

Northern Goshawk Surveys on the Beartooth, Ashland, and Sioux Districts of the Custer Gallatin National Forest: 2012-2014



Prepared for:
Custer-Gallatin National Forest

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EXECUTIVE SUMMARY

The Forest Service contracted with the Montana Natural Heritage Program to conduct surveys for the Northern Goshawk (*Accipiter gentilis*) between 2012 and 2014 to inform forest and project planning efforts on the Beartooth, Ashland and Sioux Districts. The major goals were to: (1) provide more widespread baseline survey coverage for Northern Goshawk; (2) conduct bird point count surveys in conjunction with call playback surveys for Northern Goshawks; and (3) record observations of all species detected incidentally on each management unit.

We intersected a spatial grid of call stations with U.S. Forest Service predicted suitable Northern Goshawk habitat polygons, removed stations that were obviously not in forest cover or were on stand margins and then prioritized larger stands with higher canopy closure for survey. We surveyed a total of 1,502 Northern Goshawk call stations on the Beartooth, Ashland, and Sioux Districts.

We detected a total of 225 species at 9,614 unique spatial locations across the Beartooth,

Ashland, and Sioux Districts, including 38 detections of Northern Goshawks and 230 detections of 25 other Montana and South Dakota species of conservation concern.

Despite our efforts, four units on the Beartooth, Ashland, and Sioux Districts still stand out as being in need of baseline call playback surveys for Northern Goshawk. In prioritized order, these are: (1) the Pryor Mountains unit of the Beartooth District across all but the northeastern portion of the unit that was the focus of previous survey efforts; (2) the Beartooth unit of the Beartooth District on portions of the lower Stillwater River, the lower West Rosebud River, and some areas southwest and south of Red Lodge; (3) the Ashland District north and south of the Ten Mile road, north and northwest of the Blum Creek road, the Poker Jim Butte area, along the Lee Creek road, and the Cook Mountain area; and (4) forested portions of the West Short Pines unit of the Sioux District.

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TABLE OF CONTENTS

Introduction	1
Project need.....	1
Objectives.....	1
Methods	2
Timing of surveys and prioritizing call stations for survey.....	2
Sampling Procedure.....	2
Statistics.....	3
Storage and Availability of Data.....	3
Results	4
Summary of Survey Effort.....	4
Summary of Species Detected.....	5
Survey Recommendations	8
Literature Cited	9

LIST OF FIGURES

Figure 1. Administrative units on the Beartooth, Ashland, and Sioux Districts of the Custer Gallatin National Forest.....	10
Figure 2. Northern Gosawk call station sampling grids used during the Region 1 USFS 2005 and Montana Natural Heritage Program 2012-2014 sampling efforts.....	11
Figure 3. Example of Northern Gosawk call station sampling effort on the Ashland District.....	12
Figure 4. Northern Goshawk call stations, surveyed locations, and detections on the Beartooth unit of the Beartooth District.....	13
Figure 5. Northern Goshawk call stations, surveyed locations, and detections on the Pryor Mountains unit of the Beartooth District.....	14
Figure 6. Northern Goshawk call stations, surveyed locations, and detections on the Ashland District.....	15
Figure 7. Northern Goshawk call stations, surveyed locations, and detections on the Chalk Buttes unit of the Sioux District.....	16
Figure 8. Northern Goshawk call stations, surveyed locations, and detections on the Ekalaka Hills unit of the Sioux District.....	17
Figure 9. Northern Goshawk call stations, surveyed locations, and detections on the Long Pines unit of the Sioux District.....	18
Figure 10. Northern Goshawk call stations on the West Short Pines unit of the Sioux District.....	19
Figure 11. Northern Goshawk call stations, surveyed locations, and detections on the East Short Pines unit of the Sioux District.....	20
Figure 12. Northern Goshawk call stations, surveyed locations, and detections on the Slim Buttes unit of the Sioux District.....	21
Figure 13. Northern Goshawk call stations and detections on the South Cave Hills unit of the Sioux District.....	22
Figure 14. Northern Goshawk call stations, surveyed locations, and detections on the North Cave Hills unit of the Sioux District.....	23

LIST OF TABLES

Table 1.	Summary of Northern Goshawk survey efforts on units of the Beartooth, Ashland, and Sioux Ranger Districts since 2005.....	24
Table 2.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2013 surveys on the Beartooth unit of Beartooth District.....	25
Table 3.	Species detected, and numbers of unique spatial observations, on the Beartooth unit of Beartooth District in 2013.....	27
Table 4.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2014 surveys on the Ashland District.....	30
Table 5.	Species detected, and numbers of unique spatial observations, on the Ashland District in 2014.....	33
Table 6.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012 and 2014 surveys on the Chalk Buttes unit of the Sioux District.....	36
Table 7.	Species detected, and numbers of unique spatial observations, on the Chalk Buttes unit of the Sioux District in 2012 and 2014.....	38
Table 8.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012 and 2014 surveys on the Ekalaka Hills unit of the Sioux District.....	41
Table 9.	Species detected, and numbers of unique spatial observations, on the Ekalaka Hills unit of the Sioux District in 2012, 2013, and 2014.....	44
Table 10.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012, 2013, and 2014 surveys on the East Short Pines unit of the Sioux District.....	48
Table 11.	Species detected, and numbers of unique spatial observations, on the East Short Pines unit of the Sioux District in 2012, 2013, and 2014.....	51
Table 12.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012, 2013, and 2014 surveys on the Slim Buttes unit of the Sioux District.....	54
Table 13.	Species detected, and numbers of unique spatial observations, on the Slim Buttes unit of the Sioux District in 2012, 2013, and 2014.....	58
Table 14.	Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012 surveys on the North Cave Hills unit of the Sioux District.....	62
Table 15.	Species detected, and numbers of unique spatial observations, on the North Cave Hills unit of the Sioux District in 2012.....	64

APPENDICES

Appendix A

Heritage Program Ranks: definitions for global and state conservation status ranks and Montana
Species of Concern and Potential Species of Concern..... A 1-4

Appendix B

Summary of all Northern Goshawk observation records on the management units of the Beartooth,
Ashland, and Sioux Districts of the Custer Gallatin National Forest

Beartooth Unit of the Beartooth District..... B 1
Pryor Mountains Unit of the Beartooth District..... B 7
Ashland District..... B 9
Chalk Buttes Unit of the Sioux District..... B 27
Ekalaka Hills Unit of the Sioux District..... B 28
Long Pines Unit of the Sioux District..... B 31
East Short Pines Unit of the Sioux District..... B 32
Slim Buttes Unit of the Sioux District..... B 33
North Cave Hills Unit of the Sioux District..... B 34
South Cave Hills Unit of the Sioux District..... B 35

INTRODUCTION

PROJECT NEED

The Forest Service is required by the National Forest Management Act to maintain a diversity of plant and animal species and accomplishes this, in part, through the enactment and revision of forest plans (NFMA 1976). The Custer Gallatin National Forest is currently initiating a forest plan revision. As part of this revision, the Forest Service must: (1) identify and assess available information for threatened, endangered, proposed, and candidate species and potential species of conservation concern present in the plan area (36 CFR 219.6); and (2) select monitoring indicators that measure the effectiveness of plan components designed to maintain or restore the ecological conditions and key ecosystem characteristics necessary to provide for diversity of plant and animal communities and contribute to the recovery of, conserve, or maintain the viability of at risk species within the plan area (36 CFR 219.12).

The Northern Goshawk (*Accipiter gentilis*) is currently listed as a Montana Species of Concern (MTNHP & MTFWP 2016) and is tracked by the South Dakota Natural Heritage Program as a rare species (SDGFP 2016). The species prefers to nest in mature and old-growth forests with a preponderance of large trees, a dense canopy, and a relatively open understory (Hayward and Escano 1989, Squires and Reynolds 1997, Clough 2000; Squires and Kennedy 2005). These habitat preferences have led to a long history of use as a Management Indicator Species on many National Forests and the species was previously classified as Sensitive on all Region 1 forests (Kowalski 2006).

In the spring and summer of 2005, the Northern Region Forest Service conducted call playback

surveys across accessible portions of the region using grid-based primary sampling units (PSUs) that approximated the size of Northern Goshawk home ranges in order to estimate detection and occupancy rates (Kowalski 2006, Woodbridge and Hargis 2006). This effort estimated the proportion of PSUs with Northern Goshawks present in road-accessible lands across Region 1 to be 0.39 (95% confidence interval of 0.29 to 0.5) (Kowalski 2006). The species was subsequently removed from the Sensitive Species List across all Region 1 forests (USFS 2011). However, the species has remained a point of contention in litigation over forest management projects and sampling effort for the species remains somewhat limited across large portions of the Custer Gallatin National Forest (Squires and Reynolds 1997, Squires and Kennedy 2005, MTNHP 2016).

OBJECTIVES

Given the contentious and litigious history associated with managing Northern Goshawks, the lack of widespread baseline surveys on the Beartooth, Ashland and Sioux Districts, widespread fires that have recently altered forest cover on these units, and the need to inform forest and project planning efforts, the Forest Service contracted with the Montana Natural Heritage Program to conduct surveys for the species between 2012 and 2014. The major goals of these survey efforts were to: (1) provide more widespread baseline survey coverage for Northern Goshawk; (2) conduct bird point count surveys in conjunction with call playback surveys for Northern Goshawks; and (3) record observations of all species detected incidentally on each management unit.

METHODS

TIMING OF SURVEYS & PRIORITIZING CALL STATIONS FOR SURVEY

Two surveys of all call stations within each grided PSU during the breeding period is the standard protocol outlined in Woodbridge and Hargis (2006) and was the protocol followed during the regionwide survey efforts in 2005 (Kowalski 2006). However, this approach severely limits geographic coverage of surveys and often leads to surveys being conducted at call stations that lack forest cover suitable to support Northern Goshawks. Many areas on the Beartooth, Ashland, and Sioux Districts lack large areas of mature forest cover and the primary goal of this effort was to provide as widespread survey coverage across these districts as possible given the limited funding available (Figure 1). Therefore, call surveys were only performed during a single time period between mid-June and mid-July. Furthermore, call stations were not surveyed using the PSU approach wherein all call stations within a local grid of stations are surveyed. Rather, only call stations occurring in larger patches of suitable Northern Goshawk habitat were surveyed.

We created a spatial grid of call stations that, although not directly aligning with the call station grid used in the 2005, also consisted of points aligned on east/west lines separated by 250 meters with call stations along each line separated by 200 meters and offset in an east/west orientation by 100 meters from call stations on adjacent lines (Figure 2). We intersected this base call station grid with polygons defined as having suitable Northern Goshawk habitat by the 2011 and/or 2013 U.S.

Forest Service Northern Goshawk models. We then visual examined the resulting call stations with aerial photographs (NAIP 2011) and removed call stations that were not within the middle of larger intact forest stands. Finally, we prioritized survey effort so that larger stands with higher canopy closure were prioritized over smaller stands with lower canopy closure. In the field, we then strove to conduct surveys at call stations within the most intact portions of forest stands. Furthermore, if some call stations were not able to be surveyed as a result of lack of time, we made every effort to survey adjacent call stations so that territorial Northern Goshawks in the area had a chance to respond to calls from adjacent stations (Figure 3).

SAMPLING PROCEDURE

We slightly modified the calling procedures outlined in Woodbridge and Hargis (2006). We used FoxPro NX3 game callers loaded with adult alarm call and juvenile begging call sound files and broadcast them at full volume from the megaphone end of the caller. In the field, calls from surveyors working in the same general area were heard on several occasions at distances of 500-600 meters and we feel confident that calls would be audible at 200 meters unless they were obstructed by a cliff or canyon. At each call station, an initial two-minute silent listening period was followed by three rounds of three calls (two adult alarm and one juvenile begging) broadcast in three directions that were 120 degrees from one another and at 60 degree angles from the transect line. Calls lasted for approximately 10 seconds and were followed by 30 seconds of silence. The final round of calls was followed by

an additional two-minutes of silent listening. Thus, there were a sum total of 10 minutes of calls and silence at each call station, broken down as follows with seconds of calls shown in bold (begging calls underlined) and seconds of silence shown in normal font: 120-**10-30-10-30-10-30-120-10-30-10-30-10-30-120-10-30-10-30-10-30-120**.

Throughout the time spent at each call station, observers stayed vigilant to the approach of Northern Goshawks and the presence of signs of Northern Goshawk nests (e.g., feathers, whitewash, larger diameter trees, juvenile begging sounds) and used binoculars to identify any animals observed at a distance. When a Northern Goshawk responded with territorial alarm calls, surveyors recorded the bearing and estimated the distance to the calls. If a Northern Goshawk flew into or away from an observer the bearing of the approach and/or departure was recorded. In areas where Northern Goshawks responded with territorial calls, surveyors attempted to determine the nest locations by playing additional calls in the direction of the territorial call.

During periods of silence observers also recorded birds and other animal species detected visually or by call. Surveyors also recorded locations of animals detected incidentally while walking between call stations, driving between survey areas, and while camping.

A GPS unit was used to navigate to each call station and record the exact location surveyed. Surveyors attempted to reach the exact location of pregenerated call station locations. However, this was not always possible in rugged or unstable terrain (e.g. scree slopes, water bodies, cliffs). Time of survey initiation was

recorded at each call station and weather conditions were noted. Cloud cover was recorded as: 1 = <5%; 2 = 5-20%; 3 = 21-40%; 4 = 41-60%; 5 = 61-80%; 6 = 81-100%. Wind condition was recorded as: 1 = smoke rises (<1 mph); 2 = smoke drifts due to breeze (1-3 mph); 3 = leaves rustle, breeze felt on face (4-7 mph); 4 = leaves and small twigs in constant motion (8-12 mph); 5 = raises dust, small branches in motion (<12 mph).

STATISTICS

Proportions (p) and standard errors (SE) of proportions of Northern Goshawk call stations where species were detected were calculated as follows where n = number of call stations surveyed and d = number of call stations with detections:

$$p = d/n$$

$$SE = \sqrt{\frac{p(1-p)}{n}}$$

STORAGE & AVAILABILITY OF DATA

All Northern Goshawk call playback survey information, site photographs, and locations of detections of animals during surveys or made incidentally are stored in databases at the Montana Natural Heritage Program in the Montana State Library in Helena and are made available online through the Montana Natural Heritage Program's MapViewer so that it is integrated with other survey and incidental observation data and more readily available for forest and project-level planning efforts <http://mtnhp.org/mapviewer/>

Results

SUMMARY OF SURVEY EFFORT

Between 2012 and 2014, we surveyed a total of 1,502 Northern Goshawk call stations on the Beartooth, Ashland, and Sioux Districts; 62% of the 2,428 call stations that have been surveyed across those units since 2005 (Table 1).

On the Beartooth unit of the Beartooth District, 33% of the 1,024 potential call stations were surveyed in 2013 (Table 1). With the exception of portions of the lower Stillwater River, the lower West Rosebud River, and some areas southwest and south of Red Lodge, this unit has fairly widespread coverage for baseline surveys of potential call stations outside of the wilderness (Figure 4).

The Pryor Mountains unit of the Beartooth District was not surveyed between 2012 and 2014, but only 8.6% and 4.5% of the 1,680 potential call stations were surveyed on this unit in 2005 and 2010, respectively (Table 1). This unit stands out as being in need of additional baseline surveys across all but the northeastern portion of the unit that was the focus of previous survey efforts (Figure 5).

On the Ashland District, 22% of the 2,775 potential call stations were surveyed in 2014 (Table 1). The majority of the larger forest stands that remain after the 2012 wildfires received some sampling effort. However, there are notable holes in survey effort north and south of the Ten Mile road, north and northwest of the Blum Creek road, the Poker Jim Butte area, along the Lee Creek road, and the Cook Mountain area (Figure 6).

On the Chalk Buttes unit of the Sioux District, 96% of the 72 potential call stations were surveyed in 2012 and 17% of these were resurveyed in 2014 (Table 1). Recent survey effort on this unit has clearly provided adequate baseline survey coverage (Figure 7).

On the Ekalaka Hills unit of the Sioux District, 24% of the 398 potential call stations were surveyed in 2012 (Table 1). The Dugan Gulch wildfire consumed much of the remaining potential habitat in 2012 after our surveys that year, but we surveyed 59 call stations in the remaining areas of high forest cover in 2014 and this unit now seems to have adequate recent baseline survey coverage in remaining potential habitat (Figure 8).

The Long Pines unit of the Sioux District was not surveyed between 2012 and 2014. Although 49 call stations were surveyed in 2005, they mostly appear to lack suitable forest cover for Northern Goshawks (Table 1, Figure 9). This unit is largely devoid of forest cover and the ability to support a Northern Goshawk breeding territory seems remote. The only area that seems to have any potential habitat is on the southwestern portion of the unit (Figure 9).

None of the 20 potential call stations on the West Short Pines unit of the Sioux District have been surveyed. However, it appears that there is adequate forest cover in portions of this unit to support a Northern Goshawk breeding territory (Table 1, Figure 10).

On the East Short Pines unit of the Sioux District, 79%, 100%, and 95% of the 39 potential call stations in suitable habitat were surveyed in 2012, 2013, and 2014, respectively (Table 1, Figure 11). This unit has received more than adequate baseline survey coverage.

