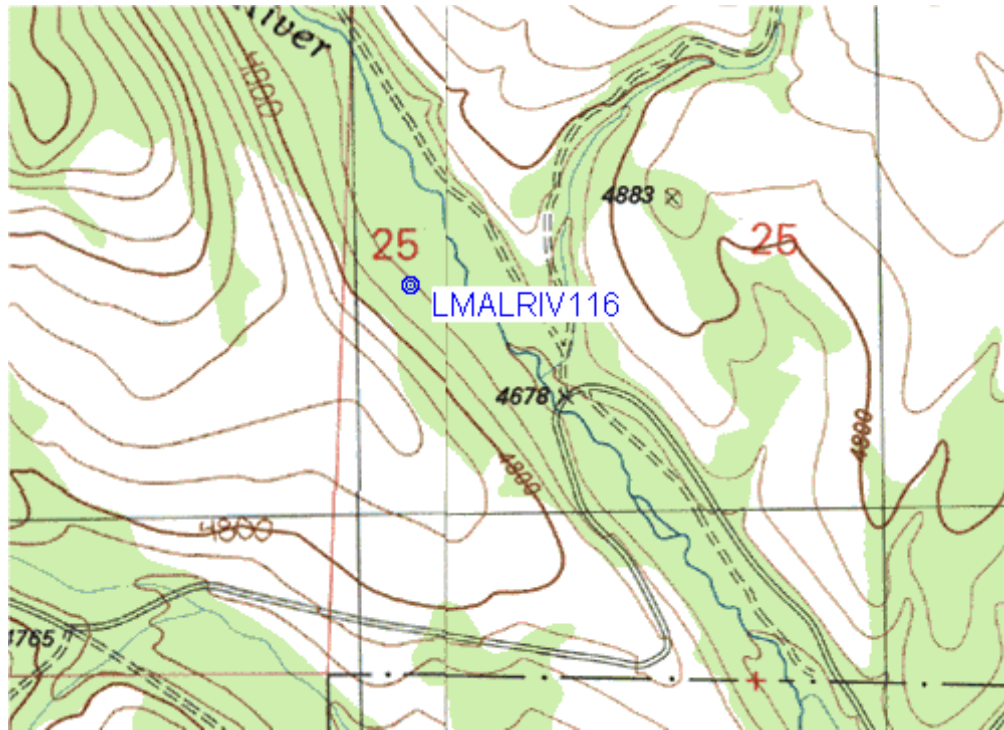
Monument Fire Access Road

The data suggest it would have been preferable to maintain the total time restriction regarding this goshawk territory adjacent to the haul road, but here again, I realize that the political pressures were considerable. The data that I supplied allowed you to implement this waiver ("...Vegetation screening is fairly heavy between the nest tree and the road; however, I am uncomfortable permitting unrestricted use past the nest stand."). The monitoring criteria is stated as: "Before haul begins, the nest stand will be monitored for goshawk presence to determine if the PFA is still active (*which I did, and it was as of 6/11/04*). If the nest has failed, unlimited haul will be permitted. If the territory is still active, the nest stand will be monitored once every 7 days after haul begins to monitor adult and fledgling response to the activity. If the biologist determines haul is having detrimental effects to the goshawks, haul will be discontinued until October 1<sup>st</sup>."

This monitoring requirement is troublesome in that it may not be effective. As we discussed, this type of monitoring is unrealistic for this time in the breeding phase. I am unaware of a reasonable methodology to discern the apparent disturbance caused by trucking activities from the natural progression of the fledglings moving away from the natal stand. Studies have shown that young goshawk tend to move away from the nest, usually during the 2<sup>nd</sup> and 3<sup>rd</sup> week post-fledging, increasing the distances in each successive week. In the first 4 weeks of leaving the nest, fledgling locations are within 200m-800m of the nest, and can be up to 1km from the nest. Greater than 25 days post-fledging, there is an abrupt increase in the distances moved. Thus, during monitoring at this time, one would not be able to discern if the fledglings were adversely affected as a result of unnatural truck traffic, or if it was a natural, normal pattern. In addition, after approximately the 4<sup>th</sup> week post-fledging, both adults rarely defend intrusions into the nest stand and become secretive. Methodologically, this makes it very hard to detect the presence of any goshawk at all. The range in fledging dates on this forest this year was from 20<sup>th</sup> June to the 10<sup>th</sup> of July with the average date of fledging being the first week of July. This means that this monitoring proposed would be starting in the 3<sup>rd</sup> week post-fledging.

You had asked me as a volunteer if I would search the stand during the week of the 19<sup>th</sup> of July; but I was not able to visit this territory due to other research commitments. I hope that even with personnel cutbacks and time restrictions someone on the PCRD will follow through with this monitoring.

I am sending this report directly to you. Please feel free to use it in any venue that you feel is appropriate. I sincerely appreciate your strong voice in the U. S. Forest Service advocating consideration of the broad taxonomic diversity in the decision processes, not merely those species that already have strident economic support.



LITTLE MALHEUR RIVER



## FIELD NOTES

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### Little Malheur River on PCRD

2004

**12 MAY:** Out with Alan Miller of PCRD to help check on some goshawk territory that may interfere with the Monument fire timber sale area. This is right along road 16 across from the campground that TJJ (*Ted Fremd*) and I once found. Even at that time I had remarked that this looks like good goshawk habitat. Met Alan Miller at office and went with him to site. When we parked at the junction of roads at this 90\* turn in #16 across from campground, I heard an alarm call directed at an osprey flying along the river. But this was across the river, we were on the side that the logging road is, the one they would be using. We walked over to the area of the call to search. We found the new nest with an incubating female in a mid size LAOC on the hill slope. We also found an old nest structure and I marked both of these for the Forest Service. The area marked on the maps from many years ago was incorrect and I emailed the UTM's to Alan.

We drove another area where goshawk had been found in the past on way home. Area along Anderson Ck and Canteeno Spgs. Still looks like suitable habitat but we didn't stay to search. I asked Alan to email me where they had found the old nests, but he never did. I thought I might have time to re-find them if goshawk there, but I did not.

**11 JUN:** In for nest check. They had asked me if I could do this because the logging/FS people wanted access to that road. I drove all the way out there, but right at the 90\* turn where I park, there were 3 little boys with rifles shooting birds. There were 3 camping rigs in the CG. Shit. I did not want to alert them to where I was going, so I sat in car and gave them the "evil eye". They finally moved off toward the campground, and I walked up logging road, crossed the river at about nest level. Just as I got into the clearing just out of the water, she came off nest calling. I split fast back across river for I did not want her to call anymore. Hopefully the little bastards did not hear her. I did not get near the nest to get a count at all, but it is apparent that she is successful so far. I paced off the distance from the river here to road to give info to KS (*Ken Schuetz*). He is writing up the restrictions of use for this road. I feel that she is well screened from this road and that limited use will hopefully not disturb her.

Later I learned that KS had allowed use of this road prior to September under the conditions that monitoring be done on a weekly? basis. I wrote up a brief memo for his records stating the pros and cons of this action. The Forest Service did follow through with the monitoring and found that the 2 fledglings followed a pattern that I predicted but did OK. There seemed to be no mishaps here with the goshawk. The sale continued, road was used, and the goshawk were successful.

