

## **Birds and Burn 2002 Field Project Summary**

### **Purpose:**

See attached appendix I (Prescribed Fire Strategies to Restore Wildlife Habitat in Ponderosa Pine Forests of the Interior Mountain West).

### **Study Areas:**

The four study sites are located in the Piedra river drainage. See attached appendix II. These sites are located in the geographical area of the Pagosa Ranger District identified as the Piedra area. This area, which is defined in the Land and Resource Management Plan for the San Juan National Forest consists either of wilderness, wilderness study area, research natural area of proposed wild and scenic river corridors. It has a management designation of 8A or 8B. Management area 8A emphasizes maintaining or improving character in pristine wilderness recreation setting with very high levels of solitude and opportunities for challenge and risk. There is no perceptible evidence of human use. Management area 8B emphasizes maintaining or improving wilderness character in a primitive recreation setting with high levels of solitude and opportunities for challenge, risk, and self-reliance. There is little visitor regulation and a low-density trail system.

Sites considered for prescribed fires for the purposes of this study include:

1. Sheep Creek North (SCN), R5W, T35N, Sec. 6 and 7 (portions of). SCN contains 486 acres (197.4 hectares). Elevation range of study site 7400' to 8400'.
2. Sheep Creek South (SCS), R5W, T35N, Sec. 1, 7, 12 (portions of). SCS contains 407.42 acres (164.8 hectares). Elevation range of study site 7400' to 8200'.

Sites considered as control sites for the purposes of this study include:

1. Park Bench (PB) R4W, T36N, Sec. 28. PB contains 424.1 acres (171.6 hectares). Elevation range of study site 7200' to 8400'.
2. Davis Creek (DC) R4W, T35N, Sec. 14, 15, 22, 23 (portions of). Elevation range of study site 7400' to 8800'.

The habitat can be described as warm dry mixed conifer with ponderosa pine, *Pinus ponderosa*, as the dominant overstory species. Other tree species encountered regularly on the transect sites include white fir, *Abies concolor*, aspen, *Populus tremuloides*, and Douglas fir, *Pseudotsuga menziesii*. The dominant shrub species occurring on the transects was Gambel's oak, *Quercus gambelii*, other shrub species observed with regularity include snowberry, *Symphoricarpos spp.*, serviceberry, *Amelanchier alnifolia*, Wood's rose, *Rosa woodsii*, chokecherry, *Prunus virginiana*, hawthorne, *Crataegus spp.* Habitat variability within the study sites was determined by slope, aspect, moisture and soil type. These combine to influence plant species composition and dominance on a micro site scale (1 to 3 acres) randomly across the study areas (i.e. aspen grove, or shrub thicket).

### **Methods:**

See attached appendix I (Prescribed Fire Strategies to Restore Wildlife Habitat in Ponderosa Pine Forests of the Interior Mountain West).

## Results:

### Cavity Nesting Species Search (Nest Sites)

Thirteen pair of nesting woodpecker species were detected, identified and monitored during this portion of the study. Of those thirteen nesting pair five separate species were identified. See appendix III. Study site identification, species identified and number of nest locations per study site include:

<u>Study Location</u>	<u>Nesting Species</u>	<u>#of Active Nests per Species</u>
SCS	NOFL	2
SCS	WISA	1
SCS	HAWO	1
SCN	RNSA	2
SCN	WISA	1
DC	TTWO	1
DC	NOFL	1
DC	RNSA	1
PB	TTWO	1
PB	WISA	1
PB	NOFL	1

SCS – Sheep Cr. South  
SCN – Sheep Cr. North  
DC - Davis Cr.  
PB – Park Bench

NOFL – Northern Flicker  
WISA – Williamson’s Sapsucker  
HAWO – Hairy Woodpecker  
RNSA – Red-naped Sapsucker  
TTWO – Three-toed Woodpecker

Once the study sites were delineated and the nest search portion of the project was started it became obvious that the potential suitable habitat element for nesting woodpecker species was very high. The density of large standing dead trees occurring within the sites is significant. The potential for cavity nesting in the larger aspen trees also became a factor in searching the study areas. The search process was time consuming, but field staff felt it was necessary since the potential appeared high. During the early phase of the search many woodpecker species were detected both by sight and sound. Time was devoted to attempting to associate these birds to a specific tree cavity. Most often that time spent did not prove fruitful and staff would continue along the search transect. As a result portions of the study sites were searched very quickly or not at all due to the time left in the nesting phenology. Searching continued through the early monitoring stage. The combination of large amount of suitable habitat, the logistics of hiking to the study sites and the terrain at the sites along with limited field staff resulted in inadequate initial surveys and timely monitoring. As this study continues it is felt that both the process and the results will improve.