On the Slim Buttes unit of the Sioux District, 22%, 39%, and 29% of the 187 potential call stations in suitable habitat were surveyed in 2012, 2013, and 2014, respectively (Table 1). Only small regions in the central and northeastern corner of this unit lack recent baseline surveys in potentially suitable habitat (Figure 12).

None of the 58 potential call stations on the South Cave Hills unit of the Sioux District have been surveyed (Table 1). However, potential habitat is very broadly dispersed in the unit and it is unlikely to support a Northern Goshawk breeding territory despite the previous detection of a bird there in 1996 (Figure 13, Appendix B, MTNHP 2016).

On the North Cave Hills unit of the Sioux District, 69% of the 65 potential call stations were surveyed in 2012 (Table 1). Recent survey effort in potential habitat on this unit appears to be adequate (Figure 14).

SUMMARY OF SPECIES DETECTED

Between 2012 and 2014, we detected a total of 225 species at 9,614 unique spatial locations across the Beartooth, Ashland, and Sioux Districts, including 38 detections of Northern Goshawks and 230 detections of 25 other Montana and South Dakota species of conservation concern (Tables 1-15, Appendix A, MTNHP & MTFWP 2016, SDFGP 2016).

On the Beartooth unit of the Beartooth District, Northern Goshawks were detected at 5 ($p = 0.015$, $SE = 0.007$) of the 340 call stations surveyed in 2013 and incidentally at 2 additional locations; this is 17 percent of the 42 observation records reported in the unit since 1985 (Figure 4, Tables 2 & 3, Appendix B). Another 123 species were detected at 1,794 unique spatial locations on this unit, including 12 species of conservation concern or potential conservation concern at 152 unique spatial locations (Table 3, MTNHP & MTFWP 2016).

On the Ashland District, Northern Goshawks were detected at 21 ($p = 0.034$, $SE = 0.007$) of the 617 call stations surveyed in 2014 and incidentally at 3 additional locations; this is 17 percent of the 138 observation records reported in the unit since 1977 (Figure 6, Tables 4 & 5, Appendix B). Another 115 species were detected at 3,975 unique spatial locations on this unit, including 16 species of conservation concern or potential conservation concern at

243 unique spatial locations (Table 5, MTNHP & MTFWP 2016).

On the Chalk Buttes unit of the Sioux District, a Northern Goshawk was detected at 1 ($p = 0.014$, $SE = 0.014$) of the 72 call stations surveyed in 2012 and incidentally at one location in 2014; these are the only observation records reported in the unit (Figure 7, Tables 6 & 7, Appendix B). Another 57 species were detected at 607 unique spatial locations on this unit, including 5 and 3 species of conservation concern or potential conservation concern at 46 and 17 unique spatial locations in 2012 and 2014, respectively (Table 7, MTNHP & MTFWP 2016).

On the Ekalka Hills unit of the Sioux District, Northern Goshawks were detected at 1 and 2 ($p = 0.011$, $SE = 0.011$) and ($p = 0.034$, $SE = 0.024$) of the 94 and 59 call stations surveyed in 2012 and 2014, respectively; this is 9 percent of the 22 observation records reported in the unit since 1999 (Figure 8, Tables 8 & 9, Appendix B). Another 93 species were detected at 1,031 unique spatial locations on this unit, including 5 and 7 species of conservation concern or potential conservation concern at 33 and 30 unique spatial locations in 2012 and 2014, respectively (Table 9, MTNHP & MTFWP 2016).

On the East Short Pines unit of the Sioux District, no Northern Goshawks were detected on the 31, 39, and 37 call stations surveyed in 2012, 2013, and 2014, respectively (Figure 11, Tables 10 & 11). There have been two previous observations of Northern Goshawks on this unit in 1997 and 2004 (Appendix B). Another 51 species were detected at 570 unique spatial locations on this unit between 2012 and 2014, including 2 and 1 rare animal species tracked by the South Dakota Natural Heritage Program at 2 and 1 unique spatial locations in 2012 and 2013, respectively (Table 11, SDGFP 2016).

On the Slim Buttes unit of the Sioux District, Northern Goshawks were detected at 0, 1, and 1 ($p = 0$), ($p = 0.014$, $SE = 0.014$), and ($p = 0.019$,

SE = 0.019) of the 41, 73, and 54 call stations surveyed in 2012, 2013, and 2014, respectively; this is 66 percent of the 3 observation records reported in the unit since 1976 (Figure 12, Tables 12 & 13, Appendix B). Another 68 species were detected at 1,086 unique spatial locations on this unit, including 2, 3, and 2 rare animal species tracked by the South Dakota Natural Heritage Program at 4, 3, and 2 unique spatial locations in 2012, 2013, and 2014, respectively (Table 13, SDFGP 2016).

On the North Cave Hills unit of the Sioux District, no Northern Goshawks were detected on the 45 call stations surveyed in 2012 (Tables 14 & 15). There have been two previous observations of Northern Goshawks on this unit in 1914 and 2000 (Appendix B). Another 84 species were detected at 516 unique spatial locations on this unit in 2012, including 5 rare animal species tracked by the South Dakota Natural Heritage Program at 7 unique spatial locations (Table 15, SDGFP 2016).

Montana or South Dakota species of conservation concern detected across the units and listed in order by numbers of observations in parentheses were: Clark's Nutcracker (*Nucifraga columbiana*) (100), Red-headed Woodpecker (*Melanerpes erythrocephalus*) (49), Common Poorwill (*Phalaenoptilus nuttallii*) (17), Golden Eagle (*Aquila chrysaetos*) (12), Brown Creeper (*Certhia americana*) (10), Merlin (*Falco columbarius*) (7), Black-backed Woodpecker (*Picoides arcticus*) (5), Green-tailed Towhee (*Pipilo chlorurus*) (4), Black-tailed Prairie Dog (*Cynomys ludovicianus*) (4), Great Blue Heron (*Ardea herodias*) (2), Prairie Falcon (*Falco mexicanus*) (2), Peregrine Falcon (*Falco peregrinus*) (2), Veery (*Catharus fuscescens*) (2), Cassin's Finch (*Haemorhous cassinii*) (2), Plains Hog-nosed Snake (*Heterodon nasicus*) (2), Ferruginous Hawk (*Buteo regalis*) (1), Greater Sage-Grouse (*Centrocercus urophasianus*) (1), Yellow-billed Cuckoo (*Coccyzus americanus*) (1), Cassin's Kingbird (*Tyrannus vociferans*) (1), Pinyon Jay (*Gymnorhinus cyanocephalus*) (1), Blue-gray Gnatcatcher (*Poliophtila caerulea*) (1),

Brewer's Sparrow (*Spizella breweri*) (1), Snapping Turtle (*Chelydra serpentina*) (1), Hoary Bat (*Lasiurus cinereus*) (1), Fringed Myotis (*Myotis thysanodes*) (1).

Species of conservation concern or potential conservation concern detected at notably high proportions of Northern Goshawk call stations surveyed included: Clark's Nutcracker at 0.268 (SE = 0.024) on the Beartooth unit of the Beartooth District; Ovenbird (*Seiurus aurocapilla*) at 0.159 (SE = 0.015) and Plumbeous Vireo (*Vireo plumbeus*) at 0.141 (SE = 0.014) on the Ashland District; Ovenbird at 0.403 (SE = 0.058) and 0.846 (SE = 0.1) and Plumbeous Vireo at 0.139 (SE 0.041) and 0.154 (SE = 0.1) on the Chalk Buttes Unit of the Sioux District in 2012 and 2014, respectively; and Red-headed Woodpecker at 0.106 (SE = 0.032) and 0.22 (SE = 0.054) on the Ekalaka Hills unit of the Sioux District in 2012 and 2014, respectively (Tables 2-14).

Non species of conservation concern that were detected at over fifty percent of the Northern Goshawk call stations surveyed included: Red Squirrel (*Tamiasciurus hudsonicus*) at 0.615 (SE = 0.026) on the Beartooth unit of the Beartooth District; American Robin (*Turdus migratorius*) at 0.577 (SE = 0.02), House Wren (*Troglodytes aedon*) at 0.564 (SE = 0.02), and Western Wood-Pewee (*Contopus sordidulus*) at 0.545 (SE = 0.02) on the Ashland District; Spotted Towhee (*Pipilo maculatus*) at 0.569 (SE = 0.058), Red Crossbill (*Loxia curvirostra*) at 0.514 (SE = 0.059), and Red-breasted Nuthatch (*Sitta canadensis*) at 0.5 (SE = 0.059) on the Chalk Buttes Unit of the Sioux District in 2012; Red-breasted Nuthatch at 0.538 (SE = 0.138) on the Chalk Buttes unit of the Sioux District in 2014; House Wren at 0.712 (SE = 0.059) on the Ekalaka Hills unit of the Sioux District in 2014; House Wren at 0.71 (SE = 0.081) on the East Short Pines unit of the Sioux District in 2012; House Wren at 1.0 (SE = 0), Western Wood-Pewee (*Contopus sordidulus*) at 0.641 (SE = 0.077), and Chipping Sparrow (*Spizella passerina*) at 0.59 (SE = 0.079) on the East Short

Pines unit of the Sioux District in 2013; House Wren at 0.784 (SE = 0.068) on the East Short Pines unit of the Sioux District in 2014; House Wren at 0.659 (SE = 0.074) on the Slim Buttes unit of the Sioux District in 2012; House Wren at 0.753 (SE = 0.05), Spotted Towhee at 0.644 (SE = 0.056), Ovenbird at 0.63 (SE = 0.057), and Red-breasted Nuthatch at 0.507 (SE = 0.059) on the Slim Buttes unit of the Sioux District in

2013; Spotted Towhee at 0.759 (SE = 0.058) and House Wren at 0.685 (SE = 0.063) on the Slim Buttes unit of the Sioux District in 2014; and House Wren at 0.8 (SE = 0.06), Red-breasted Nuthatch at 0.711 (SE = 0.068), Spotted Towhee at 0.578 (SE = 0.074), and Chipping Sparrow at 0.556 (SE = 0.074) on the North Cave Hills unit of the Sioux District in 2012 (Tables 2-14).

Survey Recommendations

Four units on the Beartooth, Ashland, and Sioux Districts stand out as still being in need of baseline call playback surveys for Northern Goshawk. In prioritized order, these are:

- 1) The Pryor Mountains unit of the Beartooth District across all but the northeastern portion of the unit that was the focus of previous survey efforts (Figure 5). Only 13 percent of the 1,680 call stations in potentially suitable habitat have been surveyed in this unit and those surveys are somewhat out-of-date (Table 1, Appendix B);
- 2) The Beartooth unit of the Beartooth District on portions of the lower Stillwater River, the lower West Rosebud River, and some areas southwest and south of Red Lodge (Figure 4). Approximately 58 percent of the 1,281 call stations in potentially suitable habitat have been surveyed in this unit and around 400 of those surveys are somewhat out-of-date (Table 1, Appendix B).
- 3) The Ashland District north and south of the Ten Mile road, north and northwest of the Blum Creek road, the Poker Jim Butte area, along the Lee Creek road, and the Cook Mountain area (Figure 6). While the majority of the larger forest stands that remain after the 2012 wildfires received some sampling effort in 2014, only 22% of the 2,775 call stations with potentially suitable habitat on this unit were surveyed (Table 1, Appendix B).
- 4) The West Short Pines unit of the Sioux District appears to have adequate forest cover to support a Northern Goshawk breeding territory (20 potential call stations were identified), but no baseline call playback surveys have been conducted to-date (Table 1, Figure 10).

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Figure 1. Administrative units on the Beartooth, Ashland, and Sioux Districts of the Custer Gallatin National Forest.

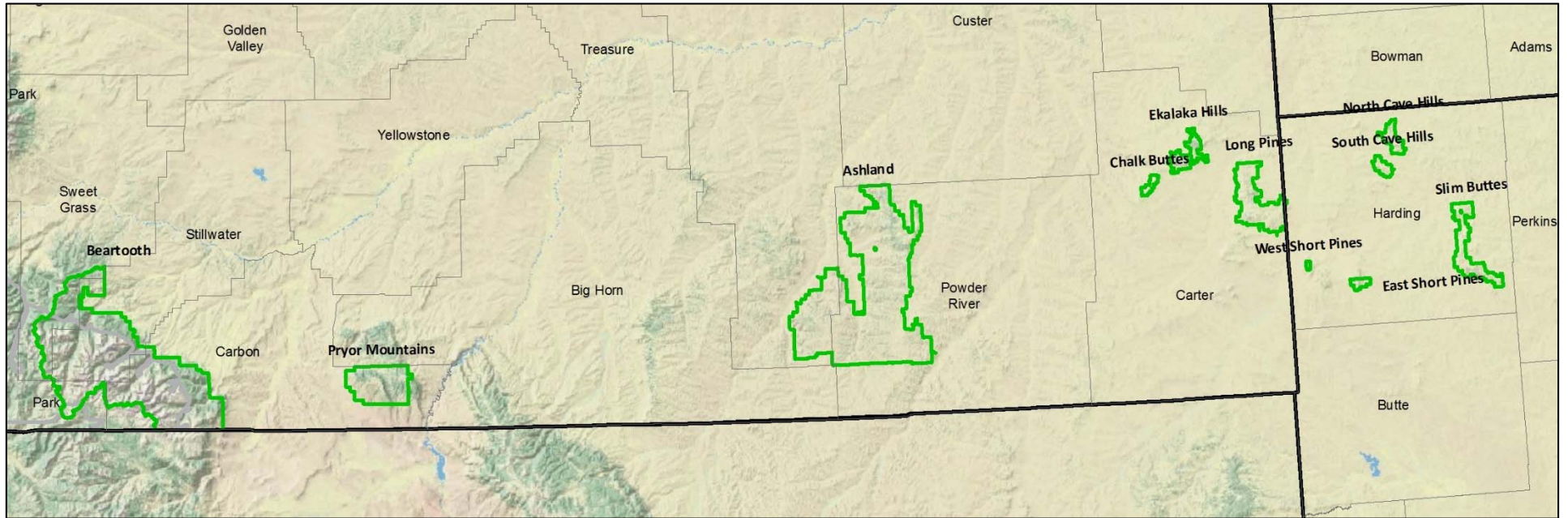


Figure 2. Northern Goshawk call station sampling grids used during the Region 1 USFS 2005 (red) and Montana Natural Heritage Program 2012-2014 (black) sampling efforts. For both sampling grids, call stations are aligned on east/west lines separated by 250 meters with call stations along each line separated by 200 meters and offset in an east/west orientation by 100 meters from call stations on adjacent lines.

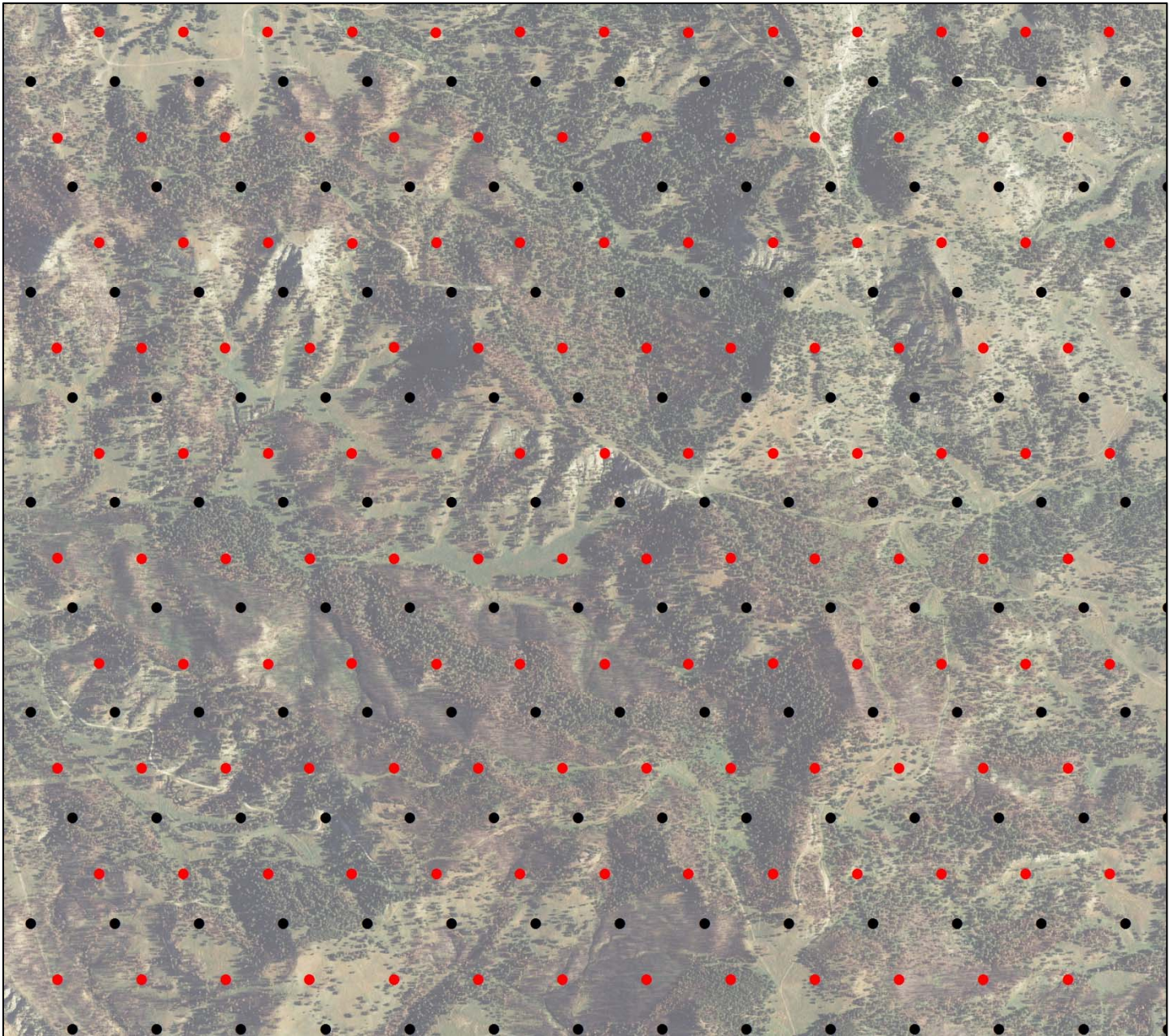


Figure 3. Example of Northern Goshawk call station sampling effort on Ashland District. Background call station grid (gray), stations that were evaluated as suitable Northern Goshawk habitat by the USFS forest stand model as of 2013 (black), and stations sampled in 2014 in order to provide at least some sampling coverage to as many areas with higher forest cover as possible (red). Note that suitable call stations that were not surveyed are either in burned areas or are never more than one call station away from a surveyed station.