## LOST CABIN

LC <sup>35</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995	78	?		S/F		Found by USFS personnel
1996		5/1/96		UNO		
1997		5/6/97		UNO		
1998				DNC		
1999				DNC		
2000				DNC		
2001				DNC		
2002		5/24/02		UNO		
2003		June		UNO		
2004				DNC		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

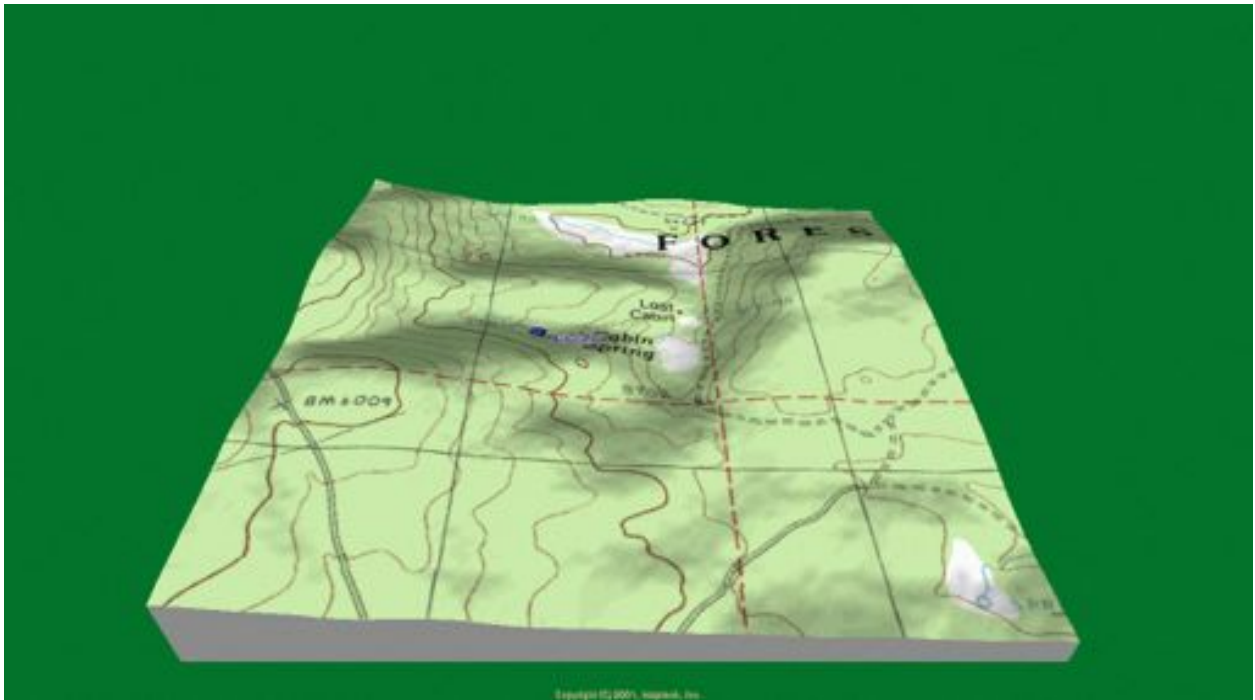
Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

This nest site is far outside of the initially surveyed areas, well to the southwest in the BVRD. Again FS personnel doing random searches necessary for management planning found this nest stand. It is mentioned in the present work largely for historical reasons. It has not received any consistent monitoring, because time and manpower was limited. There have been reports and sightings of goshawk in a few areas to the south running along FS Road 31, but to keep up with any of these outlying areas was beyond my capacity.

In the late 1980's, certain "DOG" units (Designated Old Growth) were surveyed and earmarked by the FS in an attempt to save some of the old growth ponderosa pine stands from logging activity. This management idea has since been abandoned and changed through the years, but there was a DOG unit down in this area near Elkhorn Cow Camp. Goshawk activity had been historically noted in this DOG area and that was part of the impetus to do a random calling here. The nest stand itself was a mature but small stand running along a portion of the drainage (which was actually a spring area); however, heavily logged lands surrounded it. In 2002 when visited, there were a lot of down and dead trees in this stand itself and the whole forest structure was deteriorating and did not have a healthy appearance.



*North up*



LOST CABIN

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
LOST CABIN -78	outlier	5731	PIPO	36	NW	nd	nd	nd

## NEST USEAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
78				A	I	P	DNC	DNC	DNC	DNC

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010
78	X		DNC	DNC	DNC	DNC	DNC	DNC	DNC

**Key:** A= active: I= inactive: X= nest gone: P= partially gone: R= partially built or rebuilt: U= usurped by another spp: DNC= Did not check: nd = No reliable data retrievable

**Post Fledging Area (PFA)**= 423 acres established according to FS records.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### LOST CABIN

#### 1996

1 MAY: In to do first nest check. This is the first time I have visited the area- nest found in 1995 by USFS personnel. Drove in the wrong way off road # 593, because the road that comes into the Lost cabin meadow is blocked off now. Walked into stand and found nest but it is unocc. Good mature forest in this drainage but several severe cut units surround area. This is south of the DOG units by Elkhorn Cow Camp, a place that I have seen/heard goshawk in other years.

15 JUN: In to do called search. Called stations along road #405 that runs through the drainage area. No sight/sound of goshawk .

#### 1997

3 MAY: Tried to get into nest but road is blocked at the main road 3770. Too long a walk in for today, will come back.

6 MAY: 1700 Walked into drainage from road #37 with Karen Haines. Nest still up but in bad shape. Walked drainage a little but no sight/sound of goshawk.

#### 1998, 1999, 2000, and 2001

*Note: All these years listed- the territory was never checked, so status is Unknown. This is way out to south of BVRD, not surrounding Bear Valley like other territories.*

#### 2002

24 MAY: Checking for first time in years. Walking in off road 31, taking the closed road #117 to walk to drainage. The nest #78 is gone, I believe the tree is even down. A lot of large dead fall has occurred in the area that was once the nest stand. If time, I will come in along road 117 and call all the way along into this stand. Some good habitat remains at the top of ridge, to S of stand, and possible alternative sites. But no new structures seen on this trip and no sight/sound of goshawk .

*Did not make it back down here again this year*

#### 2003

Sometime in JUN- TJF (*Ted Fremd*) and I camped down in this area. I searched the good stand a while and called a few stations at the top- to south. We were there for 1 day and night and did not see or hear any calling other than a GHOW adult training a juvenile one night.

#### 2004 to 2011

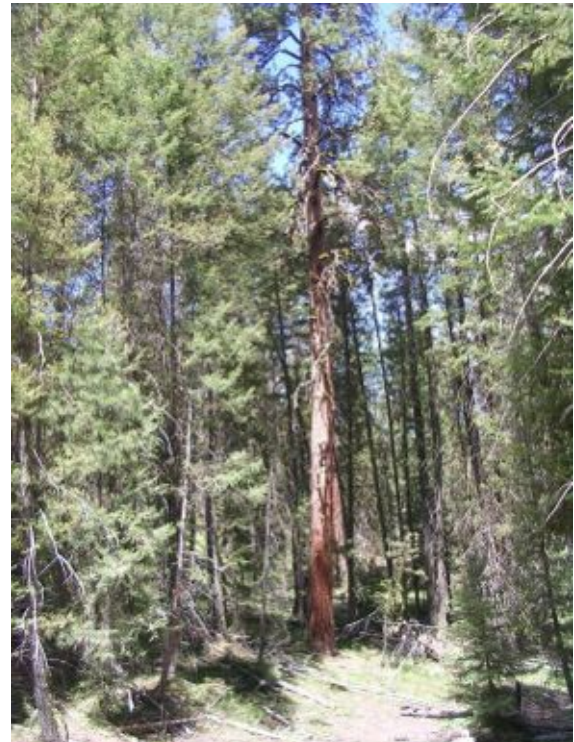
*Territory never checked these years.*

## SHIRTTAIL CREEK NEST SITES (SHTT <sup>55</sup>)

These nest sites were discovered in 2004 while doing an extensive re-survey of this region on the south edge of Bear Valley that runs along the forest service boundary. This region has always had goshawk activity through the years, incorporating Rail Creek Butte, Road 651, and Fisk territories. As stated elsewhere, I am certain that not all the alternative nest site have been discovered in this area.