### Avian Point Count Survey

Points were established within the four study sites. See appendix III. Avian species were recorded as per the established protocol. Each site was visited and surveyed on two separate occasions. Species composition and other pertinent information from the count survey is forthcoming from Kim Feree, USGS. Study site identification and number of point count locations established per site include:

<u>Study Location</u>	<u># of Points</u>	<u>Location</u>
SCS	18	
SCN	21	
DC	19	
PB	32	

SCS – Sheep Cr. South  
 SCN – Sheep Cr. North  
 DC - Davis Cr.  
 PB – Park Bench

### **Vegetation Measurements at Nest Trees (snags) and Point Counts**

Data was taken at nest tree (snags) locations and point count locations following the protocol set forth in the Instructions for Vegetation Measurements. See appendix IV. This data consists of 1) overstory, ground cover, and tree seedling/sapling and shrub stem count. 2) live trees either wildlife or fuel as defined by this study. 3) snags either wildlife or fuel as defined by this study. 4) logs and down wood either wildlife, large fuel, or fine fuel as defined by this study. All nest sites and point count locations in the Sheep Creek North (22 sites) and Sheep Creek South (22 sites) study sites were completed during the 2002 field season. Not all site locations in the Park Bench and Davis Creek study areas (control) were completed during the 2002 field season due to seasonal staff time constraints and environmental conditions. However, a representative sample of the study areas were accomplished by completing all nest tree locations as well as five point count locations within each study area. At Park Bench eight data collection sites were completed and Davis Creek had eight data collection sites completed. All vegetation data collected from the field season has been transferred from the field data sheets to the computer database on file with the district wildlife biologist.

Statistical summary of data needs to be performed in order to complete this phase of the study.

### **Study Area Discussion and Observations**

The structural elements (horizontal and vertical diversity) of the study areas are comprised of large standing dead trees, mostly ponderosa pine, in the three decay classes defined by the study. There is potential for future recruitment of that element as well. During the 2002 field season several large to very large ponderosa pine were observed fading (brown needles) possibly due to drought or insect. Many of those fading trees had pitch tubes visible. High tree mortality in low elevation xeric sites was observed across the San Juan National Forest this summer. High tree mortality in the lower xeric sites was observed at the project level and across the San Juan National Forest. The study areas exhibit multi-layer canopy, mostly white fir in the in the second story tree canopy, however there are ponderosa pine within the second layer canopy as well. The tree canopy closure varies throughout the sites from dense to relatively open. In addition to the large standing dead tree structure there are also many large to very large down logs. This element adds to the structural diversity of the understory within these areas. The appearance of forest openings, one to three acres in size, consisting of grass/forb and or shrub species add to the complexity of the study sites. In addition to the forest openings, the mix of aspen stands and dense shrub thickets add to the diversity of the area. Within the forested