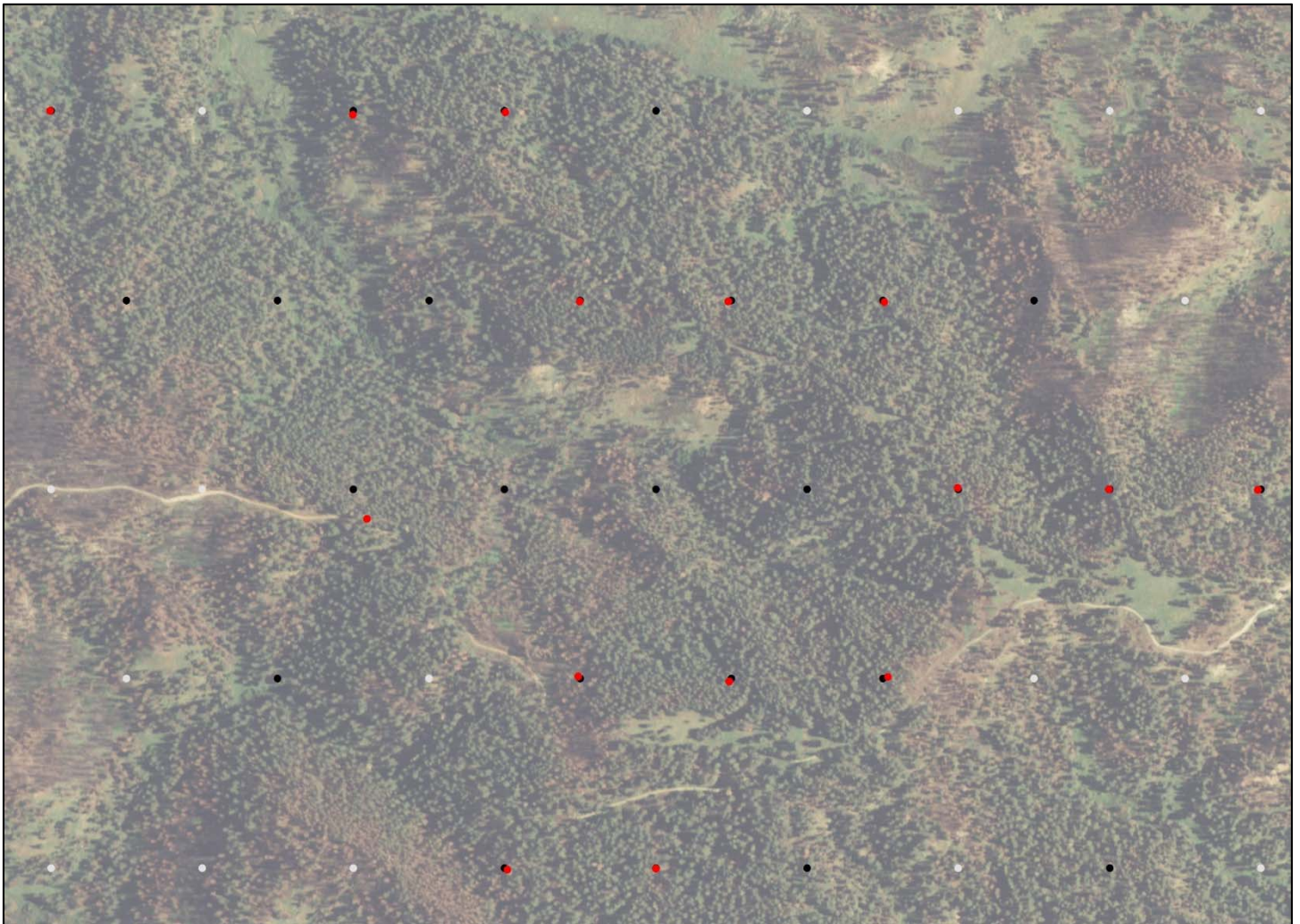


Figure 4. Northern Goshawk call stations, surveyed locations, and detections on the Beartooth unit of the Beartooth District (green line). Wilderness boundary is shown in gray. Unsurveyed call stations in areas with trees greater than 10 centimeters diameter at breast height, on slopes of less than 60 degrees, and outside of wilderness areas are shown as black dots, those surveyed prior to 2013 are shown as pink dots, and those surveyed in 2013 by MTNHP are shown as red dots. Northern Goshawk detections are shown in light green (territorial adult), dark green (nest or young), yellow (outside of breeding period and winter), and dark blue (regular winter observations) (see Tables 1-3).

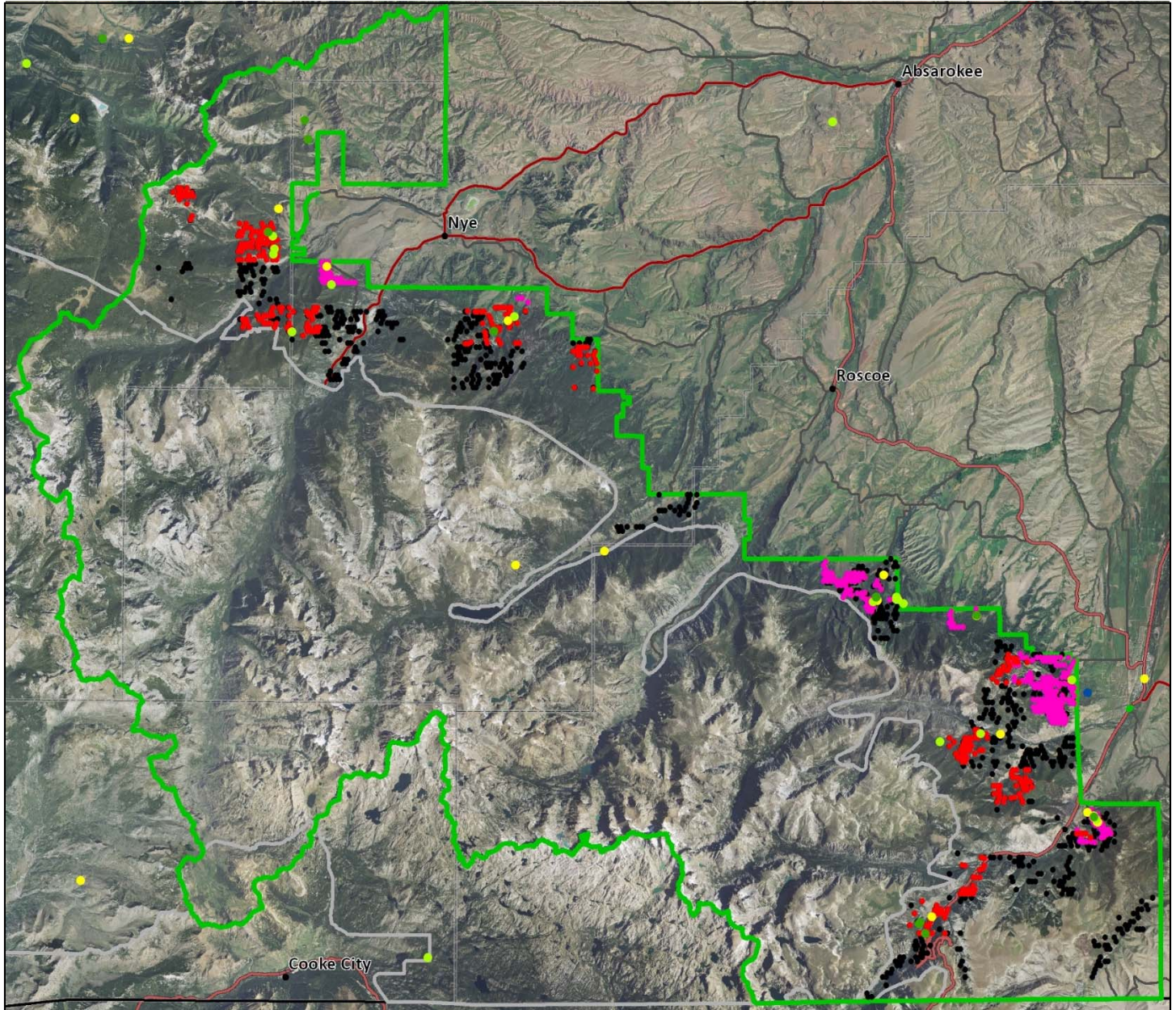


Figure 5. Northern Goshawk call stations, surveyed locations, and detections on the Pryor Mountains unit of the Beartooth District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2013 are shown as black dots, those surveyed in 2005 are shown as purple dots, those surveyed in 2010 are shown as pink dots. Northern Goshawk detections are shown in light green (territorial adults), dark green (nests or young), and yellow (outside of breeding period and winter) (see Table 1).

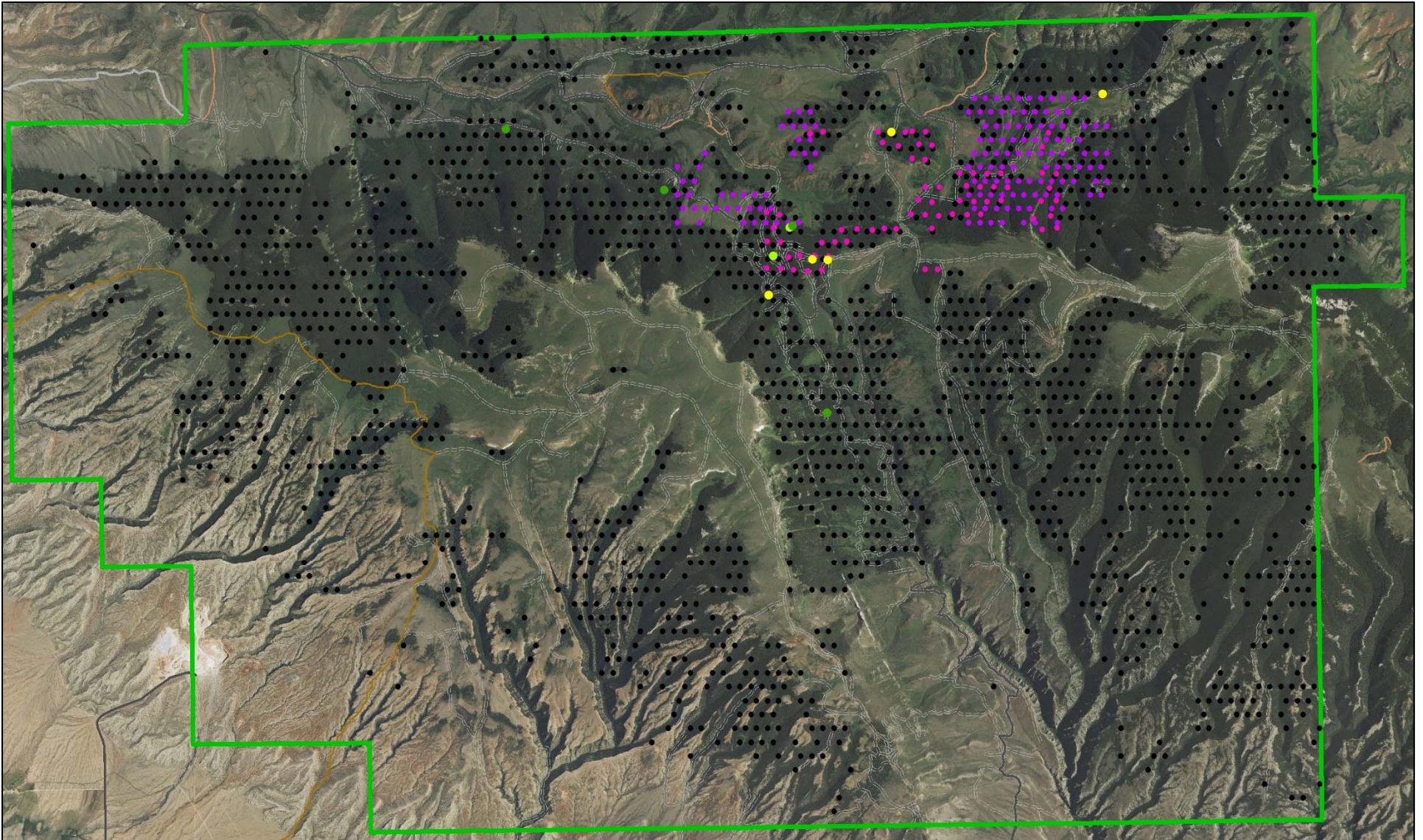


Figure 6. Northern Goshawk call stations, surveyed locations, and detections on the Ashland District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2013 are shown as black dots, those surveyed prior to 2014 are shown as pink dots, and those surveyed in 2014 by MTNHP are shown as red dots. Northern Goshawk detections are shown in light green (territorial adult), dark green (nest or young), yellow (outside of breeding period and winter), light blue (single winter observation), and dark blue (regular winter observations) (see Tables 1, 4, & 5).

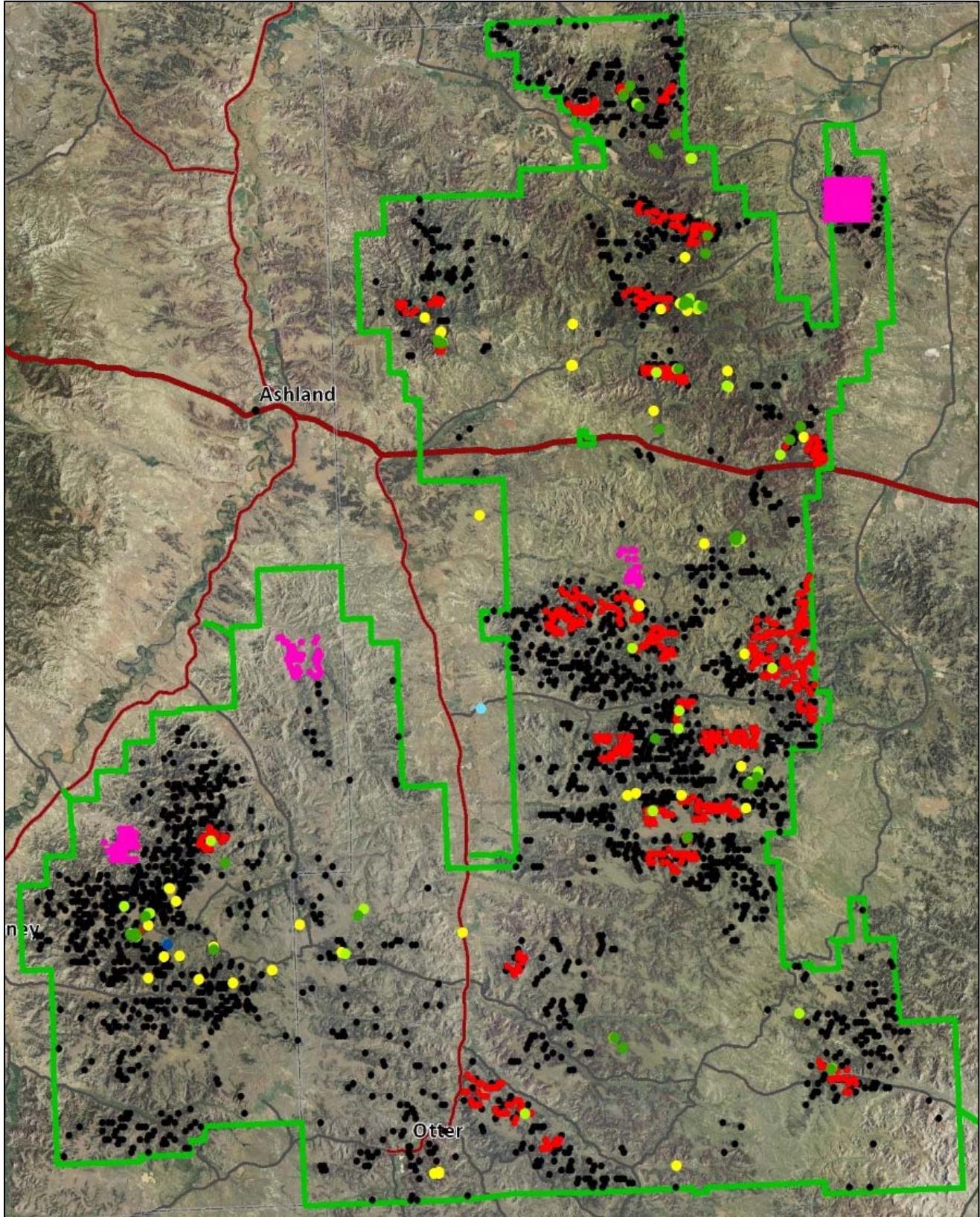


Figure 7. Northern Goshawk call stations, surveyed locations, and detections on the Chalk Buttes unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2013 are shown as black dots and those surveyed in 2012 and 2014 by MTNHP are shown as red dots. Northern Goshawk detections are shown as light green dots (territorial adult) (see Tables 1, 6, & 7).