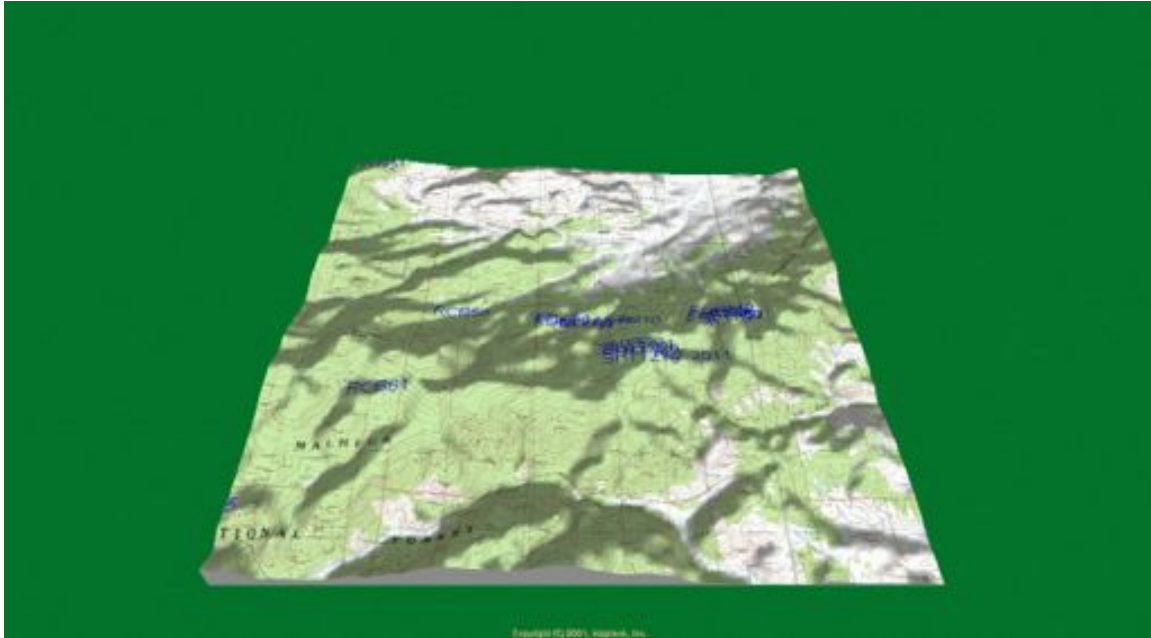
The Shirrtail nest cluster is marked and maintained in the database, even though I have not observed any of these nests being occupied by goshawks in the years that I have been monitoring them. This cluster consists of four nests consistent with goshawk habitat choices and nest construction. Since this draw was not even entered prior to 2004, these nests were most probably used during many of the “active” years that goshawks were observed in this region but no nests found.

Photos below of Nest tree #221,  
representative of the stands that  
surround this nest cluster.

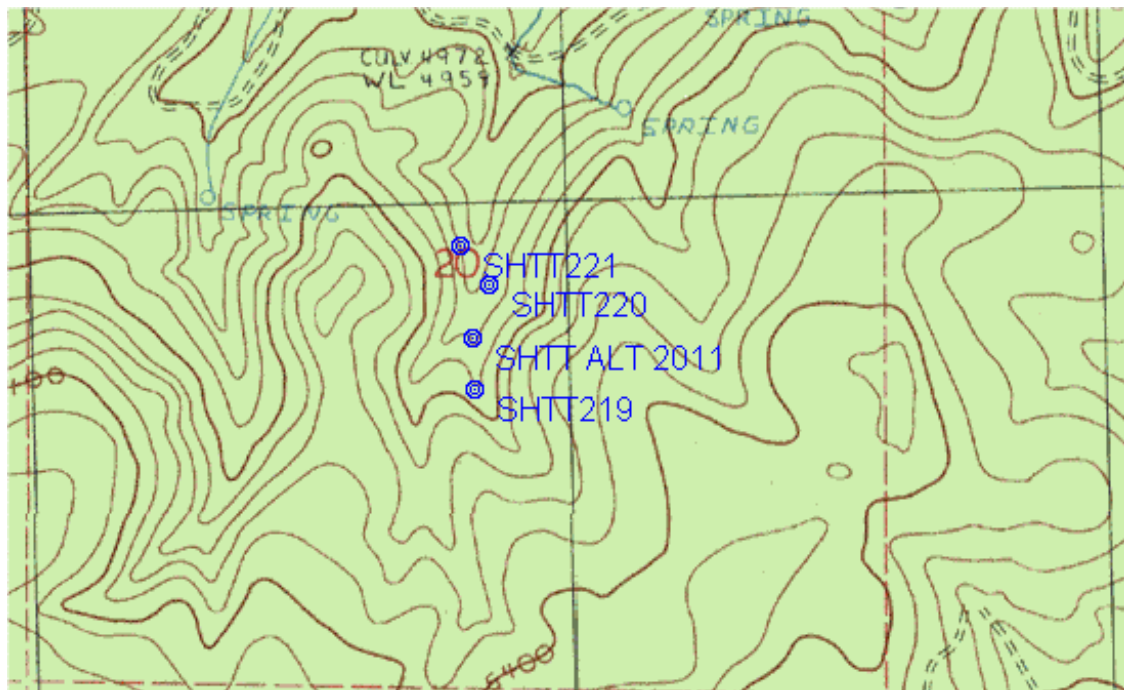




View of region that borders the south side of Bear Valley (top of map) with several of the goshawk territories



North up



SHIRTTAIL CREEK



## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
SHIRTTAIL CREEK- 219	TAG	5183	PIPO	27	nd	nd	196	20 to W
SHIRTTAIL CREEK- 220	NO TAG *	5112	PIPO	22-25	nd	nd	220	12 to NW
SHIRTTAIL CREEK- 221	TAG	5083	PIPO	41	130	60	348	20 to E
SHIRTTAIL CREEK- ALT 2011	TAG	5135	PSME	20	220	40	360	15 to NW

N#	2004	2005	2006	2007	2008	2009	2010	2011
219	I	I	P	DNC		DNC	X	X
220	I	I	P				X	X
221	I	I	I		I		P	P
Alt 2100								A

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

**\*No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### Shirrtail Creek Sites

#### 2004

Using photo 2001-156, I searched some of the suitable looking draws off road 3790 between Fisk and RCB. Found a new draw that is very used it appears. **Shirrtail Creek=SHTT**: New territory but won't put it into record until I find it occupied some year. There are 3 good nests in this draw. It appears that this is probably used more than the draw of Rd651 –perhaps that we first found the alternative site, not the really used area. It is good to see the photos for my search this year.

#### 2005

3 MAY: In to check this area for nesting activity. Unused- all 3 "x" nests are in partial condition (*now #219,220,221*), just stick platforms now. Searched up draw to furthest nest site along the game trail that leads up here. No sight or sound of goshawk.

#### 2006

30 MAY: In for first check. Walked draw and no sight or sound of goshawk. The nest in first PIPO #221 is still up, but other 2 are nearly gone.

#### 2007

*Did not visit/check this year.*

#### 2008

30 MAY: In for first check. Unused- walked the whole draw, but no sight or sound of goshawk.

4 JUN: NOTE- Saw a goshawk flying between Rd 651 and Shirrtail area this year, so in this bad year this was one of only 3 goshawk seen. There has been no response to caller at all.

#### 2009

*Did not visit/check this year.*

#### 2010

6 MAY: In for first check. Walked stand again this year. No sight or sound of goshawk. Only first nest is partially up- other gone.

#### 2011

14 July: In to do measurements and found a new used nest- Alt 2011. Active this season, with down on rim and wh/wa on ground, but no ID of species. Goshawk or Owl? So, this cluster is still in use even though most other nests are gone now.

## SUGAR CREEK

SUR <sup>54</sup> Year	Nest Num	Date Nest Found/or First Visit	Incub Obs	Assumed Status	Num fledged	Notes
1992						
1993						
1994						
1995						
1996						
1997						
1998						
1999						
2000		6/25/00		UNO		
2001		6/6/01		UNO		
2002		5/8/02		UNO		
2003				DNC		
2004				DNC		
2005				DNC		
2006				DNC		
2007				DNC		
2008				DNC		
2009				DNC		
2010				DNC		

Status of territory use by year: **DNC** = Did not visit/check this year; **S** = Successful; **F** = Failed; **S/F** = Final status of fledglings unknown, but goshawk incubating on nest observed; **OCC** = Occupied but final fledgling status unknown, but some evidence of breeding observed; **UNO** = Unoccupied for this year; **A** = Active use of territory by goshawk, but no nest found; **Usurped** = Nest used by another species of bird.