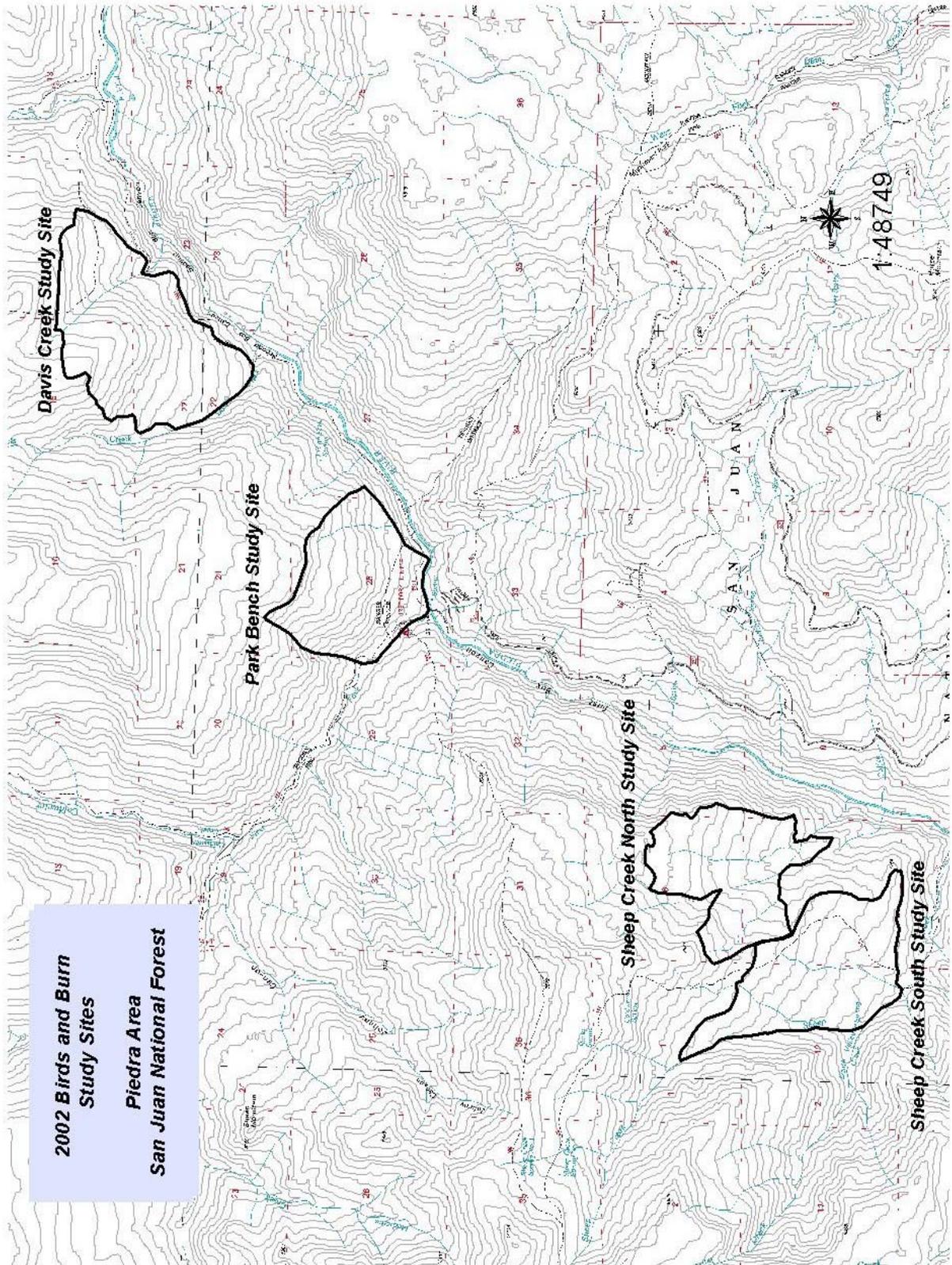
areas the shrub understory varies in density from moderate to extremely dense. Generally Gambel's oak is the dominant shrub species. However, at several data collection points snowberry or a combination of serviceberry and snowberry are the dominant shrub species. Large to very large Gambel's oak (greater than 23cm, 9"dbh) were recorded along survey transects in several sites. Large to very large oak was observed in other locations not appearing on data transects as well. Due to the significant drought conditions experienced in the area during the field season of 2002 most grass/forb species did not begin to grow until early to mid August. Although there were no noxious weeds recorded on the vegetation points there were two species of noxious weeds observed in the forest openings that are scattered throughout the study sites. In the openings occurring in the Sheep Creek sites the noxious weed most commonly observed was musk thistle, *Carduus nutans L.*. In the forest openings on Park Bench and Davis Creek the two most commonly observed weed species were musk thistle and houndstongue, *Cynoglossum officinale L.*. Although these study areas offer challenges in access and logistical issues in terms of conducting observations and data collection they also represent a wildland landscape perspective to the study.