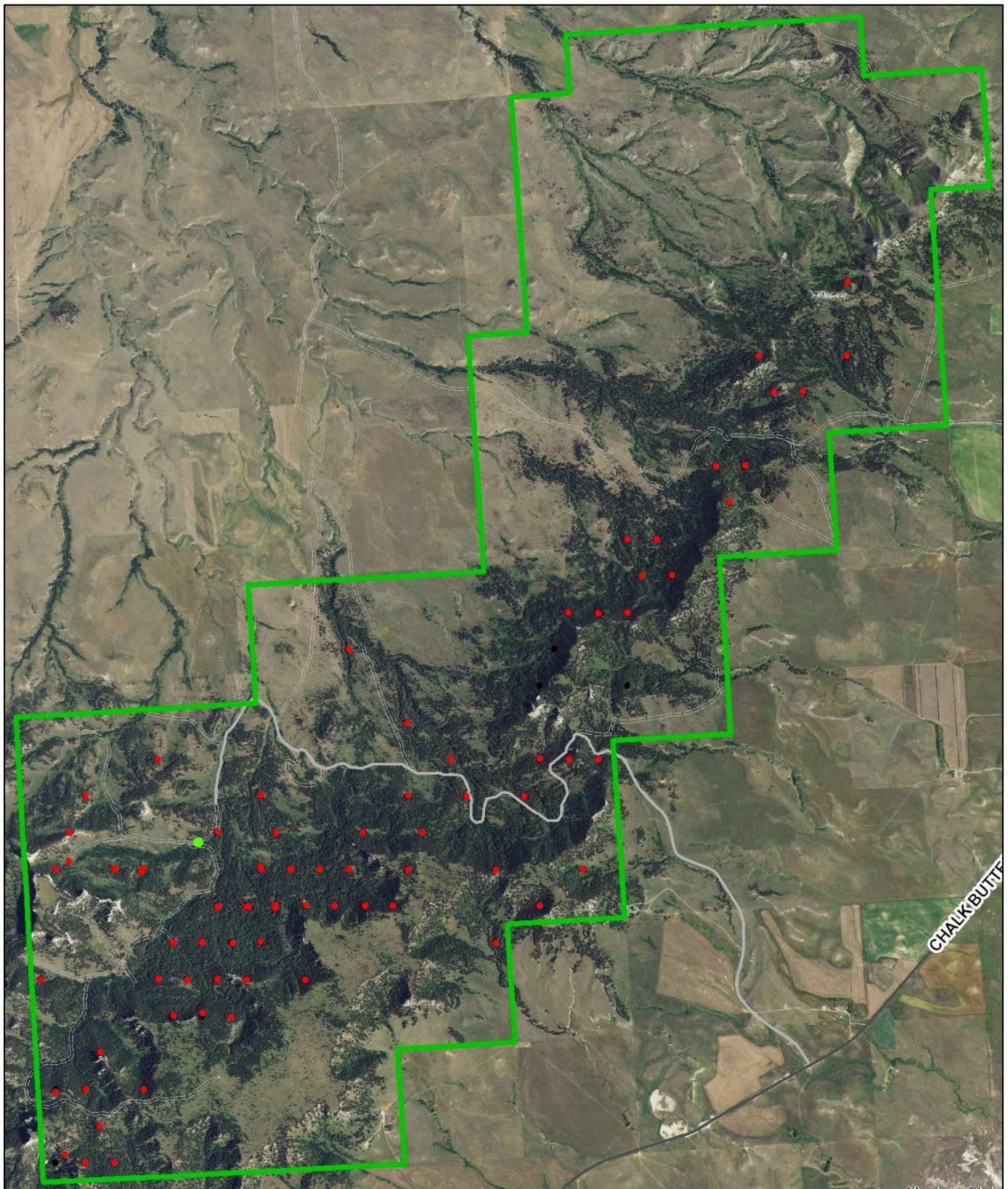


Figure 8. Northern Goshawk call stations, surveyed locations, and detections on the Ekalaka Hills unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover prior to the 2012 Dugan Fire are shown as black dots, those surveyed in 2005 are shown as pink dots, and those surveyed in 2012 and 2014 by MTNHP are shown as red dots. Northern Goshawk detections are shown in light green (territorial adult), dark green (nest or young), and yellow (outside of breeding period and winter) (see Tables 1, 8, & 9).

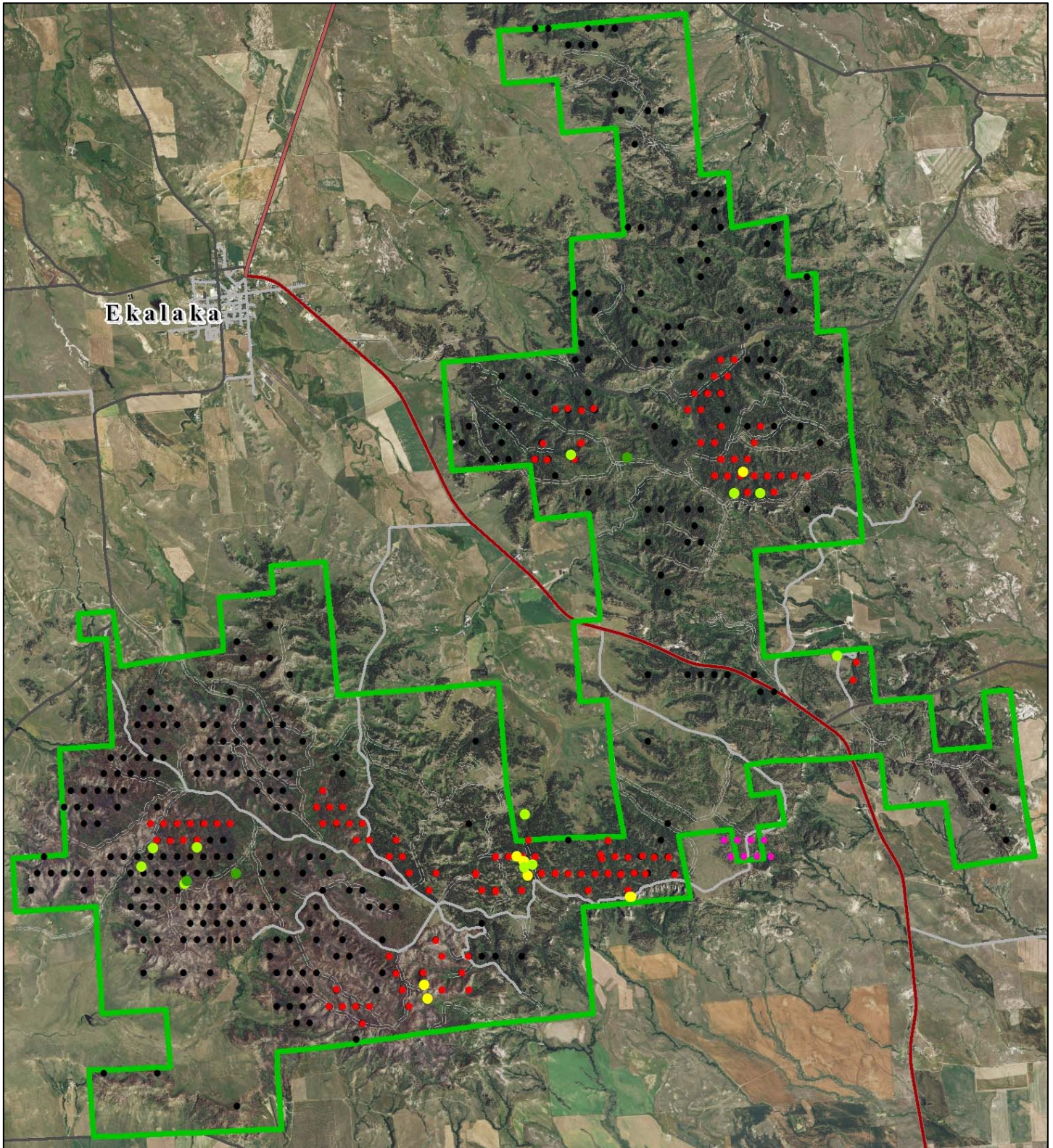


Figure 9. Northern Goshawk call stations, surveyed locations, and detections on the Long Pines unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2013 are shown as black dots and those surveyed in 2005 are shown as pink dots. Northern Goshawk detections are shown in yellow (outside of breeding period and winter) (see Table 1).

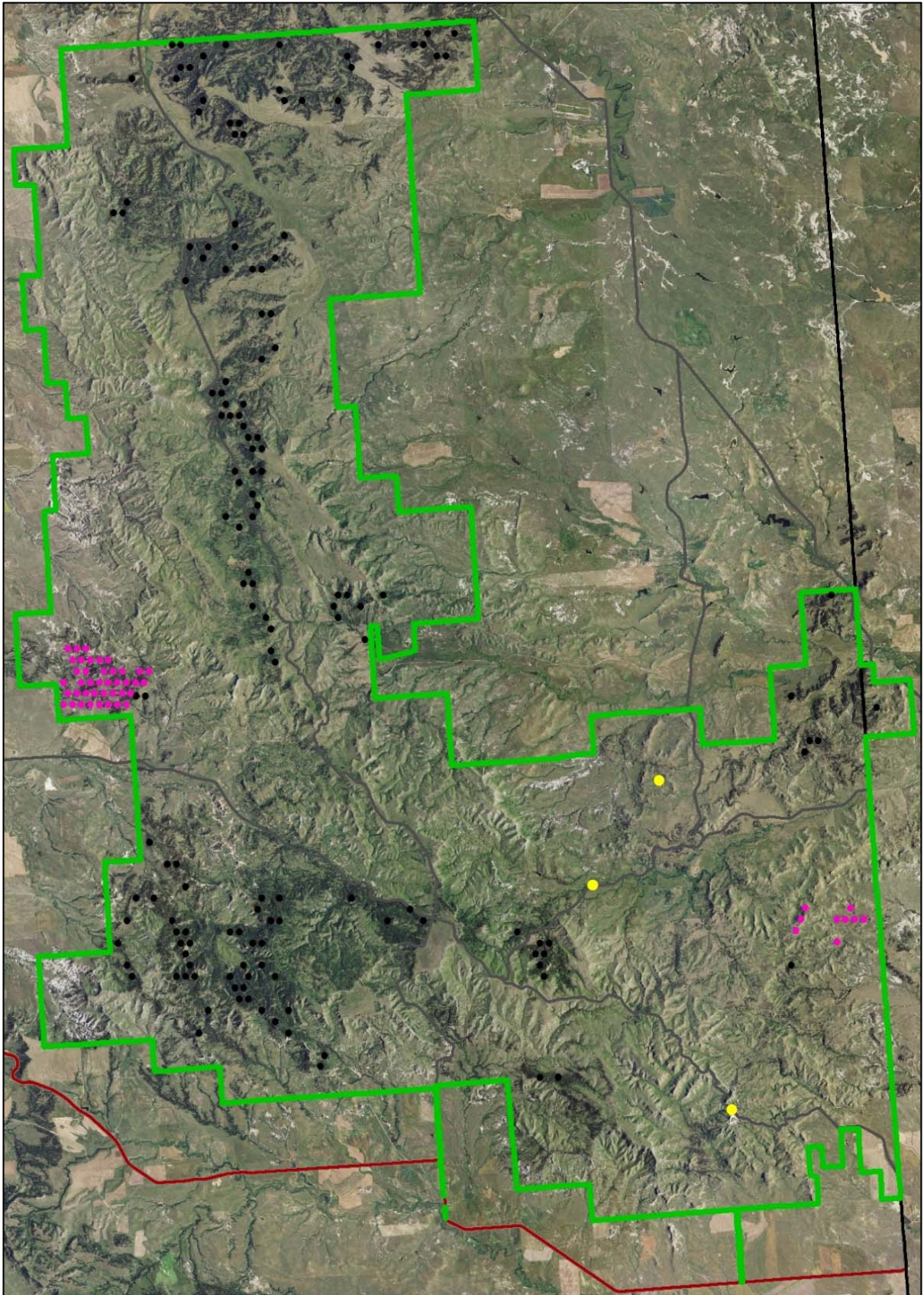


Figure 10. Northern Goshawk call stations on the West Short Pines unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2014 are shown as gray dots. There have been no surveys and there are no records of Northern Goshawks from the West Short Pine (see Table 1).

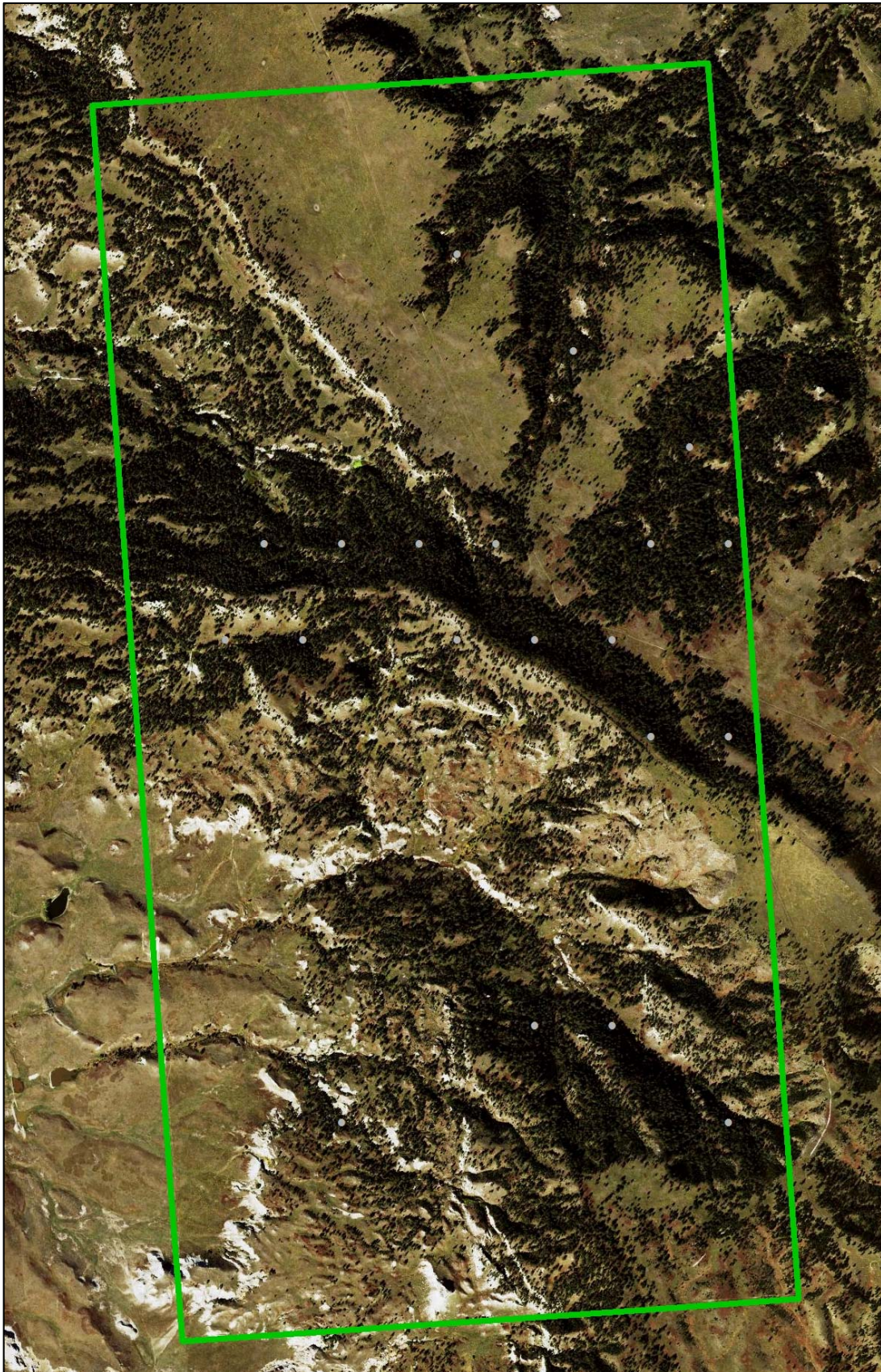


Figure 11. Northern Goshawk call stations, surveyed locations, and detections on the East Short Pines unit of the Sioux District (green line). Call stations surveyed by MTNHP in 2012, 2013, and 2014 in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2014 are shown as red dots. Northern Goshawk detections are shown in yellow (outside of breeding period and winter) (see Tables 1, 10, & 11).