I initially went to search this drainage because of a goshawk sighting by FS personnel at the junction of road 128 off of road 011. In searching this draw I found the nest; however, this structure has never been used in the few years that I checked on it. In 2002, some



hikers/packers, when coming out of the McClellan roadless area via this southerly exit, reported to Karen Haines (the wildlife biologist at the time) hearing goshawks in this area; however, no search was conducted at that time. No other nest sites have been found in this draw. This drainage that runs north of the nest into the roadless area is potentially all good

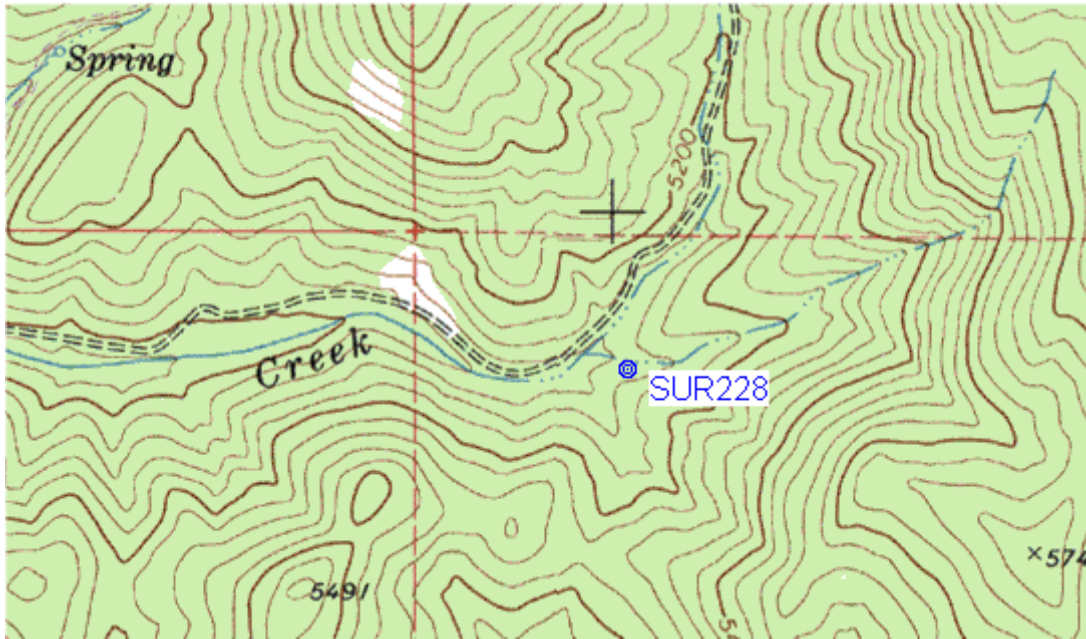
Photo left: Area of nest tree #228, tree was a dead fir within this clump of trees.

possible habitat.

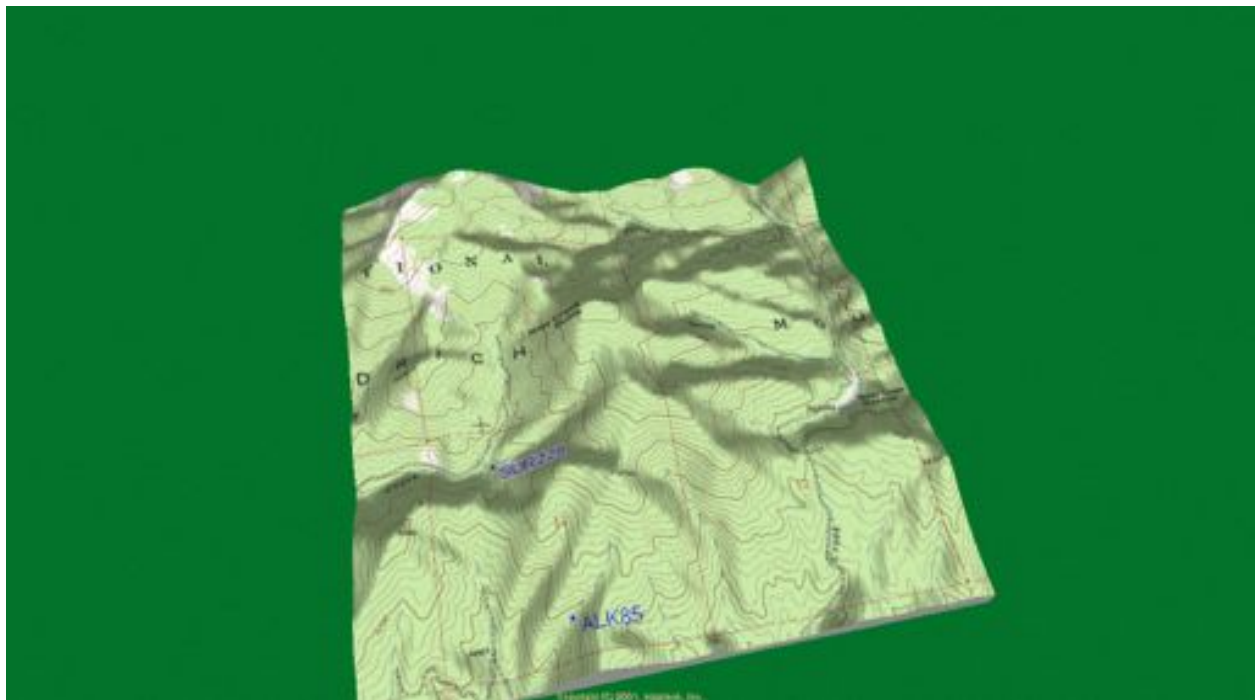
As stated in the field notes, this could be an alternative site for the Alkali territory. Sugar Creek area is directly north over the ridge from the first nest found in Alkali (#85). There was also an old goshawk nest reported in the Riley Creek area in the FS records of 1980s. This old nest area to the east of Sugar Creek draw, when I briefly walked it, was logged and I did not identify much suitable habitat there.



Photo above showing the area of nest tree #228 with the association of aspen trees in surrounding stand.



North up



SUGAR CREEK

## NEST AND NEST TREE DATA

		ELEV	Tree	DBH	Nest ASP	Nest HT	Strike	Dip degree
SUGAR CREEK- 228	NO TAG *	5135	PSME	nd	nd	nd	240	8 to NW

## NEST USAGE AND LONGEVITY THROUGH YEARS

N#	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
228									I	P

N#	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
228	P	DNC	DNC	DNC	DNC	DNC	DNC	DNC	DNC	GONE

**Key:** **A**= active: **I**= inactive: **X**= nest gone: **P**= partially gone: **R**= partially built or rebuilt: **U**= usurped by another spp: **DNC**= Did not check: **nd** = No reliable data retrievable

\***No tag**= Tree has fallen down or been cut- OR - exact locality data could not be reliably recovered. Utm designates the tree cluster in which the original nest tree resided.

**Post Fledging Area (PFA)**= No acres established according to FS records to which I have access. In fact I do not think this has even been established as a viable goshawk territory .

## FIELD NOTES

*Regarding field notes: These are the personal field notes of SJR. Notes are "as is", transcribed directly from the original handwritten field notebooks. They are a log of observations. Any comments that I have added for clarification of this manuscript, not written in the field notes, are in italics.*

### SUGAR CREEK – MINERS CREEK- POSSIBLE GOSHAWK SITES

#### 2000

Notes for Alkali Creek territory for this year:

25 JUN: I went to check on a possible new site – or an alternative for Alkali – up Sugar Creek. This is just north over the ridge from the Alkali nest. A goshawk was reported to be at the road junction of 128 (see map) and green/black flagging had been set out. I found a half built nest in an old snag. I marked it in GPS as SUR 00 for now. I have to ask Karen who found this and what time of year they were here. It is possible that they disturbed the cycle of the nest building. I walked the drainage and did 4-5 calls but got no response. Nice drainage in places, lots to explore if this is the alternate to Alkali. I met Jim Hammett, Pat, and Pattie Moss on horseback coming out of the road less area that day.