Dan Williams  
2002 Field Crew Leader

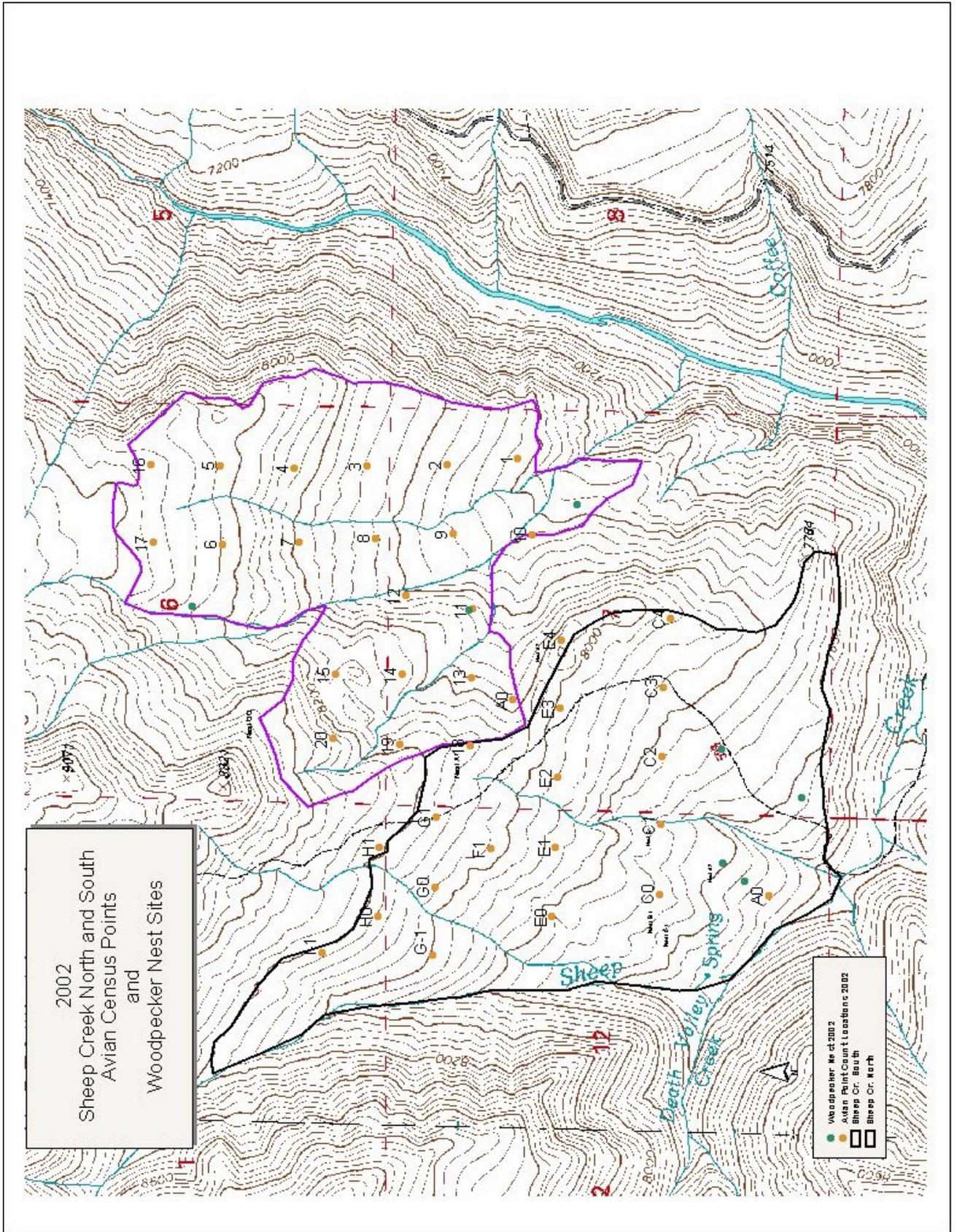
Gary Vos  
Wildlife Biologist  
San Juan NF

Appendix I. Not included.