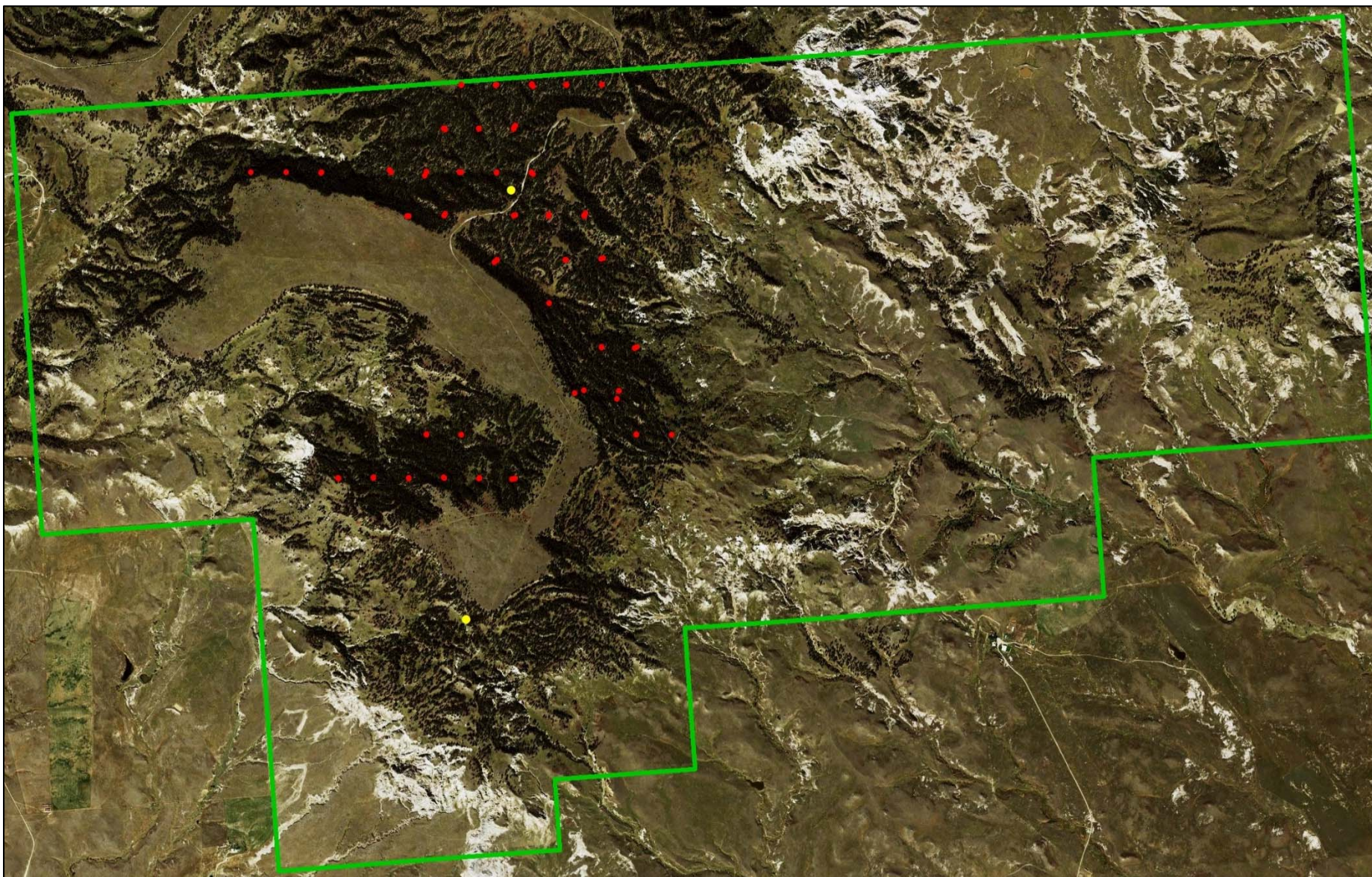


Figure 12. Northern Goshawk call stations, surveyed locations, and detections on the Slim Buttes unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest as of 2014 are shown as gray dots and those surveyed in 2012, 2013, and 2014 by MTNHP are shown as red dots. Northern Goshawk detections are shown in light green (territorial adult) and dark green (nest or young) (see Tables 1, 12, & 13).

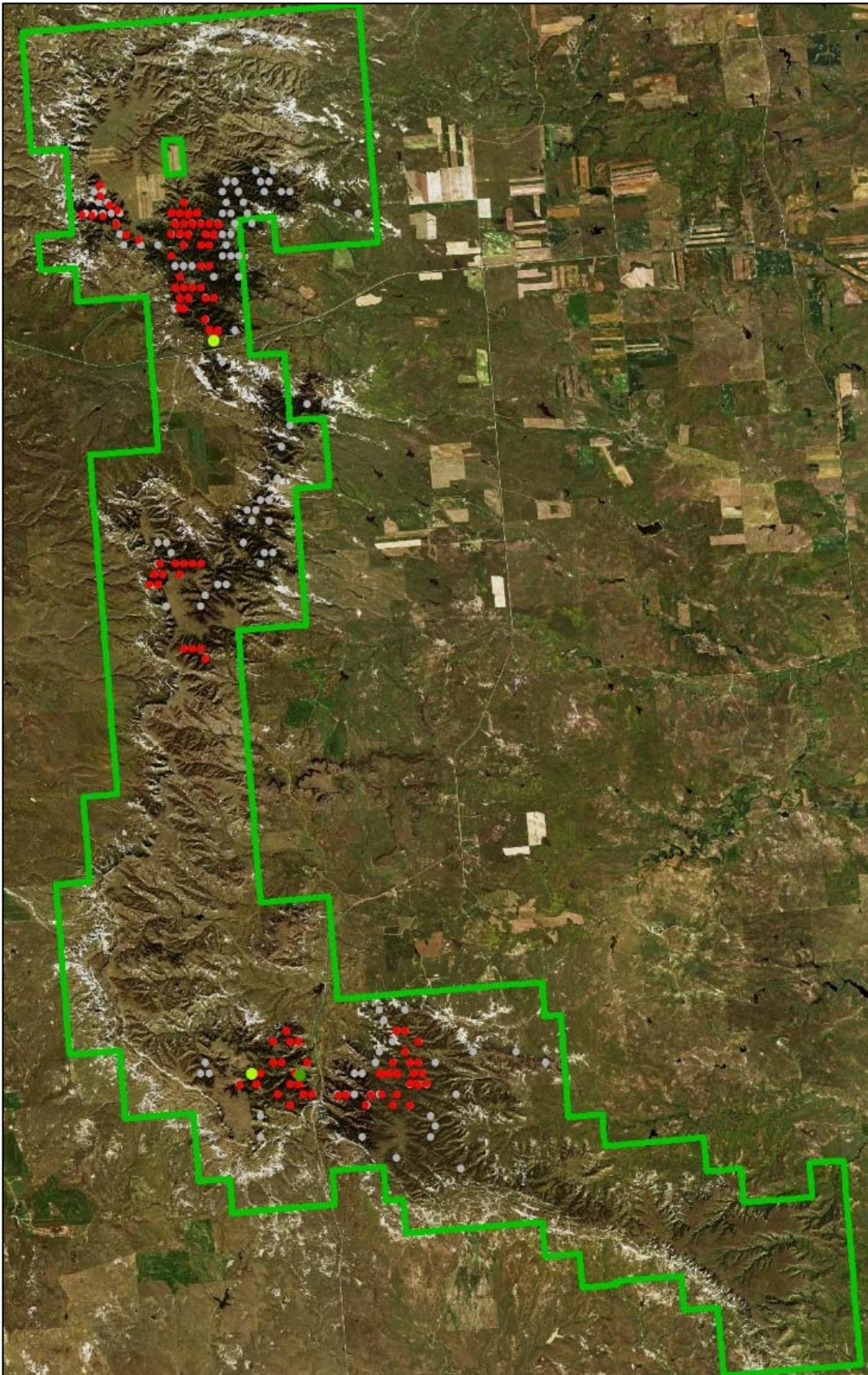


Figure 13. Northern Goshawk call stations and detections on the South Cave Hills unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2014 are shown as gray dots. No surveys have been conducted. Northern Goshawk detections are shown in yellow (outside of breeding period and winter) (see Table 1).

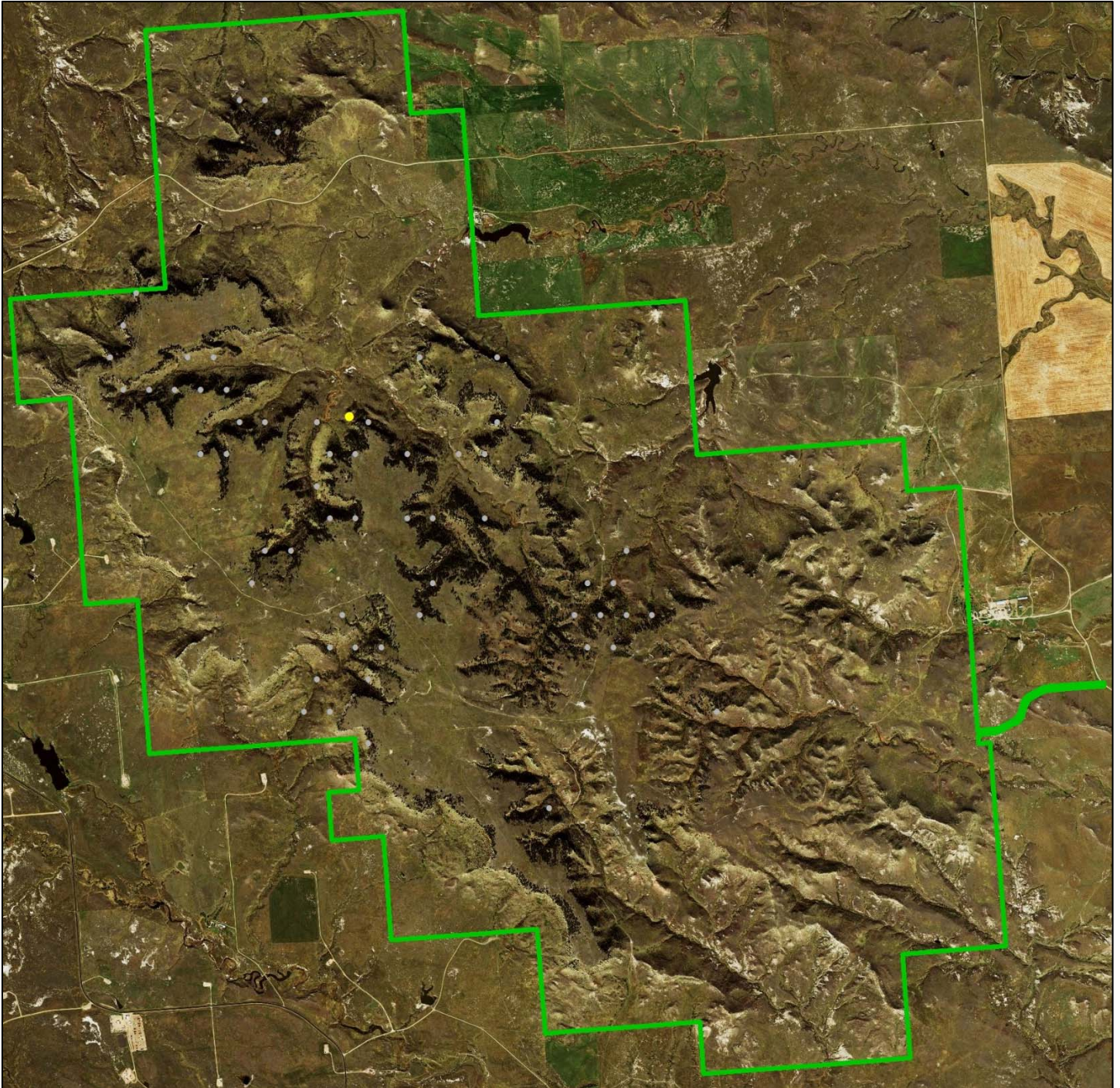


Figure 14. Northern Goshawk call stations, surveyed locations, and detections on the North Cave Hills unit of the Sioux District (green line). Unsurveyed call stations in areas predicted as suitable Northern Goshawk habitat by USFS models and with forest cover as of 2014 are shown as gray dots and those surveyed in 2012 by MTNHP are shown as red dots. Northern Goshawk detections are shown in yellow (outside of breeding period and winter) (see Tables 1, 14, & 15).

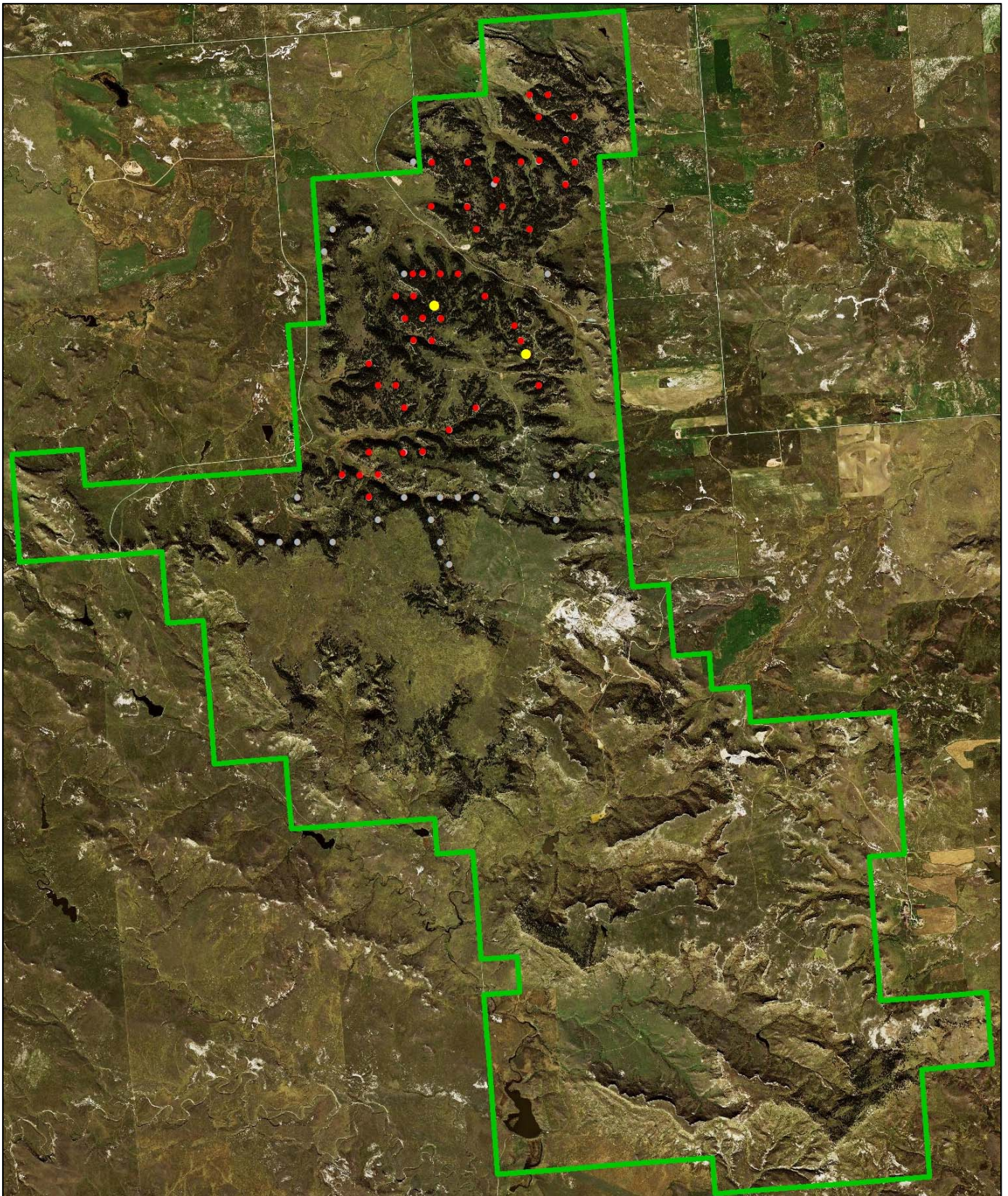


Table 1. Summary of Northern Goshawk survey efforts on units of the Beartooth, Ashland, and Sioux Ranger Districts since 2005. The Montana Natural Heritage Program conducted the 2012, 2013, and 2014 surveys.