#### 2001

6 JUN: In for initial check. Nest 00 (*now #228*) is ½ gone now and the small fir that it is in has fallen against its neighbor tree and will be on ground soon probably. I searched a ways up past this nest to where I am at the bottom of a huge clear-cut, circled back over ridge to the Sugar Ck drainage, searching stand as I walk back to car. No sight/sound of goshawk, nor any new structures seen. Did get called at by a RTH up at top of the clear-cut ridge.

#### 2002

8 MAY: Sarah Herve took over monitoring some of the Murderer's Creek route territories, such as this one. Took her out to orient her to areas and nest sites. We drove up the road and parked at the road#128 sign to walk into nest. The is just about gone now, wouldn't really recognize it if the fallen tree hadn't been in place. SH will scout out this whole area, and that of Miners Creek sometime later.

K Haines had reported that some hikers that were coming down this drainage from the road less area had seen a vocal goshawk. I had asked SH to call this drainage sometime. At end of season, I learned that there was a miscommunication and SH had concentrated her time on Miners Creek instead of here. I do not believe that any quality calling was accomplished here this season. Need to do this next year.

#### 2003 – 2010

*Did not check/visit this territory.*

#### 2011

25 AUG: Drive into nest stand- it has little changed. The stand of PSME that contained the nest tree is more deteriorated with more down and dead on ground. The unusual aspect of this nest site is that these PSME are included with some large aspen. Took a picture of nest area just because of this aspect. Put a marker on a large PSME that was adjacent to the old nest site for reference.



## Discussion and Thoughts

One of the main motivations for the ecological research and monitoring the status of Northern Goshawk populations in the 1990s was to develop a predictive model with which to manage forest resources that did not unduly compromise aspects of the ecosystem the species inhabits. Much information has been generated in the last few decades about the life habits of goshawks and the factors that have an impact on their populations (habitat preferences, prey species, weather, and competitors). For comprehensive reviews of the status and management of goshawk to date, the reader is referred to these specific papers: Squires and Kennedy 2006, Reynolds et al. 2006, and Boyce et al. 2006. However, as with any complex interrelated system, predictability of the effects of any resource management activities on the local level is still rather evasive.

Below, observations from BVRD that inform some of these issues are briefly addressed.

### *OCUPPANCY OF TERRITORIES*

Local resources managers often demanded a definite answer as to the occupancy of territories when considering any treatment or activity around a territory. But this parameter of determining occupancy in Northern Goshawk is rather difficult to determine with a high degree of certainty because of their secretive behavior in structurally-complex habitats, their low breeding density, and annually variable breeding rates (DeStefano et al. 1994, Reynolds et al. 1994, Reynolds et al. 2006).

On the BVRD, an examination of occupancy rates for the most consistently monitored years (1992 to 2003) (Figure 12) reveals that total re-utilization of territories averaged 60% (ranged from 41% to 83%). This corresponds to that of other study areas- 62% in northeastern Nevada (Bechard et al. 2006), 63% in northern California (Woodbridge and Detrich 1994), 50% in southeast Idaho (Patla 1997). The re-usage of the same nests from the previous year averaged 26% (ranged from 4% to 58%); and this figure corresponds to that found by Reynolds et al. (2005) of 36% during the years of 1992-2002.

Reynolds et al. (2005) bring up some salient points that managers should factor into their analyses. Detectability of goshawks is highly variable among individuals of the species because of extensive temporal (year-to-year) and spatial (among territory) variation in breeding. Detection is difficult also because of the number and dispersion of alternate nests, and the frequency of movement among them. They found that “annually, 50-75% of egg-laying goshawks moved to alternate nests within their territories, and in some years more than half of these moves were to alternates unknown to us, some of which were more than 1.4 km apart” (pg.283, Reynolds et al. 2005). They also recommend that intensive and repeated searching of territories be employed in large study areas over at least an eight year period. My observations on this study area corroborate all those statements above. It was only after repeated searches over many years that the extent of a nest cluster within a territory was discovered, and there were long hiatuses between usages of many of these areas.

In reality, area managers cannot be confident that a territory is unoccupied, only those specific located nests may not be used in any given year. Therefore, it is important to search the total area where nests are located and at least a 1 kilometer wide survey of the surrounding area, where feasible, or at least the most suitable habitats that are within that distance. The practice of

only checking the known nest sites may cause unoccupancy determinations to be in error, especially when people searching the sites have little experience locating goshawks. To determine occupancy, it is important that the searches be done at the correct time in the breeding season (post incubation) when the detection rates are better (Kennedy and Stahlecker 1993, Speiser and Bosakowski 1991, Kimmel and Yahner 1990). It is preferable, in this region, to only start thorough searches in the latter part of May (see Figure 3 in regards to hatching dates). On Malheur NF, this means that searches prior to this time may result in incorrect assumptions of unoccupancy. Most of the time I would start my searches (silent without using the caller) the very end of April in order to find incubating females; and, in some years I was asked by the FS to do searches earlier than late April because of early management activities. I observed that the females, on the average, over time, would not move off the nest at this early stage in breeding thus making detection much harder. The lesson is that this species is fundamentally elusive; therefore, any activities or treatment of these areas should always proceed with caution.

### *FOREST MANAGEMENT OF TERRITORIES*

In 1993, the USFS wisely began implementation of goshawk guidelines in their planning process, based on work by Reynolds et al (1992). On this forest the attempted directions for management (as specifically stated in the “East Side Forest Plan Amendment 2”) is to protect every known active and historically used goshawk nest site from disturbance; and that 30 acres of the most suitable nesting habitat surrounding all active and historical nest trees will be deferred from harvest. A 400-acre PFA has been established around a majority of the known nests sites but not all.

Several observations discussed in the literature deserve attention on the Malheur NF. It has been established that forest management, such as controlled burning and thinning, may improve *or* degrade habitat depending on implementation, especially as they affect the density of large trees and canopy closure (USDI Fish and Wildlife Service 1998). Not surprisingly, forest management that reduces the size of nest stands may decrease occupancy rates (Woodbridge and Detrich 1994). The recommendations proposed by Reynolds et al. (1992) that are now established as “goshawk management guidelines” still remain an untested hypothesis (Squires and Kennedy 2006). Reynolds et al. (2006) understandably states that “...forest management is fraught with uncertainties and that managing goshawk and prey habitat is a long-term proposition. What is needed is an in-depth analysis of implementation projects as they come on line to make preliminary judgments about what works, what does not, and how success should be measured” (pg. 311, Reynolds et al. 2006).

Most of the management activities (timber harvest, thinning, etc.) on this study area at the nest stand level have proven to be deleterious to occupancy of those nest stands. Even though the directives in the “East Side Forest Plan Amendment 2” (C. Kranich, pers. com.) is to defer from harvest 30 acres of the most suitable nesting habitat surrounding all active and historical nest trees, this has not been implemented (for various reasons deemed by forest managers at the time) in all cases. In these cases (for examples see Burntcabin Creek, Dipping Vat, LP Dog, Steagall Springs), nesting goshawks moved to adjacent areas or were seemingly extirpated from that nest stand. Though the harvest prescriptions may change in the future, I have observed that the overall management activities in the goshawk nest stands and surrounding areas have had the effect of reducing the canopy layer and opening up the forest structure. Goshawks are more likely to be found in areas with a high percentage of mid-aged to late succession forest in closed

canopy conditions. A reduction in large trees and canopy cover, either through short-term high volume logging or repeated entry into stands over time, reduced the suitability of those stands for occupancy by breeding goshawks (DeStefano et al. 2006).