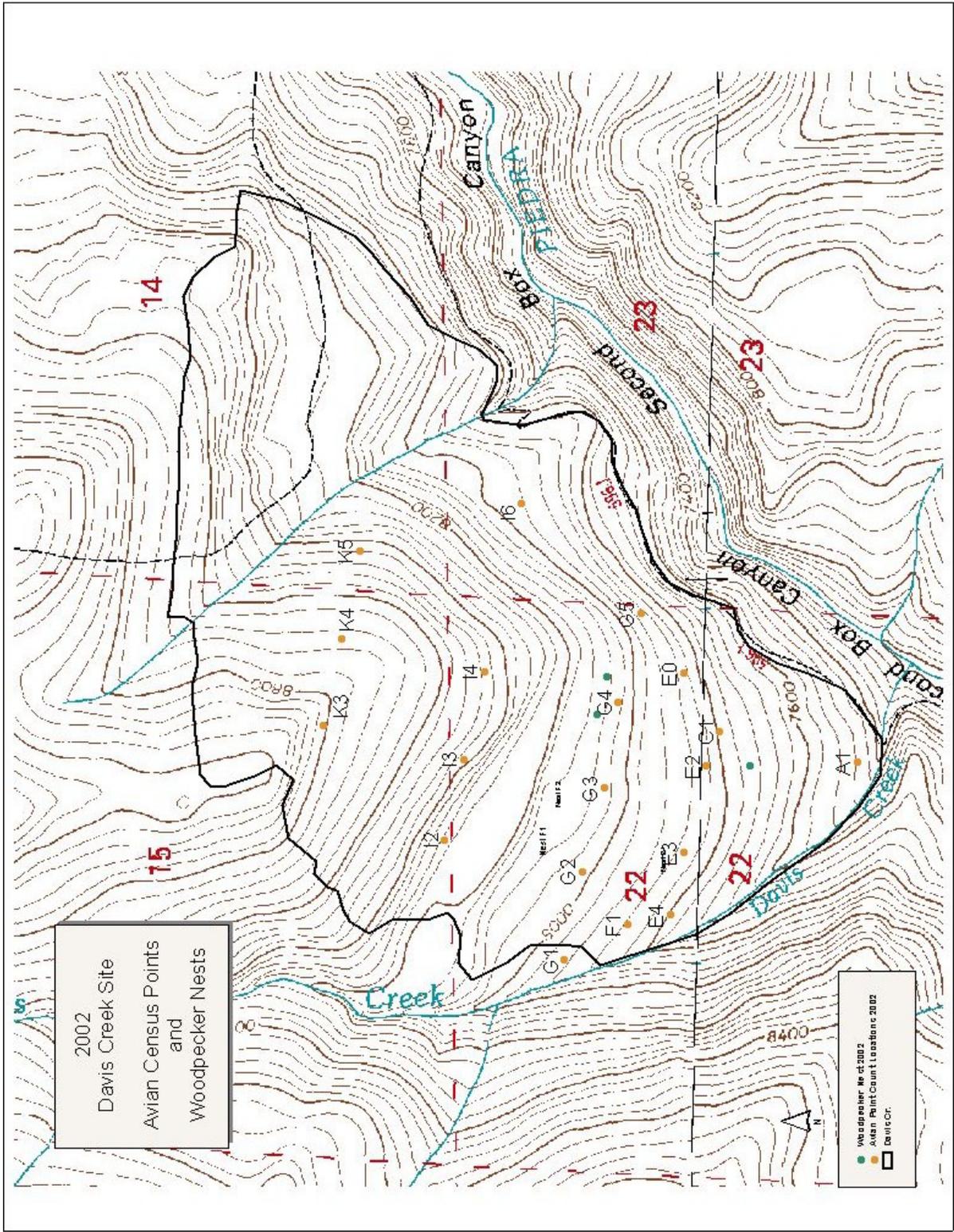
Appendix II. Study Areas.



Appendix III. Songbird Point Count and Woodpecker Nest Locations.