District / Unit	Survey Year	No. Potential Call Stations	No. Call Stations Surveyed	No. Northern Goshawk Detections	Number of MT SOC/PSOC or SD Rare Species Detected	Number of Non MT SOC/PSOC or Non SD Rare Species Detected
Beartooth	2005	Unknown	145	3	1	0
	2009	1281	30	3	1	0
	2010	1281	227	2	0	0
	2013	1024	340	7	13	111
Pryors	2005	1680	145	3	0	0
	2010	1680	75	1	0	0
Ashland	2005	Unknown	234	0	0	0
	2014	2775	617	24	17	99
Chalk Buttes	2012	75	72	1	6	46
	2014	75	13	1	4	32
Ekalaka Hills	2005	398	8	0	0	0
	2012	398	94	1	7	67
	2013	NA	NA	0	3	18
	2014	Unknown	59	2	9	56
Long Pines	2005	151	49	0	0	0
West Short Pines	NA	20	NA	NA	NA	NA
East Short Pines	2012	39	31	0	2	26
	2013	39	39	0	1	31
	2014	39	37	0	0	37
Slim Buttes	2012	187	41	0	2	43
	2013	187	73	1	4	48
	2014	187	54	1	3	48
South Cave Hills	NA	58	NA	NA	NA	NA
North Cave Hills	2012	65	45	0	6	78

Table 2. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2013 surveys on the Beartooth unit of Beartooth District. The table is sorted first by Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then by species detected at higher to lower proportions of call stations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
SOC	Clark's Nutcracker	<i>Nucifraga columbiana</i>	S3	91	0.268 (0.024)
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	5	0.015 (0.007)
SOC	Brown Creeper	<i>Certhia americana</i>	S3	5	0.015 (0.007)
SOC	Peregrine Falcon	<i>Falco peregrinus</i>	S3	1	0.003 (0.003)
SOC	Green-tailed Towhee	<i>Pipilo chlorurus</i>	S3B	1	0.003 (0.003)
PSOC	Blue-eyed Darter	<i>Rhionaeschna multicolor</i>	S2S4	16	0.047 (0.011)
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	7	0.021 (0.008)
PSOC	Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>	S4B	2	0.006 (0.004)
PSOC	Rufous Hummingbird	<i>Selasphorus rufus</i>	S4B	2	0.006 (0.004)
PSOC	Uinta Ground Squirrel	<i>Urocitellus armatus</i>	S3S4	1	0.003 (0.003)
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	209	0.615 (0.026)
	Mountain Chickadee	<i>Poecile gambeli</i>	S5	112	0.329 (0.025)
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	107	0.315 (0.025)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	90	0.265 (0.024)
	Pine Siskin	<i>Spinus pinus</i>	S5	81	0.238 (0.023)
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	76	0.224 (0.023)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	74	0.218 (0.022)
	Common Raven	<i>Corvus corax</i>	S5	62	0.182 (0.021)
	Hermit Thrush	<i>Catharus guttatus</i>	S5B	62	0.182 (0.021)
	American Robin	<i>Turdus migratorius</i>	S5B	48	0.141 (0.019)
	Ruby-crowned Kinglet	<i>Regulus calendula</i>	S5B	43	0.126 (0.018)
	Swainson's Thrush	<i>Catharus ustulatus</i>	S5B	33	0.097 (0.016)
	Yellow-pine Chipmunk	<i>Tamias amoenus</i>	S5	32	0.094 (0.016)
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	29	0.085 (0.015)
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	29	0.085 (0.015)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	20	0.059 (0.013)
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	19	0.056 (0.012)
	MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	S5B	17	0.05 (0.012)
	Red Crossbill	<i>Loxia curvirostra</i>	S5	16	0.047 (0.011)
	Steller's Jay	<i>Cyanocitta stelleri</i>	S5	14	0.041 (0.011)
	Pine Grosbeak	<i>Pinicola enucleator</i>	S5	14	0.041 (0.011)
	Northern Flicker	<i>Colaptes auratus</i>	S5	13	0.038 (0.01)
	Lincoln's Sparrow	<i>Melospiza lincolni</i>	S5B	11	0.032 (0.01)
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	10	0.029 (0.009)
	Gray Jay	<i>Perisoreus canadensis</i>	S5	10	0.029 (0.009)
	Dark-eyed Junco (Pink-sided)	<i>Junco hyemalis mearnsi</i>	SNR	10	0.029 (0.009)
	American Three-toed Woodpecker	<i>Picoides dorsalis</i>	S4	9	0.026 (0.009)
	Lazuli Bunting	<i>Passerina amoena</i>	S4B	9	0.026 (0.009)
	Turkey Vulture	<i>Cathartes aura</i>	S4B	8	0.024 (0.008)
	Hammond's Flycatcher	<i>Empidonax hammondii</i>	S4B	8	0.024 (0.008)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B	6	0.018 (0.007)
	House Wren	<i>Troglodytes aedon</i>	S5B	6	0.018 (0.007)
	Golden-crowned Kinglet	<i>Regulus satrapa</i>	S5	6	0.018 (0.007)
	Pika	<i>Ochotona princeps</i>	S4	6	0.018 (0.007)
	Rocky Mountain Parnassian	<i>Parnassius smintheus</i>	S5	6	0.018 (0.007)

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	5	0.015 (0.007)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	4	0.012 (0.006)
	Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	S4B	4	0.012 (0.006)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	4	0.012 (0.006)
	Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	4	0.012 (0.006)
	Mule Deer	<i>Odocoileus hemionus</i>	S5	4	0.012 (0.006)
	European Skipper	<i>Thymelicus lineola</i>	SNA	4	0.012 (0.006)
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	3	0.009 (0.005)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	3	0.009 (0.005)
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	3	0.009 (0.005)
	White-throated Sparrow	<i>Zonotrichia albicollis</i>	SNA	3	0.009 (0.005)
	Elk	<i>Cervus canadensis</i>	S5	3	0.009 (0.005)
	Great Basin Wood Nymph	<i>Cercyonis sthenele</i>	SU	3	0.009 (0.005)
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B	2	0.006 (0.004)
	Swainson's Hawk	<i>Buteo swainsoni</i>	S4B	2	0.006 (0.004)
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	2	0.006 (0.004)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	2	0.006 (0.004)
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	2	0.006 (0.004)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	2	0.006 (0.004)
	Field Crescent	<i>Phyciodes pulchella</i>	S5	2	0.006 (0.004)
	Northern Harrier	<i>Circus cyaneus</i>	S4B	1	0.003 (0.003)
	Cooper's Hawk	<i>Accipiter cooperii</i>	S4B	1	0.003 (0.003)
	Prairie Falcon	<i>Falco mexicanus</i>	S4	1	0.003 (0.003)
	Ruffed Grouse	<i>Bonasa umbellus</i>	S4	1	0.003 (0.003)
	Sandhill Crane	<i>Grus canadensis</i>	S5B,S2N	1	0.003 (0.003)
	Calliope Hummingbird	<i>Selasphorus calliope</i>	S5B	1	0.003 (0.003)
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	1	0.003 (0.003)
	Northern Flicker (Red-shafted)	<i>Colaptes auratus cafer</i>	SNRB	1	0.003 (0.003)
	Dusky Flycatcher	<i>Empidonax oberholseri</i>	S5B	1	0.003 (0.003)
	Orange-crowned Warbler	<i>Oreothlypis celata</i>	S5B	1	0.003 (0.003)
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B	1	0.003 (0.003)
	Song Sparrow	<i>Melospiza melodia</i>	S5B	1	0.003 (0.003)
	Black Bear	<i>Ursus americanus</i>	S5	1	0.003 (0.003)
	Clouded Sulphur	<i>Colias philodice</i>	S5	1	0.003 (0.003)
	Orange Sulphur	<i>Colias eurytheme</i>	S5	1	0.003 (0.003)
	Silvery Blue	<i>Glaucopsyche lygdamus</i>	S5	1	0.003 (0.003)
	Melissa Blue	<i>Plebejus melissa</i>	S5	1	0.003 (0.003)
	Silver-bordered Fritillary	<i>Boloria selene</i>	S5	1	0.003 (0.003)
	Arctic Fritillary	<i>Boloria chariclea</i>	S5	1	0.003 (0.003)
	Hayden's Ringlet	<i>Coenonympha haydenii</i>	S4	1	0.003 (0.003)
	Saint Lawrence Tiger Moth	<i>Platarctia parthenos</i>	SNR	1	0.003 (0.003)

Table 3. Species detected, and numbers of unique spatial observations, on the Beartooth unit of Beartooth District in 2013. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then on numbers of observations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Clark's Nutcracker	<i>Nucifraga columbiana</i>	S3	99
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	7
SOC	Brown Creeper	<i>Certhia americana</i>	S3	6
SOC	Green-tailed Towhee	<i>Pipilo chlorurus</i>	S3B	4
SOC	Peregrine Falcon	<i>Falco peregrinus</i>	S3	2
SOC	Cassin's Finch	<i>Haemorhous cassinii</i>	S3	2
SOC	Brewer's Sparrow	<i>Spizella breweri</i>	S3B	1
PSOC	Blue-eyed Darner	<i>Rhionaeschna multicolor</i>	S2S4	21
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	8
PSOC	Broad-tailed Hummingbird	<i>Selasphorus platycercus</i>	S4B	3
PSOC	Uinta Ground Squirrel	<i>Urocitellus armatus</i>	S3S4	3
PSOC	Rufous Hummingbird	<i>Selasphorus rufus</i>	S4B	2
PSOC	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	S4B	1
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	216
	Mountain Chickadee	<i>Poecile gambeli</i>	S5	118
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	114
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	97
	Pine Siskin	<i>Spinus pinus</i>	S5	85
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	83
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	77
	Hermit Thrush	<i>Catharus guttatus</i>	S5B	69
	Common Raven	<i>Corvus corax</i>	S5	63
	American Robin	<i>Turdus migratorius</i>	S5B	53
	Ruby-crowned Kinglet	<i>Regulus calendula</i>	S5B	50
	Yellow-pine Chipmunk	<i>Tamias amoenus</i>	S5	50
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	37
	Swainson's Thrush	<i>Catharus ustulatus</i>	S5B	35
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	32
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	25
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	21
	Red Crossbill	<i>Loxia curvirostra</i>	S5	20
	MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	S5B	17
	Northern Flicker	<i>Colaptes auratus</i>	S5	15
	Gray Jay	<i>Perisoreus canadensis</i>	S5	14
	Steller's Jay	<i>Cyanocitta stelleri</i>	S5	14
	Lincoln's Sparrow	<i>Melospiza lincolni</i>	S5B	14
	Pine Grosbeak	<i>Pinicola enucleator</i>	S5	14
	American Three-toed Woodpecker	<i>Picoides dorsalis</i>	S4	13
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	12
	Dark-eyed Junco (Pink-sided)	<i>Junco hyemalis mearnsi</i>	SNR	12
	Turkey Vulture	<i>Cathartes aura</i>	S4B	10
	Lazuli Bunting	<i>Passerina amoena</i>	S4B	10

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Pika	<i>Ochotona princeps</i>	S4	10
	European Skipper	<i>Thymelicus lineola</i>	SNA	10
	Rocky Mountain Parnassian	<i>Parnassius smintheus</i>	S5	10
	Clouded Sulphur	<i>Colias philodice</i>	S5	10
	Hammond's Flycatcher	<i>Empidonax hammondii</i>	S4B	9
	Red-naped Sapsucker	<i>Sphyrapicus nuchalis</i>	S4B	8
	Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B	8
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	8
	Elk	<i>Cervus canadensis</i>	S5	7
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	7
	House Wren	<i>Troglodytes aedon</i>	S5B	6
	Golden-crowned Kinglet	<i>Regulus satrapa</i>	S5	6
	Mule Deer	<i>Odocoileus hemionus</i>	S5	6
	Field Crescent	<i>Phyciodes pulchella</i>	S5	6
	Dusky Grouse	<i>Dendragapus obscurus</i>	S4	5
	Silver-bordered Fritillary	<i>Boloria selene</i>	S5	5
	Great Basin Wood Nymph	<i>Cercyonis sthenele</i>	SU	5
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B	4
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	4
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	4
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	4
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	4
	Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	4
	White-throated Sparrow	<i>Zonotrichia albicollis</i>	SNA	4
	Columbia Spotted Frog	<i>Rana luteiventris</i>	S4	3
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	3
	Moose	<i>Alces americanus</i>	S4	3
	Terrestrial Gartersnake	<i>Thamnophis elegans</i>	S5	3
	Orange Sulphur	<i>Colias eurytheme</i>	S5	3
	Purplish Copper	<i>Lycaena helloides</i>	S5	3
	Silvery Blue	<i>Glaucopteryx lygdamus</i>	S5	3
	Melissa Blue	<i>Plebejus melissa</i>	S5	3
	Weidemeyer's Admiral	<i>Limenitis weidemeyerii</i>	S5	3
	Northern Harrier	<i>Circus cyaneus</i>	S4B	2
	Cooper's Hawk	<i>Accipiter cooperii</i>	S4B	2
	Swainson's Hawk	<i>Buteo swainsoni</i>	S4B	2
	Ruffed Grouse	<i>Bonasa umbellus</i>	S4	2
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	2
	Dusky Flycatcher	<i>Empidonax oberholseri</i>	S5B	2
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	2
	American Dipper	<i>Cinclus mexicanus</i>	S5	2
	Mountain Bluebird	<i>Sialia currucoides</i>	S5B	2
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	2
	Vesper Sparrow	<i>Pooecetes gramineus</i>	S5B	2
	White-tailed Jack Rabbit	<i>Lepus townsendii</i>	S4	2
	Black Bear	<i>Ursus americanus</i>	S5	2
	Mountain Lion	<i>Puma concolor</i>	S4	2

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Persius Duskywing	<i>Erynnis persius</i>	S4	2
	Rocky Mountain Dotted Blue	<i>Euphilotes ancilla</i>	S5	2
	Satyr Comma	<i>Polygonia satyrus</i>	S5	2
	Milbert's Tortoiseshell	<i>Aglais milberti</i>	S5	2
	Hayden's Ringlet	<i>Coenonympha haydenii</i>	S4	2
	Emerald Spreadwing	<i>Lestes dryas</i>	S5	2
	American Kestrel	<i>Falco sparverius</i>	S5	1
	Prairie Falcon	<i>Falco mexicanus</i>	S4	1
	Sandhill Crane	<i>Grus canadensis</i>	S5B,S2N	1
	Great Horned Owl	<i>Bubo virginianus</i>	S5	1
	Calliope Hummingbird	<i>Selasphorus calliope</i>	S5B	1
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	1
	Northern Flicker (Red-shafted)	<i>Colaptes auratus cafer</i>	SNRB	1
	Olive-sided Flycatcher	<i>Contopus cooperi</i>	S4B	1
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	1
	Orange-crowned Warbler	<i>Oreothlypis celata</i>	S5B	1
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B	1
	Song Sparrow	<i>Melospiza melodia</i>	S5B	1
	Western Meadowlark	<i>Sturnella neglecta</i>	S5B	1
	Yellow-bellied Marmot	<i>Marmota flaviventris</i>	S4	1
	Long-tailed Vole	<i>Microtus longicaudus</i>	S4	1
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	S5	1
	Pale Swallowtail	<i>Papilio eurymedon</i>	S5	1
	Western White	<i>Pontia occidentalis</i>	S5	1
	Mariposa Copper	<i>Lycaena mariposa</i>	S5	1
	Thicket Hairstreak	<i>Callophrys spinetorum</i>	S5	1
	Western Tailed Blue	<i>Cupido amyntula</i>	S5	1
	Zerene Fritillary	<i>Speyeria zerene</i>	S5	1
	Callippe Fritillary	<i>Speyeria callippe</i>	S5	1
	Arctic Fritillary	<i>Boloria chariclea</i>	S5	1
	California Tortoiseshell	<i>Nymphalis californica</i>	S5	1
	Painted Lady	<i>Vanessa cardui</i>	S5	1
	Saint Lawrence Tiger Moth	<i>Platarctia parthenos</i>	SNR	1
	American Emerald	<i>Cordulia shurtleffii</i>	S4S5	1
	White-faced Meadowhawk	<i>Sympetrum obtrusum</i>	S5	1

Table 4. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2014 surveys on the Ashland District. The table is sorted first by Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then by species detected at higher to lower proportions of call stations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	21	0.034 (0.007)
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	12	0.019 (0.005)
SOC	Black-backed Woodpecker	<i>Picoides arcticus</i>	S3	5	0.008 (0.004)
SOC	Golden Eagle	<i>Aquila chrysaetos</i>	S3	3	0.005 (0.003)
SOC	Brown Creeper	<i>Certhia americana</i>	S3	3	0.005 (0.003)
SOC	Veery	<i>Catharus fuscescens</i>	S3B	2	0.003 (0.002)
SOC	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	S3B	1	0.002 (0.002)
SOC	Clark's Nutcracker	<i>Nucifraga columbiana</i>	S3	1	0.002 (0.002)
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	98	0.159 (0.015)
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	87	0.141 (0.014)
PSOC	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	S4B	1	0.002 (0.002)
PSOC	Porcupine	<i>Erethizon dorsatum</i>	S4	1	0.002 (0.002)
	American Robin	<i>Turdus migratorius</i>	S5B	356	0.577 (0.02)
	House Wren	<i>Troglodytes aedon</i>	S5B	348	0.564 (0.02)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	336	0.545 (0.02)
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	257	0.417 (0.02)
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	246	0.399 (0.02)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	227	0.368 (0.019)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	114	0.185 (0.016)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	112	0.182 (0.016)
	Northern Flicker	<i>Colaptes auratus</i>	S5	101	0.164 (0.015)
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	97	0.157 (0.015)
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	96	0.156 (0.015)
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	96	0.156 (0.015)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	95	0.154 (0.015)
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	91	0.147 (0.014)
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	76	0.123 (0.013)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	60	0.097 (0.012)
	American Goldfinch	<i>Spinus tristis</i>	S5B	57	0.092 (0.012)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	55	0.089 (0.011)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	46	0.075 (0.011)
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B	39	0.063 (0.01)
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	37	0.06 (0.01)
	Mourning Dove	<i>Zenaida macroura</i>	S5B	36	0.058 (0.009)
	Red Crossbill	<i>Loxia curvirostra</i>	S5	35	0.057 (0.009)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	SNR	33	0.053 (0.009)
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	30	0.049 (0.009)
	Yellow-breasted Chat	<i>Icteria virens</i>	S5B	29	0.047 (0.009)
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	24	0.039 (0.008)
	Vesper Sparrow	<i>Poocetes gramineus</i>	S5B	24	0.039 (0.008)
	Pine Siskin	<i>Spinus pinus</i>	S5	22	0.036 (0.007)