There is a need for long-term monitoring of the results of these management procedures; however, funding and personnel will probably continue to be deficient for this forest, particularly in the current budget climate. In the 32 core territories with the longest monitored record, only 13 have remained relatively unaltered by any timber activity or disturbance other than natural occurrences (e.g., wind throw, deadfall). Seventeen have been altered by cuts in or around the nest clusters, and two have been burned in the Flagtail Fire of 2002. There are many aspects that make this a prime study area to compare past conditions of nesting stands to those of the future. A majority of nest stands and PFA areas on BVRD have received reasonably thorough quantitative assessments concerning vegetative and structural character. The core territories were measured and analyzed structurally (e.g., stand age, canopy closure, live trees/ha, basal area, live stem density, quadratic mean diameter, stand density index) in 1993-1994 (Daw 1997, McGrath 1997, Haines 1995). Several photos of nest stands marking the conditions in 2010-2011 and the measurements presented in this work also give a snapshot of the conditions of this time. I offer that the observations accumulated over these years *could* be used as a base for a long-term assessment of the management practices on these stands if funding and interest manifests in the future.

#### *PREY BASE*

The relationship of goshawks to their prey has been established in many studies to date (Drennan 2006, Wiens et al. 2006a, Salafsky et al. 2005, Keane et al. 2006, Reynolds et al. 1992). The abundance and availability of prey are important attributes that elicit demographic and population responses (Squires and Kennedy 2006, Doyle and Smith 1994, Ward and Kennedy 1996, Dewey and Kennedy 2001). Thus an ecosystem-based conservation strategy for goshawks is desirable (Reynolds et al. 2006).

On the BVRD, DeStefano et al. (2006, Table 4) have determined that the prey, by species frequency, consisted of both birds and mammals in equal proportions - about 50% each. In composition, prey was dominated by Northern Flickers (20%), American Robins (12%), and ground squirrels (12%). However, by biomass, birds comprised about 35% and mammals 65%. Rabbits (*Sylvilagus spp.*) and hares (*Lepus spp.*) made up the highest percentage in biomass (21%) although apparently consumed relatively infrequently; Northern Flickers provided about 18%, ground squirrels about 14%, and tree squirrels about 11%. Abundance as well as *availability* of prey is important to hunting goshawks. Reynolds et al. (1992) and Drennan and Beier (2003) have shown that the preferences in goshawk foraging habitat are likely determined, in part, by habitat characteristics that influence their ability to access prey as well as prey abundance; therefore, forest management practices may greatly influence the availability of these prey species thus being a determining factor in the long-term persistence of the species (Kennedy and Andersen 1999).

Studies exist that connect fluctuations in reproductive output in goshawk to four- and ten-year prey cycles in northern North America (Doyle and Smith 1994, Erdman et al. 1998, Mueller and Berger 1967, Mueller et al. 1977, Newton 1979, Watson et al. 1998). Annual variation in local goshawk diets may stem from annual variation in prey abundance associated with eruptive or inter-annual fluctuations in species such as snowshoe hares, red squirrels, and grouse (Doyle

and Smith 1994). Although the goshawks on BVRD have adopted a generalist foraging strategy, using an apparent even distribution of bird and mammals, it is possible that cycles in prey populations in a few of these species may have affects on goshawk breeding in certain years. For instance, in Oregon, Nuttall's cottontail (*Sylvilagus nuttalli*), which comprises a large proportion of biomass in prey analysis (Cutler et al. 1996 and DeStefano and Cutler 1998), is greatly impacted by drought in depressing the production of young - either through cessation of breeding or through resorption of embryos (McKay and Verts 1978).

Observation of the variable usage of territories suggested that perhaps a "fallow field" mechanism might be in play here. I developed this concept (as farmers periodically retire a field from production in order to replenish nutrients) to suggest that perhaps the continued exploitation of the prey base in one area may deplete that resource; thus, goshawks will not nest in that territory for years until a prey base has revived. This most notably would be effective in the "less" suitable habitats that goshawks will occupy on BVRD. Although Boal and Mannan (1994) point out that a high number of prey species (as goshawk use) may buffer the effects of fluctuations or absences in individual prey species populations thus eliminating the need to "rest" a territory while a prey base regenerates, the "fallow field" idea remains a testable hypothesis.

### *INFLUENCE OF WEATHER*

There are studies that evaluate the effects of extreme precipitation to nesting success in many raptors species in terms of limiting foraging success, reducing prey availability, or causing direct mortality due to exposure (Olsen and Olsen 1992, Franklin et al. 2000). Effects on goshawks (particularly in the early spring) have been correlated to the amount of precipitation and number of rain days received (Kostrzewa and Kostrzewa 1990, Penteriani 1997). It has been suggested that warm spring temperatures have a favorable effect on goshawk reproduction (Patla 1997). Keane et al. (2006) present a well documented study of the association of reproduction, weather effects, and variation in prey as they related to goshawks breeding in northern California. Wiens et al. (2006a and b) addressed the issue of extreme rainfall during the fledgling dependency period in northern Arizona to see if it negatively affected juvenile survival directly; but unexpectedly they observed that it was not closely associated with post-fledgling or post-independence survival. As with assessing the affects of the prey base on the populations, any correlation with weather will prove to be annually variable and fluctuating in different ranges of breeding goshawks. In the future, this study area (with the accurate Snotel station providing online records) could provide valuable baseline information on assessing the inevitable effects of climate changes on the health of nesting goshawks and their prey base in the interior northwest.

There is a wide variability observed in the patterns of breeding goshawks in relation to weather on the Malheur. In qualitatively contrasting yearly precipitation to productivity data on BVRD (during the years with substantial productivity data up to 2003), results are inconclusive, varying by each year in terms of supporting causal factors. Some of these observations are:

- In 1993 and 2003 with the *highest* failure rates, there are relatively higher numbers of precipitation days and amounts (precipitation in inches) in the early spring (March and April combined): 1993- 26 days with 6 inches and in 2003- 29 days with 5.9 inches (see Figure 5 and 6 weather data and Figure 13 productivity and precipitation data).

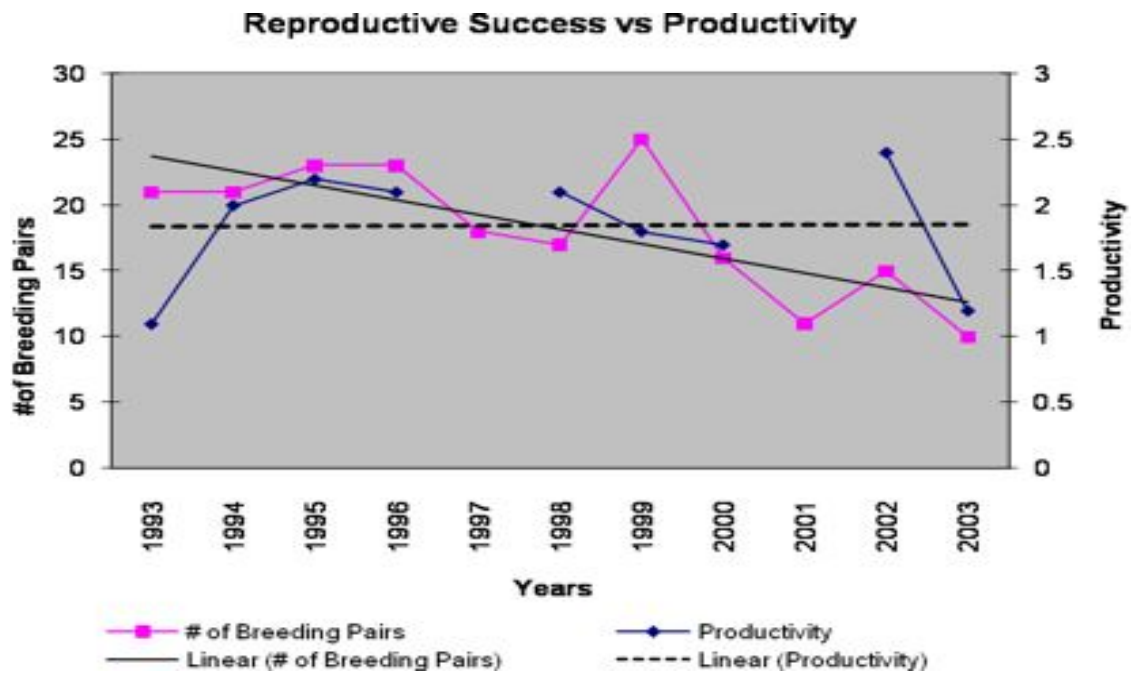
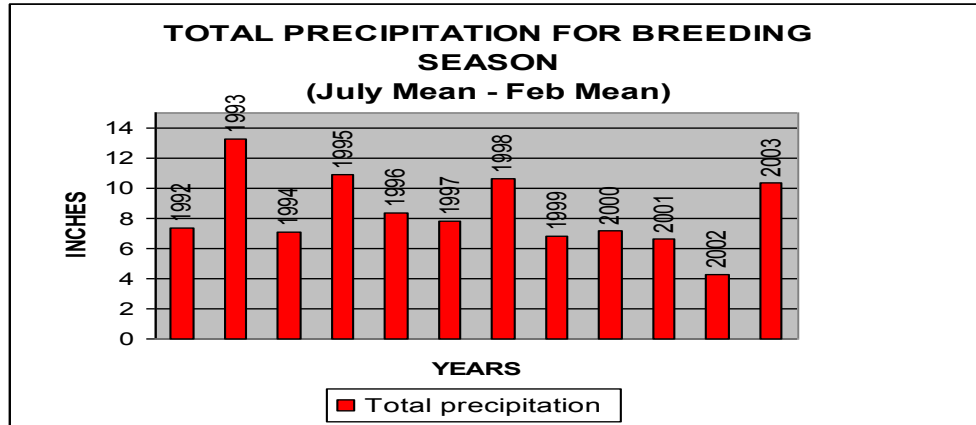
- However, in 1995 – which had the *lowest* failure rate - there were a *higher* total number of precipitation days (32) with an increase of 5.9 inches.
- In 2002 which harbored the lowest total precipitation rates for these years, the goshawks had a record productivity that year with a low number of nesting pairs.
- In 2008 with a low number of precipitation days of 19 days with only 3.3 inches recorded for March and April, not one nesting goshawk was found that year or many even seen.
- In 2011, again with a high number of precipitation days (31 days with 5.9 inches) a good core of 11 territories was seemingly successfully occupied.