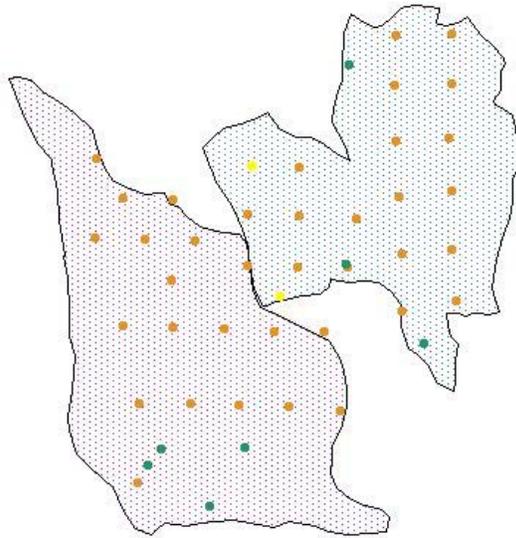






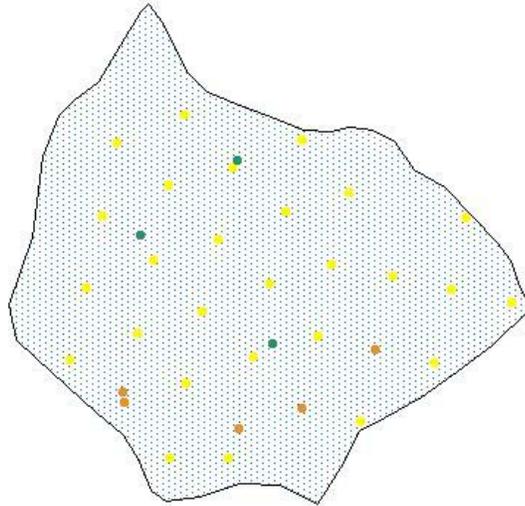
Appendix IV. Vegetation Points.

Sheep Creek North and South  
Vegetation Points Completed in 2002



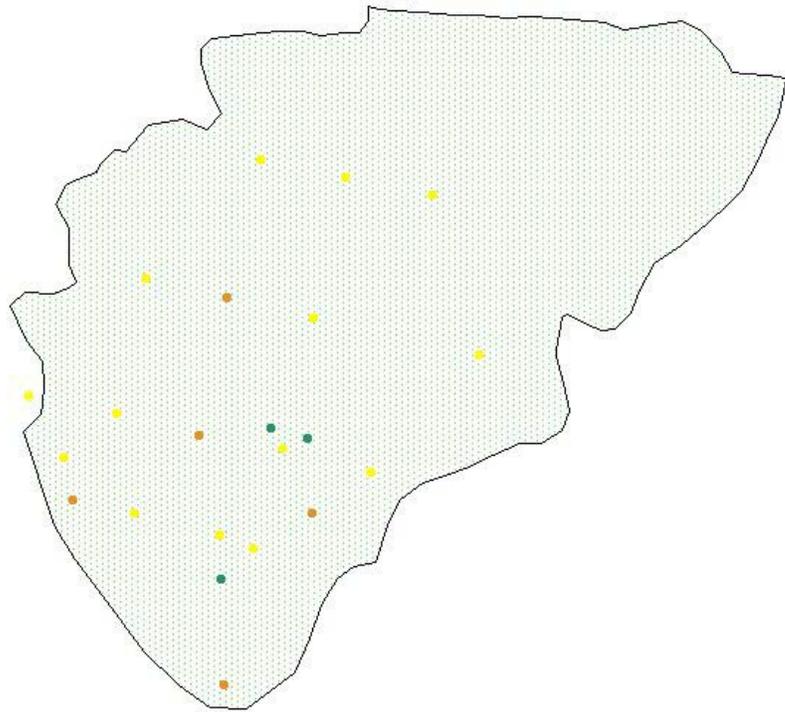
- Avian Point Count/Vegetation Points Completed in 2002
- Nest/Vegetation Points Completed in 2002
- Avian Point Count/Vegetation Points Not Completed in 2002