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
	Cooper's Hawk	<i>Accipiter cooperii</i>	S4B	18	0.029 (0.007)
	Turkey Vulture	<i>Cathartes aura</i>	S4B	17	0.028 (0.007)
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	17	0.028 (0.007)
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	14	0.023 (0.006)
	Western Meadowlark	<i>Sturnella neglecta</i>	S5B	14	0.023 (0.006)
	Least Chipmunk	<i>Tamias minimus</i>	S4	14	0.023 (0.006)
	Pygmy Nuthatch	<i>Sitta pygmaea</i>	S4	13	0.021 (0.006)
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	S5	13	0.021 (0.006)
	American Kestrel	<i>Falco sparverius</i>	S5	12	0.019 (0.005)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B	12	0.019 (0.005)
	Two-tailed Swallowtail	<i>Papilio multicaudata</i>	S5	12	0.019 (0.005)
	Mountain Cottontail	<i>Sylvilagus nuttallii</i>	S4	11	0.018 (0.005)
	Black-billed Magpie	<i>Pica hudsonia</i>	S5	10	0.016 (0.005)
	Gray Catbird	<i>Dumetella carolinensis</i>	S5B	9	0.015 (0.005)
	Mule Deer	<i>Odocoileus hemionus</i>	S5	9	0.015 (0.005)
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	8	0.013 (0.005)
	Woodhouse's Toad	<i>Anaxyrus woodhousii</i>	S4	7	0.011 (0.004)
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	7	0.011 (0.004)
	Black Bear	<i>Ursus americanus</i>	S5	6	0.01 (0.004)
	Least Flycatcher	<i>Empidonax minimus</i>	S5B	5	0.008 (0.004)
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B	5	0.008 (0.004)
	Bullock's Oriole	<i>Icterus bullockii</i>	S5B	5	0.008 (0.004)
	Lazuli Bunting	<i>Passerina amoena</i>	S4B	4	0.006 (0.003)
	Coyote	<i>Canis latrans</i>	S5	4	0.006 (0.003)
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	4	0.006 (0.003)
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B	3	0.005 (0.003)
	Western Kingbird	<i>Tyrannus verticalis</i>	S5B	3	0.005 (0.003)
	Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	3	0.005 (0.003)
	Elk	<i>Cervus canadensis</i>	S5	3	0.005 (0.003)
	Upland Sandpiper	<i>Bartramia longicauda</i>	S4B	2	0.003 (0.002)
	Great Horned Owl	<i>Bubo virginianus</i>	S5	2	0.003 (0.002)
	Say's Phoebe	<i>Sayornis saya</i>	S5B	2	0.003 (0.002)
	Mountain Bluebird	<i>Sialia currucoides</i>	S5B	2	0.003 (0.002)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	2	0.003 (0.002)
	Terrestrial Gartersnake	<i>Thamnophis elegans</i>	S5	2	0.003 (0.002)
	Mallard	<i>Anas platyrhynchos</i>	S5	1	0.002 (0.002)
	Merlin	<i>Falco columbarius</i>	S4	1	0.002 (0.002)
	Northern Flicker (Red-shafted)	<i>Colaptes auratus cafer</i>	SNRB	1	0.002 (0.002)
	Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5B	1	0.002 (0.002)
	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	S5B	1	0.002 (0.002)
	Ruby-crowned Kinglet	<i>Regulus calendula</i>	S5B	1	0.002 (0.002)
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	1	0.002 (0.002)
	Yellow-rumped Warbler (Audubon's)	<i>Setophaga coronata auduboni</i>	S5B	1	0.002 (0.002)
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	1	0.002 (0.002)
	Song Sparrow	<i>Melospiza melodia</i>	S5B	1	0.002 (0.002)

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
	Thirteen-lined Ground Squirrel	<i>Ictidomys tridecemlineatus</i>	S4	1	0.002 (0.002)
	Striped Skunk	<i>Mephitis mephitis</i>	S5	1	0.002 (0.002)
	Pronghorn	<i>Antilocapra americana</i>	S5	1	0.002 (0.002)
	Gophersnake	<i>Pituophis catenifer</i>	S5	1	0.002 (0.002)
	Prairie Rattlesnake	<i>Crotalus viridis</i>	S4	1	0.002 (0.002)

Table 5. Species detected, and numbers of unique spatial observations, on the Ashland District in 2014. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then on numbers of observations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	24
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	13
SOC	Black-backed Woodpecker	<i>Picoides arcticus</i>	S3	5
SOC	Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	S3	4
SOC	Golden Eagle	<i>Aquila chrysaetos</i>	S3	3
SOC	Brown Creeper	<i>Certhia americana</i>	S3	3
SOC	Veery	<i>Catharus fuscescens</i>	S3B	2
SOC	Plains Hog-nosed Snake	<i>Heterodon nasicus</i>	S2	2
SOC	Greater Sage-Grouse	<i>Centrocercus urophasianus</i>	S2	1
SOC	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	S3B	1
SOC	Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	S3	1
SOC	Clark's Nutcracker	<i>Nucifraga columbiana</i>	S3	1
SOC	Snapping Turtle	<i>Chelydra serpentina</i>	S3	1
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	102
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	92
PSOC	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	S4B	9
PSOC	Porcupine	<i>Erethizon dorsatum</i>	S4	3
	American Robin	<i>Turdus migratorius</i>	S5B	366
	House Wren	<i>Troglodytes aedon</i>	S5B	359
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	346
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	261
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	253
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	233
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	119
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	117
	Northern Flicker	<i>Colaptes auratus</i>	S5	106
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	105
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	101
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	101
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	99
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	99
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	79
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	62
	American Goldfinch	<i>Spinus tristis</i>	S5B	61
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	56
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	51
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	40
	Mourning Dove	<i>Zenaida macroura</i>	S5B	39
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B	39
	Red Crossbill	<i>Loxia curvirostra</i>	S5	39
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	38
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	SNR	34

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Vesper Sparrow	<i>Poocetes gramineus</i>	S5B	32
	Yellow-breasted Chat	<i>Icteria virens</i>	S5B	29
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	24
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	24
	Pine Siskin	<i>Spinus pinus</i>	S5	24
	Least Chipmunk	<i>Tamias minimus</i>	S4	21
	Western Meadowlark	<i>Sturnella neglecta</i>	S5B	20
	Mountain Cottontail	<i>Sylvilagus nuttallii</i>	S4	20
	Cooper's Hawk	<i>Accipiter cooperii</i>	S4B	19
	Turkey Vulture	<i>Cathartes aura</i>	S4B	18
	American Kestrel	<i>Falco sparverius</i>	S5	17
	Woodhouse's Toad	<i>Anaxyrus woodhousii</i>	S4	15
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	15
	Pygmy Nuthatch	<i>Sitta pygmaea</i>	S4	13
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	S5	13
	Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B	12
	Two-tailed Swallowtail	<i>Papilio multicaudata</i>	S5	12
	Black-billed Magpie	<i>Pica hudsonia</i>	S5	11
	Black Bear	<i>Ursus americanus</i>	S5	10
	Mule Deer	<i>Odocoileus hemionus</i>	S5	10
	Gray Catbird	<i>Dumetella carolinensis</i>	S5B	9
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B	9
	Coyote	<i>Canis latrans</i>	S5	9
	Least Flycatcher	<i>Empidonax minimus</i>	S5B	8
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	8
	Bullock's Oriole	<i>Icterus bullockii</i>	S5B	8
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	7
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	7
	Great Horned Owl	<i>Bubo virginianus</i>	S5	5
	Say's Phoebe	<i>Sayornis saya</i>	S5B	5
	Western Kingbird	<i>Tyrannus verticalis</i>	S5B	5
	Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5B	5
	Lazuli Bunting	<i>Passerina amoena</i>	S4B	5
	Prairie Rattlesnake	<i>Crotalus viridis</i>	S4	5
	Ring-necked Pheasant	<i>Phasianus colchicus</i>	SNA	4
	Mountain Bluebird	<i>Sialia currucoides</i>	S5B	4
	Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	4
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	4
	Mallard	<i>Anas platyrhynchos</i>	S5	3
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B	3
	Upland Sandpiper	<i>Bartramia longicauda</i>	S4B	3
	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	S5B	3
	Song Sparrow	<i>Melospiza melodia</i>	S5B	3
	Elk	<i>Cervus canadensis</i>	S5	3
	Sandhill Crane	<i>Grus canadensis</i>	S5B,S2N	2
	Rock Pigeon	<i>Columba livia</i>	SNA	2
	Tree Swallow	<i>Tachycineta bicolor</i>	S5B	2

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	2
	Yellow-rumped Warbler (Audubon's)	<i>Setophaga coronata auduboni</i>	S5B	2
	Pronghorn	<i>Antilocapra americana</i>	S5	2
	Painted Turtle	<i>Chrysemys picta</i>	S4	2
	Gophersnake	<i>Pituophis catenifer</i>	S5	2
	Terrestrial Gartersnake	<i>Thamnophis elegans</i>	S5	2
	Canada Goose	<i>Branta canadensis</i>	S5B	1
	Merlin	<i>Falco columbarius</i>	S4	1
	Killdeer	<i>Charadrius vociferus</i>	S5B	1
	Belted Kingfisher	<i>Megaceryle alcyon</i>	S5B	1
	Northern Flicker (Red-shafted)	<i>Colaptes auratus cafer</i>	SNRB	1
	Barn Swallow	<i>Hirundo rustica</i>	S5B	1
	Ruby-crowned Kinglet	<i>Regulus calendula</i>	S5B	1
	Brown Thrasher	<i>Toxostoma rufum</i>	S5B	1
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	1
	Northern Shrike	<i>Lanius excubitor</i>	S5N	1
	American Redstart	<i>Setophaga ruticilla</i>	S5B	1
	Field Sparrow	<i>Spizella pusilla</i>	S4B	1
	Big Brown Bat	<i>Eptesicus fuscus</i>	S4	1
	Thirteen-lined Ground Squirrel	<i>Ictidomys tridecemlineatus</i>	S4	1
	Muskrat	<i>Ondatra zibethicus</i>	S5	1
	Raccoon	<i>Procyon lotor</i>	S5	1
	Striped Skunk	<i>Mephitis mephitis</i>	S5	1
	North American Racer	<i>Coluber constrictor</i>	S5	1
	Common Whitetail	<i>Plathemis lydia</i>	S5	1
	Northern Leopard Frog	<i>Lithobates pipiens</i>	S1,S4	2
	Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	S1,S4	2

Table 6. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012 and 2014 surveys on the Chalk Buttes unit of the Sioux District. The table is sorted first by year, then Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then by species detected at higher to lower proportions of call stations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

2012

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
SOC	Ferruginous Hawk	<i>Buteo regalis</i>	S3B	1	0.014 (0.014)
SOC	Golden Eagle	<i>Aquila chrysaetos</i>	S3	1	0.014 (0.014)
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	29	0.403 (0.058)
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	10	0.139 (0.041)
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	41	0.569 (0.058)
	Red Crossbill	<i>Loxia curvirostra</i>	S5	37	0.514 (0.059)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	36	0.5 (0.059)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	35	0.486 (0.059)
	House Wren	<i>Troglodytes aedon</i>	S5B	30	0.417 (0.058)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	26	0.361 (0.057)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	26	0.361 (0.057)
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	24	0.333 (0.056)
	American Robin	<i>Turdus migratorius</i>	S5B	16	0.222 (0.049)
	Turkey Vulture	<i>Cathartes aura</i>	S4B	14	0.194 (0.047)
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	12	0.167 (0.044)
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	12	0.167 (0.044)
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	10	0.139 (0.041)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	9	0.125 (0.039)
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	8	0.111 (0.037)
	Northern Flicker	<i>Colaptes auratus</i>	S5	8	0.111 (0.037)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	5	0.069 (0.03)
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	5	0.069 (0.03)
	Mourning Dove	<i>Zenaida macroura</i>	S5B	4	0.056 (0.027)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	4	0.056 (0.027)
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	4	0.056 (0.027)
	Field Sparrow	<i>Spizella pusilla</i>	S4B	4	0.056 (0.027)
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	4	0.056 (0.027)
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	3	0.042 (0.024)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	3	0.042 (0.024)
	Mule Deer	<i>Odocoileus hemionus</i>	S5	3	0.042 (0.024)
	Prairie Falcon	<i>Falco mexicanus</i>	S4	2	0.028 (0.019)
	Rock Pigeon	<i>Columba livia</i>	SNA	2	0.028 (0.019)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B	2	0.028 (0.019)
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	2	0.028 (0.019)
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	2	0.028 (0.019)
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B	1	0.014 (0.014)
	American Kestrel	<i>Falco sparverius</i>	S5	1	0.014 (0.014)
	Merlin	<i>Falco columbarius</i>	S4	1	0.014 (0.014)

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	1	0.014 (0.014)
	Barn Swallow	<i>Hirundo rustica</i>	S5B	1	0.014 (0.014)
	Black-billed Magpie	<i>Pica hudsonia</i>	S5	1	0.014 (0.014)
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	1	0.014 (0.014)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	SNR	1	0.014 (0.014)
	Western Meadowlark	<i>Sturnella neglecta</i>	S5B	1	0.014 (0.014)
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	1	0.014 (0.014)
	Least Chipmunk	<i>Tamias minimus</i>	S4	1	0.014 (0.014)

2014

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
SOC	Golden Eagle	<i>Aquila chrysaetos</i>	S3	2	0.154 (0.1)
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	11	0.846 (0.1)
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	2	0.154 (0.1)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	7	0.538 (0.138)
	Turkey Vulture	<i>Cathartes aura</i>	S4B	6	0.462 (0.138)
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	6	0.462 (0.138)
	House Wren	<i>Troglodytes aedon</i>	S5B	5	0.385 (0.135)
	American Robin	<i>Turdus migratorius</i>	S5B	5	0.385 (0.135)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	5	0.385 (0.135)
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	4	0.308 (0.128)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	4	0.308 (0.128)
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	4	0.308 (0.128)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	4	0.308 (0.128)
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	4	0.308 (0.128)
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	4	0.308 (0.128)
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	3	0.231 (0.117)
	Mourning Dove	<i>Zenaida macroura</i>	S5B	2	0.154 (0.1)
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	2	0.154 (0.1)
	Black-billed Magpie	<i>Pica hudsonia</i>	S5	2	0.154 (0.1)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	2	0.154 (0.1)
	Red Crossbill	<i>Loxia curvirostra</i>	S5	2	0.154 (0.1)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	2	0.154 (0.1)
	Merlin	<i>Falco columbarius</i>	S4	1	0.077 (0.074)
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	1	0.077 (0.074)
	Least Flycatcher	<i>Empidonax minimus</i>	S5B	1	0.077 (0.074)
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	1	0.077 (0.074)
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	1	0.077 (0.074)
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	1	0.077 (0.074)
	Field Sparrow	<i>Spizella pusilla</i>	S4B	1	0.077 (0.074)
	Two-tailed Swallowtail	<i>Papilio multicaudata</i>	S5	1	0.077 (0.074)

Table 7. Species detected, and numbers of unique spatial observations, on the Chalk Buttes unit of the Sioux District in 2012 and 2014. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then on numbers of observations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

2012

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Golden Eagle	<i>Aquila chrysaetos</i>	S3	2
SOC	Ferruginous Hawk	<i>Buteo regalis</i>	S3B	1
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	32
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	10
PSOC	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	S4B	1
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	45
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	41
	Red Crossbill	<i>Loxia curvirostra</i>	S5	39
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	38
	House Wren	<i>Troglodytes aedon</i>	S5B	33
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	28
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	27
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	25
	American Robin	<i>Turdus migratorius</i>	S5B	17
	Turkey Vulture	<i>Cathartes aura</i>	S4B	14
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	14
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	13
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	13
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	11
	Northern Flicker	<i>Colaptes auratus</i>	S5	9
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	8
	Field Sparrow	<i>Spizella pusilla</i>	S4B	6
	Mourning Dove	<i>Zenaida macroura</i>	S5B	5
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	5
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	5
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	5
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	4
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	4
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	4
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	4
	Mule Deer	<i>Odocoileus hemionus</i>	S5	4
	Rock Pigeon	<i>Columba livia</i>	SNA	3
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	3
	Violet-green Swallow	<i>Tachycineta thalassina</i>	S5B	3
	Merlin	<i>Falco columbarius</i>	S4	2
	Prairie Falcon	<i>Falco mexicanus</i>	S4	2
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	2
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	2
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	2