*(The statements above that are post 2005 are purely observations, for the searches of territories were truncated and no definite productivity data was obtained for 2008 or 2011.)*

**Figure 12**  
**Number of Territories used by year and disposition of those territories in the next year**  
 (Data used from the most consistently monitored years in the study)

YEAR	# TERRITORY USED (S, F, S/F, A, OCC)	DISPOSITION OF THOSE TERRITORIES IN THE NEXT YEAR				
		REUSED THE SAME NEST	USED ALTERNATE NEST	OCCUPIED BUT STATUS UNKNOWN	UNOCCUPIED / MOVED	% UTILIZED IN NEXT YEAR
1992	12					
1993		58% (7 of 12)	25% (3 of 12)	na	17% (2 of 12)	83% (10 of 12)
	22					
1994		4% (1 of 22)	55% (12 of 22)	9% (2 of 22)	32% (7 of 22)	68% (15 of 22)
	23					
1995		4% (1 of 23)	65% (15 of 23)	9% (2 of 23)	22% (5 of 23)	78% (18 of 23)
	25					
1996		44% (11 of 25)	12% (3 of 25)	4% (1 of 25)	40% (10 of 25)	60% (15 of 25)
	29					
1997		17% (5 of 29)	24% (7 of 29)	24% (7 of 29)	35% (10 of 29)	66% (19 of 29)
	27					
1998		22% (6 of 27)	15% (4 of 27)	15% (4 of 27)	48% (13 of 27)	52% (14 of 27)
	25					
1999		36% (9 of 25)	32% (8 of 25)	na	32% (8 of 25)	68% (17 of 25)
	28					
2000		25% (7 of 28)	21% (6 of 28)	11% (3 of 28)	43% (12 of 28)	57% (16 of 28)
	21					
2001		33% (7 of 21)	14% (3 of 21)	10% (2 of 21)	43% (9 of 21)	57% (12 of 21)
	15					
2002		33% (5 of 15)	7% (1 of 15)	7% (1 of 15)	53% (8 of 15)	47% (7 of 15)
	17					
2003		6% (1 of 17)	29% (5 of 17)	6% (1 of 17)	59% (10 of 17)	41% (7 of 17)
	15					
	MEDIAN	25.00%	24.00%	9%	40.00%	62%
	RANGE	4% to 58%	7% to 65%	4% to 24%	17% to 59%	41% to 83%
	AVERAGE	26%	27%	10.5%	38.50%	60%

Figure 13: Precipitation chart and Productivity Graph for years 1993-2003 on BVRD





## INTER-SPECIFIC INTERACTIONS

Interspecific competition for habitat and prey are important attributes of goshawk fitness, but has received scant attention (Squires and Kennedy 2006). It is common for goshawks and other raptors to nest close to one another (Reynolds and Wight 1978). However, like many species, goshawks may undergo competitive exclusion from nest areas by other raptors and there have been many examples of different species usurping goshawk nest sites within this study area. Eighteen territories (~ 33%) have been adaptively utilized by other avian nesters, with variable goshawk responses to the different species.

RTH (Red-tailed Hawks, *Buteo jamaicensis*) occasionally displace goshawks from nesting stands. Despite the absence of marked birds on this study to ascertain if they are the same individuals, observations suggest that RTHs are also tenacious in returning to certain nests through the years. For example, at Seneca 701 (Strawberry Route), a RTH has used nest #7 (the original goshawk nest found) for seven of the monitored years – displacing the goshawk to a site 552m away in 1995 and again 898m away in 1997. There are two other territories that have had RTHs nesting in a known goshawk nest, and goshawks have not returned to these areas. La Sorte et al. (2004) compared habitat differences of RTHs and goshawks at two spatial levels in northern Arizona. They found that RTHs tend to nest adjacent to forest openings and in relatively open sites; were associated, on average, with steep north-facing slopes; and that the fragmentation of the forest was greater around RTH nests. Importantly, this indicates that habitat fragmentation has the potential to favor RTH populations over goshawk in nest site competition.

GHO (Great Horned Owls, *Bubo virginianus*) will also displace goshawks by taking over a territory, either by actually occupying a known nest or nesting proximal to goshawk stands. As a competitor, GHOs achieve a measurable reproductive advantage in two ways. They initiate their breeding season up to two months prior to goshawks (Personal observ., Ehrlich et al. 1988, Stokes & Stokes 1989) and because of their predatory killing capacity and abundance in the North American range of goshawks (Orians and Kuhlman 1956, Houston 1975). A goshawk will rarely, if ever, reoccupy any nest structure that was used - in any year - by a GHO. Observations also suggest that once a GHO uses a goshawk nest, it may take several years before any part of that territory is used again by the goshawk population, even if the habitat structure is still intact (i.e., it has not been cut or altered in any way). In the BVRD, new goshawk sites are typically reestablished 1 to 1.5k away from the stand used by a GHO (but not always in the same year).

In my experience the most interesting interactions with another raptor species have been those with GRGR (Great Grey Owls, *Strix nebulosa*). Goshawks are territorially tolerant to GRGRs. Bull et al. (1988) reported that GRGRs used goshawk nests 68% of the time on her study area in northeastern Oregon. There are several territories that have harbored GRGRs on BVRD, including five where I have observed goshawks co-nesting in the same year with GRGRs occupying an alternative nest in the same stand. In one territory (Geary- Middle Route), GRGRs were present for eight years, and in six of those years, the two species were observed nesting close to each other (distances of 273m, 138m, and 198m between nests). Squires and Kennedy (2006) mention a report of this type of nest sharing in Minnesota, but with a lower sample number. It would be worthwhile to sample the prey base of these five territories in contrast to other goshawk territories to see if the tolerance of nesting goshawks with GRGRs is due to different food sources. GRGRs depend on small mammals, reportedly mostly on voles, for their food source (Stokes and Stokes 1996, Ehrlich et al. 1988). In any case, the mechanism of this

association should be more carefully examined. In several of these occurrences, the goshawks failed to successfully fledge any young suggesting that this association may be causal and not merely coincidental to breeding failures of goshawk.