# Park Bench Vegetation Points Completed in 2002



- Avian Point Count/Vegetation Points Completed in 2002
- Nest/Vegetation Points Completed in 2002
- Avian Point Count/Vegetation Points Not Completed in 2002

# Davis Creek Vegetation Points Completed in 2002



- Avian Point Count/Vegetation Points Completed in 2002
- Nest/Vegetation Points Completed in 2002
- Avian Point Count/Vegetation Points Not Completed in 2002

Unit	Point	13S	UTM				
<b>Davis Creek</b>	<b>A1</b>	<b>0296571</b>	<b>4138308</b>		<b>Rows in bold indicate locations where vegetative data was completed during the 2002 field season.</b>		
<b>Davis Creek</b>	<b>C1</b>	<b>0296656</b>	<b>4138696</b>				
Davis Creek	E0	0296822	4138798				
Davis Creek	E2	0296559	4138734				
Davis Creek	E3	0296315	4138798				
<b>Davis Creek</b>	<b>E4</b>	<b>0296139</b>	<b>4138835</b>				
Davis Creek	G2	0296262	4139083				
<b>Davis Creek</b>	<b>G3</b>	<b>0296499</b>	<b>4139021</b>				
Davis Creek	G4	0296740	4138982			<b>In addition to these points vegetative data was completed at the nest sites in all four study areas. These include:</b>	
Davis Creek	G5	0296989	4138917				
Davis Creek	I2	0296350	4139470				
<b>Davis Creek</b>	<b>I3</b>	<b>0296579</b>	<b>4139417</b>				
Davis Creek	I4	0296826	4139359		<b>SCS A1, A2, B1, and C1</b>		
Davis Creek	I5				<b>SCN A1, A2, and OO</b>		
Davis Creek	I6	0297301	4139253		<b>DC B1, F1, and F2</b>		
Davis Creek	K3	0296675	4139812		<b>PB P9, T1, and R2</b>		
Davis Creek	K4	0296918	4139759				
Davis Creek	K5	0297167	4139710				
Davis Creek	M4	0297004	4130150				
Davis Creek	M5	0297246	4130099				
Davis Creek	F1	0296112	4138956				
Davis Creek	G1	0296012	4139133				
Park Bench	O1	0293936	4137166				
Park Bench	O2	0293990	4137407				
Park Bench	O3	0294041	4137652				
Park Bench	Q0	0294218	4136595				
Park Bench	Q1	0294270	4136844				
Park Bench	Q2	0294324	4137085				
Park Bench	Q3	0294377	4137326				
Park Bench	Q4	0294429	4137568				
<b>Park Bench</b>	<b>R1</b>	<b>0294447</b>	<b>4136690</b>				
Park Bench	R2	0294497	4136932				
Park Bench	R3	0294550	4137180				
Park Bench	R4	0294604	4137420				
Park Bench	R5	0294660	4137663				
Park Bench	T0	0294858	4136716				
<b>Park Bench</b>	<b>T1</b>	<b>0294909</b>	<b>4136957</b>				
Park Bench	T2	0294968	4137206				
Park Bench	U0	0295104	4136914				
Park Bench	U1	0295163	4137159				
Park Bench	U2	0295212	4137401				
Park Bench	V1	0295366	4137116				
Park Bench	O0	0293883	4136923				
<b>Park Bench</b>	<b>P0</b>	<b>0294056</b>	<b>4136814</b>				
<b>Park Bench</b>	<b>P1</b>	<b>0294061</b>	<b>4136780</b>				
Park Bench	P2	0294109	4137014				
Park Bench	P3	0294160	4137261				
Park Bench	P4	0294211	4137508				
Park Bench	P5	0294264	4137749				
Park Bench	R0	0294414	4136591				
Park Bench	S1	0294714	4137001				
Park Bench	S2	0294761	4137244				
Park Bench	S3	0294817	4137488				
<b>Park Bench</b>	<b>SO</b>	<b>0294661</b>	<b>4136758</b>				