One of the surprising observations associated with other species was finding CAGO (Canadian Geese, *Branta canadensis*) using goshawk nests. This occurred at two territories (OG238-Middle Route and Luce Creek-Murderer's Creek Route). At OG238, this goshawk nest (in a large PIPO, dbh 30" with a height of about 50 feet) was first arrogated by a GHO in 1999, and then was used in the next two years by CAGO. Subsequently, a goshawk pair relocated 1.1k away in 2002. At Luce Creek, CAGO used a nest in a large LAOC, 27" dbh with a height of 65 feet. Both of these trees were at the edge of the nest cluster that directly adjoined large open meadows. The normal nesting habits of CAGO are usually reported as ground nesting next to bodies of water or occasionally using man-made structures. There is a mention in Burrows and Gilligan (2003) that they will use old eagle or osprey nests close to water. However, it was a novel and very surprising observation to find CAGO nesting so high up in a large tree far from any bodies of water.

### *OBSERVATIONS OF LOCAL BEHAVIORAL TRAITS*

The following "local traits" probably are typical of many populations of goshawk. While I have observed a wide variety of responses to the observer when goshawks are defending nestlings, it is clear that most become habituated to the observer. This "habituation" probably corresponds to the same individuals being present over multiple years. In other areas where breeding goshawks have been studied, it has been found that goshawks exhibit high levels of year-to-year fidelity to breeding territories and to mates (Doyle and Smith 1994, Woodbridge and Detrich 1994, Reynolds et al. 1994, Squires and Ruggiero 1996).

Intraspecific variability of territory defensive behavior is marked. Some females were timid and would rarely alarm call when I entered their nest stand, while others were very aggressive, stooping so close, that I had to drop to the ground. Several of these types of encounters can be heard on the recordings. But what is of more interest to me is that, through the years entering these stands, the aggressive responses towards my presence greatly diminished to where I was rarely being stooped by any goshawk at all. I attribute this to habituation, i.e., the individual bird seeing the same neutral disturbance year after year (a particular hominid walking through the nest stand every year). This is particularly notable with the East Scotty Creek (Burntcabin Route) banded female. As heard on the recordings of 1995-96, she was a very aggressive bird upon entering the nest stand in the first year; but she drastically calmed down through the next several years. The last year she was here, I was able to approach her, on her nest with nestlings inside, to within 30 feet of the nest tree. We just calmly watched each other for 5-10 minutes before I left. I use this example because I am certain this is the same individual (because of her band number); however, this type of phenomenon occurred at many territories.

It also appears that goshawks in this area become habituated to the same broadcast call. In the 1990s, a generic non-specific tape recording of goshawk alarm calls was used to find nesting goshawks. This is the normal protocol and is effective during the first few years of work in a new region. However, after using this same call for several years, the effectiveness of eliciting a response diminished. I stopped relying on this tape by around 2000 after noting the lack of responses. I subjectively tested this generic call by calling in areas where I knew goshawks were nesting and I did not get any response. It also seems more effective to use the

local dialect of calls for the particular region. The response to these dialects was notably better than the response to a generic call. In 2005, when I started using the locally recorded digital calls, I was effectively eliciting many responses again and from even further of a distance from the nest than expected. These observations could easily be validated by field tests. I strongly recommend that in the future, during repeat surveys for goshawks in this region, local recordings be obtained (or use the high quality sampled calls provided herein) and use digital broadcasting equipment for a clearer, more accurate goshawk call representation.

Observer voice recognition of individuals is a promising field of research. Although a voice-pattern analysis has not been conducted on recordings (such as my 1995-1996 media), both analog (careful listening) and digital (computer sonograms) data support this observation. I have documented in my notes that at several territories the same individual was noted to be occupying that territory in successive years. Their vocal patterns were distinctive in some way, such as a raspy quality, a dropped first tone, a short-burst cadence, or a catch or squeak in mid call. There are definite vocal differences in the female and male, with the male having a lower pitch and slightly slower cadence than the female. This is in direct contrast to the statement in “The Handbook of North American Birds” (Palmer 1988, pg.361) that the male has a higher pitch. Perhaps this represents a geographical difference between the eastern and western populations, or represents a clinal variability in intraspecific calls. It seems that a majority of the data on Northern Goshawk in the handbook is gleaned from studies done in Europe or eastern North America. It would be an interesting study to document a clinal variation in vocalizations between the different populations of goshawks that have been the basis of studies since the 1990s.

#### *FUTURE TRENDS IN MONITORING*

Managerial concern regarding the status of the Northern Goshawk will have to continue indefinitely (Crocker-Bedford 1998, DeStefano 1998, Kennedy 1998, Smallwood 1998). It has been the case that funding for goshawk research waxes and wanes which is counterproductive to implementing the long-term, large-scale studies needed to evaluate goshawk demographics (DeStefano 1998). Goshawk management is a complex issue because management agencies need concerted efforts to monitor goshawk responses to their management actions (Squires and Kennedy 2006). The value of long-term monitoring of the Malheur population is evident in showing the extent to which goshawk nest clusters shift and vary through the years. The value of this long-term knowledge makes it possible and necessary to maintain and protect those PFAs already established, as well as assessing surrounding areas for replacement of those acres if they are adversely impacted for some reason. Seeing the movement of goshawks in relationship to disturbances over a long-time frame (e.g., Dipping Vat and Jack Creek- Izee Route), gives managers added impetus to evaluate activities in the surrounding area.

The biological and behavioral patterns reported here would be invisible using only a 2-4 year period - as is usually the time frame for most funded academic endeavors. As Reynolds et al. (2005) determined that over at least 8 years was required to obtain valid information regarding territories; my data suggest that more than 10 years is necessary. This is especially important, as in this case, where the number of people available to search for breeding goshawks is very limited.

Much of the current information on goshawks has been obtained by monitoring nesting activity at local scales (Hargis and Woodbridge 2006). Local monitoring studies focus on trends

in reproduction which indicate extensive temporal and spatial variation and are difficult to interpret in the absence of survival data (McClaren et al. 2002). In addition, many of these efforts are in a format such as this, the “grey literature”, although the information presented here has been obtained with a consistency and fidelity to standard protocols as developed in the field.

After thorough review of goshawk ecology as we understand it to date, Squires and Kennedy (2006) make some recommendations as to the future direction of monitoring. The best current method available for monitoring goshawk population performance remains a program of monitoring trends in site occupancy. They recommend using dawn vocalizations surveys as described by Dewey et al. (2003), which have a demonstrated success on BVRD. They also suggest estimating detection probabilities of these surveys with recent analytical procedures described by MacKenzie et al. (2003). A bioregional monitoring program based on this latter approach is described by Hargis and Woodbridge (2006). This is a proposed monitoring on a coordinated bioregional scale (688a primary sampling units or PSUs) that will detect presence or absence of goshawks in a bioregion. They suggest this method might be practical for federal agencies that have limited personnel and time; but also note that on this scale it is not effective in investigating effects of management treatments. These types of large-scale studies should not replace, but be in concert with, local monitoring projects. The area of this study on the Malheur NF is at the interface of two of their proposed bioregions, the Intermountain Great Basin and the Northern Rockies-Blue Mountains; thus making this a prime region to coordinate such an endeavor.

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This project started out with a cadre of students and academics and has been supported by several forest service employees that have been most helpful through the years. It has primarily been an individual effort, unlike other studies in the literature that have had adequate funding and *many* field assistants through the years. Although the quantity of data that can be gathered is certainly less than that obtained through a group effort, an advantage is that these have been consistently obtained and there was little individual worker deviation in the established protocols as used in other studies of monitoring local goshawk populations.

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Finally, my tenacity and attachment to this project is fully due to my love and appreciation of these “ghosts of the forest”. I am honored to have been able to watch and share some of their lives in these forests for this short time.

This presentation of material gather throughout these years does not come close to the true effort involved here. Perhaps those few “field people” can understand the efforts involved, but it seems those types of people are rapidly becoming relicts. This work, if taken up in the future, requires great generosity with time; discipline and deep patience to stay with it when things are not funded nor exciting; and exertion to not give up when you are tired of walking miles in the same areas with no confirmed observations.

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