Sheep Creek	A0	0291097	4132797				
<b>Sheep Creek</b>	<b>F1</b>	<b>0290559</b>	<b>4132877</b>				
Sheep Creek	A0	0290390	4131875				
Sheep Creek	A1						
Sheep Creek	A2						
Sheep Creek	A3						
<b>Sheep Creek</b>	<b>C0</b>	<b>0290396</b>	<b>4132271</b>				
<b>Sheep Creek</b>	<b>C1</b>	<b>0290648</b>	<b>4132265</b>				
<b>Sheep Creek</b>	<b>C2</b>	<b>0290892</b>	<b>4132262</b>				
<b>Sheep Creek</b>	<b>C3</b>	<b>0291142</b>	<b>4132256</b>				
<b>Sheep Creek</b>	<b>C4</b>	<b>0291392</b>	<b>4132232</b>				
<b>Sheep Creek</b>	<b>E0</b>	<b>0290314</b>	<b>4132657</b>				
<b>Sheep Creek</b>	<b>E1</b>	<b>0290566</b>	<b>4132644</b>				
<b>Sheep Creek</b>	<b>E2</b>	<b>0290818</b>	<b>4132637</b>				
<b>Sheep Creek</b>	<b>E3</b>	<b>0291067</b>	<b>4132628</b>				
<b>Sheep Creek</b>	<b>E4</b>	<b>0291314</b>	<b>4132623</b>				
<b>Sheep Creek</b>	<b>G0</b>	<b>0290422</b>	<b>4133081</b>				
<b>Sheep Creek</b>	<b>G1</b>	<b>0290673</b>	<b>4133075</b>				
<b>Sheep Creek</b>	<b>G-1</b>	<b>0290175</b>	<b>4133089</b>				
<b>Sheep Creek</b>	<b>H0</b>	<b>0290313</b>	<b>4133284</b>				
<b>Sheep Creek</b>	<b>H1</b>	<b>0290566</b>	<b>4133279</b>				
<b>Sheep Creek</b>	<b>I-1</b>	<b>0290184</b>	<b>4133485</b>				
<b>Sheep Creek North</b>	<b>1</b>	<b>0291968</b>	<b>4132780</b>				
<b>Sheep Creek North</b>	<b>2</b>	<b>0291947</b>	<b>4133035</b>				
<b>Sheep Creek North</b>	<b>3</b>	<b>0291943</b>	<b>4133326</b>				
<b>Sheep Creek North</b>	<b>4</b>	<b>0291935</b>	<b>4133588</b>				
<b>Sheep Creek North</b>	<b>5</b>	<b>0291945</b>	<b>4133856</b>				
<b>Sheep Creek North</b>	<b>6</b>	<b>0291661</b>	<b>4133845</b>				
<b>Sheep Creek North</b>	<b>7</b>	<b>0291670</b>	<b>4133570</b>				
<b>Sheep Creek North</b>	<b>8</b>	<b>0291683</b>	<b>4133293</b>				
<b>Sheep Creek North</b>	<b>9</b>	<b>0291699</b>	<b>4133013</b>				
<b>Sheep Creek North</b>	<b>10</b>	<b>0291696</b>	<b>4132728</b>				
<b>Sheep Creek North</b>	<b>11</b>	<b>0291426</b>	<b>4132943</b>				
<b>Sheep Creek North</b>	<b>12</b>	<b>0291475</b>	<b>4133185</b>				
<b>Sheep Creek North</b>	<b>13</b>	<b>0291179</b>	<b>4132947</b>				
<b>Sheep Creek North</b>	<b>14</b>	<b>0291189</b>	<b>4133197</b>				
<b>Sheep Creek North</b>	<b>15</b>	<b>0291191</b>	<b>4133440</b>				
<b>Sheep Creek North</b>	<b>16</b>	<b>0291948</b>	<b>4134105</b>				
<b>Sheep Creek North</b>	<b>17</b>	<b>0291667</b>	<b>4134094</b>				
<b>Sheep Creek North</b>	<b>18</b>	<b>0290932</b>	<b>4132954</b>				
<b>Sheep Creek North</b>	<b>19</b>	<b>0290937</b>	<b>4133207</b>				
Sheep Creek North	20	0290959	4133449	No Veg. Data Taken At			
				Pt. 20. Topography not			
				Safe For Transect Data			
				Collection.			