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	SNR	2
	Western Meadowlark	<i>Sturnella neglecta</i>	S5B	2
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	2
	Northern Harrier	<i>Circus cyaneus</i>	S4B	1
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	S4B	1
	American Kestrel	<i>Falco sparverius</i>	S5	1
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	1
	Barn Swallow	<i>Hirundo rustica</i>	S5B	1
	Black-billed Magpie	<i>Pica hudsonia</i>	S5	1
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	1
	American Goldfinch	<i>Spinus tristis</i>	S5B	1
	Least Chipmunk	<i>Tamias minimus</i>	S4	1

2014

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Golden Eagle	<i>Aquila chrysaetos</i>	S3	3
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	1
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	12
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	2
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	8
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	7
	Turkey Vulture	<i>Cathartes aura</i>	S4B	6
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	5
	House Wren	<i>Troglodytes aedon</i>	S5B	5
	American Robin	<i>Turdus migratorius</i>	S5B	5
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	5
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	4
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	4
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	4
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	4
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	4
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	3
	Mourning Dove	<i>Zenaida macroura</i>	S5B	2
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	2
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	2
	Black-billed Magpie	<i>Pica hudsonia</i>	S5	2
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	2
	Red Crossbill	<i>Loxia curvirostra</i>	S5	2
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	2
	Northern Harrier	<i>Circus cyaneus</i>	S4B	1
	American Kestrel	<i>Falco sparverius</i>	S5	1
	Merlin	<i>Falco columbarius</i>	S4	1
	Least Flycatcher	<i>Empidonax minimus</i>	S5B	1
	Rock Wren	<i>Salpinctes obsoletus</i>	S5B	1
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	1

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Yellow-breasted Chat	<i>Icteria virens</i>	S5B	1
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	1
	Field Sparrow	<i>Spizella pusilla</i>	S4B	1
	Striped Skunk	<i>Mephitis mephitis</i>	S5	1
	North American Racer	<i>Coluber constrictor</i>	S5	1
	Two-tailed Swallowtail	<i>Papilio multicaudata</i>	S5	1

Table 8. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012 and 2014 surveys on the Ekalaka Hills unit of the Sioux District. The table is sorted first by year, then Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then by species detected at higher to lower proportions of call stations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

2012

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	10	0.106 (0.032)
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	1	0.011 (0.011)
PSOC	Eastern Bluebird	<i>Sialia sialis</i>	S4B	5	0.053 (0.023)
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	5	0.053 (0.023)
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	4	0.043 (0.021)
PSOC	Porcupine	<i>Erethizon dorsatum</i>	S4	4	0.043 (0.021)
	House Wren	<i>Troglodytes aedon</i>	S5B	46	0.489 (0.052)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	45	0.479 (0.052)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	40	0.426 (0.051)
	Red Crossbill	<i>Loxia curvirostra</i>	S5	40	0.426 (0.051)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	37	0.394 (0.05)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	30	0.319 (0.048)
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	24	0.255 (0.045)
	American Robin	<i>Turdus migratorius</i>	S5B	22	0.234 (0.044)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	19	0.202 (0.041)
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	19	0.202 (0.041)
	Northern Flicker	<i>Colaptes auratus</i>	S5	15	0.16 (0.038)
	Mourning Dove	<i>Zenaida macroura</i>	S5B	12	0.128 (0.034)
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	12	0.128 (0.034)
	Turkey Vulture	<i>Cathartes aura</i>	S4B	8	0.085 (0.029)
	American Goldfinch	<i>Spinus tristis</i>	S5B	8	0.085 (0.029)
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	7	0.074 (0.027)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	7	0.074 (0.027)
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	7	0.074 (0.027)
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	7	0.074 (0.027)
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	7	0.074 (0.027)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	4	0.043 (0.021)
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	3	0.032 (0.018)
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B	3	0.032 (0.018)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	SNR	3	0.032 (0.018)
	Mule Deer	<i>Odocoileus hemionus</i>	S5	3	0.032 (0.018)
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	3	0.032 (0.018)
	American Kestrel	<i>Falco sparverius</i>	S5	2	0.021 (0.015)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	2	0.021 (0.015)
	Least Chipmunk	<i>Tamias minimus</i>	S4	2	0.021 (0.015)
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	2	0.021 (0.015)
	Swainson's Hawk	<i>Buteo swainsoni</i>	S4B	1	0.011 (0.011)
	Steller's Jay	<i>Cyanocitta stelleri</i>	S5	1	0.011 (0.011)

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	1	0.011 (0.011)
	Lazuli Bunting	<i>Passerina amoena</i>	S4B	1	0.011 (0.011)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	1	0.011 (0.011)
	Gophersnake	<i>Pituophis catenifer</i>	S5	1	0.011 (0.011)
	Mourning Cloak	<i>Nymphalis antiopa</i>	S5	1	0.011 (0.011)
	Small Wood Nymph	<i>Cercyonis oetus</i>	S5	1	0.011 (0.011)
	Monarch	<i>Danaus plexippus</i>	S4B	1	0.011 (0.011)
	Eight-spotted Skimmer	<i>Libellula forensis</i>	S5	1	0.011 (0.011)
	Twelve-spotted Skimmer	<i>Libellula pulchella</i>	S5	1	0.011 (0.011)

2014

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	13	0.22 (0.054)
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	2	0.034 (0.024)
SOC	Great Blue Heron	<i>Ardea herodias</i>	S3	1	0.017 (0.017)
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	7	0.119 (0.042)
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	2	0.034 (0.024)
	House Wren	<i>Troglodytes aedon</i>	S5B	42	0.712 (0.059)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	27	0.458 (0.065)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	24	0.407 (0.064)
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	24	0.407 (0.064)
	American Robin	<i>Turdus migratorius</i>	S5B	23	0.39 (0.063)
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	21	0.356 (0.062)
	Mourning Dove	<i>Zenaida macroura</i>	S5B	18	0.305 (0.06)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	17	0.288 (0.059)
	Red Crossbill	<i>Loxia curvirostra</i>	S5	17	0.288 (0.059)
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	12	0.203 (0.052)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	11	0.186 (0.051)
	Turkey Vulture	<i>Cathartes aura</i>	S4B	10	0.169 (0.049)
	Northern Flicker	<i>Colaptes auratus</i>	S5	10	0.169 (0.049)
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	8	0.136 (0.045)
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	8	0.136 (0.045)
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	7	0.119 (0.042)
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	7	0.119 (0.042)
	American Goldfinch	<i>Spinus tristis</i>	S5B	7	0.119 (0.042)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	6	0.102 (0.039)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	6	0.102 (0.039)
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	S5	6	0.102 (0.039)
	Least Chipmunk	<i>Tamias minimus</i>	S4	5	0.085 (0.036)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	4	0.068 (0.033)
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	4	0.068 (0.033)

Montana Status	Common Name	Scientific Name	State Rank	No. Stations Detected	Proportion (SE) of Stations Detected
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	4	0.068 (0.033)
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	3	0.051 (0.029)
	Field Sparrow	<i>Spizella pusilla</i>	S4B	3	0.051 (0.029)
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	3	0.051 (0.029)
	Cooper's Hawk	<i>Accipiter cooperii</i>	S4B	2	0.034 (0.024)
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	2	0.034 (0.024)
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	2	0.034 (0.024)
	Yellow-breasted Chat	<i>Icteria virens</i>	S5B	2	0.034 (0.024)
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	2	0.034 (0.024)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	SNR	2	0.034 (0.024)
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	1	0.017 (0.017)
	Mountain Bluebird	<i>Sialia currucoides</i>	S5B	1	0.017 (0.017)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	1	0.017 (0.017)
	Clay-colored Sparrow	<i>Spizella pallida</i>	S4B	1	0.017 (0.017)
	Vesper Sparrow	<i>Poocetes gramineus</i>	S5B	1	0.017 (0.017)
	Mourning Cloak	<i>Nymphalis antiopa</i>	S5	1	0.017 (0.017)

Table 9. Species detected, and numbers of unique spatial observations, on the Ekalaka Hills unit of the Sioux District in 2012, 2013, and 2014. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by Montana Species of Concern (SOC) and Potential Species of Concern (PSOC), then on numbers of observations, and then taxonomically. See Appendix A for Montana status and state rank definitions.

2012

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	10
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	1
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	7
PSOC	Eastern Bluebird	<i>Sialia sialis</i>	S4B	6
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	6
PSOC	Porcupine	<i>Erethizon dorsatum</i>	S4	4
	House Wren	<i>Troglodytes aedon</i>	S5B	50
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	47
	Red Crossbill	<i>Loxia curvirostra</i>	S5	43
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	42
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	39
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	31
	American Robin	<i>Turdus migratorius</i>	S5B	27
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	25
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	20
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	20
	Northern Flicker	<i>Colaptes auratus</i>	S5	17
	Mourning Dove	<i>Zenaida macroura</i>	S5B	16
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	12
	American Goldfinch	<i>Spinus tristis</i>	S5B	10
	Turkey Vulture	<i>Cathartes aura</i>	S4B	9
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	9
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	8
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	7
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	7
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	7
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	7
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	4
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	S5B	4
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	3
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	SNR	3
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	3
	Mule Deer	<i>Odocoileus hemionus</i>	S5	3
	White-tailed Deer	<i>Odocoileus virginianus</i>	S5	3
	Woodhouse's Toad	<i>Anaxyrus woodhousii</i>	S4	2
	American Kestrel	<i>Falco sparverius</i>	S5	2
	Western Kingbird	<i>Tyrannus verticalis</i>	S5B	2
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	2
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	2

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Yellow-breasted Chat	<i>Icteria virens</i>	S5B	2
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	2
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B	2
	Least Chipmunk	<i>Tamias minimus</i>	S4	2
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	2
	Gophersnake	<i>Pituophis catenifer</i>	S5	2
	Boreal Chorus Frog	<i>Pseudacris maculata</i>	S4	1
	Northern Leopard Frog	<i>Lithobates pipiens</i>	S4	1
	Mallard	<i>Anas platyrhynchos</i>	S5	1
	Swainson's Hawk	<i>Buteo swainsoni</i>	S4B	1
	Wilson's Snipe	<i>Gallinago delicata</i>	S5	1
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	1
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	1
	Northern Flicker (Yellow-shafted)	<i>Colaptes auratus auratus</i>	SNRB	1
	Least Flycatcher	<i>Empidonax minimus</i>	S5B	1
	Tree Swallow	<i>Tachycineta bicolor</i>	S5B	1
	Steller's Jay	<i>Cyanocitta stelleri</i>	S5	1
	Gray Catbird	<i>Dumetella carolinensis</i>	S5B	1
	Lazuli Bunting	<i>Passerina amoena</i>	S4B	1
	Vesper Sparrow	<i>Poocetes gramineus</i>	S5B	1
	Lark Bunting	<i>Calamospiza melanocorys</i>	S4B	1
	Western Meadowlark	<i>Sturnella neglecta</i>	S5B	1
	Common Grackle	<i>Quiscalus quiscula</i>	S5B	1
	Pine Siskin	<i>Spinus pinus</i>	S5	1
	Desert Cottontail	<i>Sylvilagus audubonii</i>	S4	1
	Coyote	<i>Canis latrans</i>	S5	1
	Striped Skunk	<i>Mephitis mephitis</i>	S5	1
	Elk	<i>Cervus canadensis</i>	S5	1
	Mourning Cloak	<i>Nymphalis antiopa</i>	S5	1
	Small Wood Nymph	<i>Cercyonis oetus</i>	S5	1
	Monarch	<i>Danaus plexippus</i>	S4B	1
	Eight-spotted Skimmer	<i>Libellula forensis</i>	S5	1
	Twelve-spotted Skimmer	<i>Libellula pulchella</i>	S5	1
	Forest Disc	<i>Discus whitneyi</i>	S5	1
	Quick Gloss	<i>Zonitoides arboreus</i>	S5	1

2013

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	1
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	1
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	1
	American Robin	<i>Turdus migratorius</i>	S5B	2
	Broad-winged Hawk	<i>Buteo platypterus</i>	SNA	1
	Swainson's Hawk	<i>Buteo swainsoni</i>	S4B	1
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	1

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Mourning Dove	<i>Zenaida macroura</i>	S5B	1
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	1
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	1
	Northern Flicker	<i>Colaptes auratus</i>	S5	1
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	1
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	1
	House Wren	<i>Troglodytes aedon</i>	S5B	1
	Mountain Bluebird	<i>Sialia currucoides</i>	S5B	1
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	1
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	1
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	1
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	S4B	1
	Red Crossbill	<i>Loxia curvirostra</i>	S5	1
	American Goldfinch	<i>Spinus tristis</i>	S5B	1

2014

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
SOC	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	S3B	15
SOC	Great Blue Heron	<i>Ardea herodias</i>	S3	2
SOC	Northern Goshawk	<i>Accipiter gentilis</i>	S3	2
SOC	Hoary Bat	<i>Lasiurus cinereus</i>	S3	1
PSOC	Ovenbird	<i>Seiurus aurocapilla</i>	S4B	7
PSOC	Plumbeous Vireo	<i>Vireo plumbeus</i>	S3S4B	2
PSOC	Eastern Screech-Owl	<i>Megascops asio</i>	S3S4	1
PSOC	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	S4B	1
	House Wren	<i>Troglodytes aedon</i>	S5B	44
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5	29
	American Robin	<i>Turdus migratorius</i>	S5B	27
	Spotted Towhee	<i>Pipilo maculatus</i>	S5B	27
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B	26
	Mourning Dove	<i>Zenaida macroura</i>	S5B	21
	Chipping Sparrow	<i>Spizella passerina</i>	S5B	21
	Western Wood-Pewee	<i>Contopus sordidulus</i>	S5B	19
	Red Crossbill	<i>Loxia curvirostra</i>	S5	18
	Black-capped Chickadee	<i>Poecile atricapillus</i>	S5	13
	Hairy Woodpecker	<i>Picoides villosus</i>	S5	12
	Northern Flicker	<i>Colaptes auratus</i>	S5	12
	American Goldfinch	<i>Spinus tristis</i>	S5B	11
	Turkey Vulture	<i>Cathartes aura</i>	S4B	10
	Common Nighthawk	<i>Chordeiles minor</i>	S5B	9
	Dark-eyed Junco	<i>Junco hyemalis</i>	S5B	9
	American Crow	<i>Corvus brachyrhynchos</i>	S5B	8
	Townsend's Solitaire	<i>Myadestes townsendi</i>	S5	7
	Western Tanager	<i>Piranga ludoviciana</i>	S5B	7
	Yellow Warbler	<i>Setophaga petechia</i>	S5B	6

Montana Status	Common Name	Scientific Name	State Rank	Number of Observations
	Field Sparrow	<i>Spizella pusilla</i>	S4B	6
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	S5	6
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	S5	6
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	S4	5
	Brown-headed Cowbird	<i>Molothrus ater</i>	S5B	5
	Least Chipmunk	<i>Tamias minimus</i>	S4	5
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	S5	5
	Lark Sparrow	<i>Chondestes grammacus</i>	S5B	4
	Cordilleran Flycatcher	<i>Empidonax occidentalis</i>	S4B	3
	Yellow-breasted Chat	<i>Icteria virens</i>	S5B	3
	Boreal Chorus Frog	<i>Pseudacris maculata</i>	S4	2
	Mallard	<i>Anas platyrhynchos</i>	S5	2
	Cooper's Hawk	<i>Accipiter cooperii</i>	S4B	2
	Downy Woodpecker	<i>Picoides pubescens</i>	S5	2
	Mountain Bluebird	<i>Sialia currucoides</i>	S5B	2
	Warbling Vireo	<i>Vireo gilvus</i>	S5B	2
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	SNR	2
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5B	2
	Woodhouse's Toad	<i>Anaxyrus woodhousii</i>	S4	1
	Northern Leopard Frog	<i>Lithobates pipiens</i>	S4	1
	Canada Goose	<i>Branta canadensis</i>	S5B	1
	Northern Harrier	<i>Circus cyaneus</i>	S4B	1
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5B	1
	Wild Turkey	<i>Meleagris gallopavo</i>	SNA	1
	Wilson's Snipe	<i>Gallinago delicata</i>	S5	1
	White-throated Swift	<i>Aeronautes saxatalis</i>	S5B	1
	Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5B	1
	Gray Catbird	<i>Dumetella carolinensis</i>	S5B	1
	Brown Thrasher	<i>Toxostoma rufum</i>	S5B	1
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B	1
	Red-eyed Vireo	<i>Vireo olivaceus</i>	S4B	1
	Common Yellowthroat	<i>Geothlypis trichas</i>	S5B	1
	Clay-colored Sparrow	<i>Spizella pallida</i>	S4B	1
	Vesper Sparrow	<i>Poocetes gramineus</i>	S5B	1
	Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	S4	1
	Gophersnake	<i>Pituophis catenifer</i>	S5	1
	Mourning Cloak	<i>Nymphalis antiopa</i>	S5	1

Table 10. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012, 2013, and 2014 surveys on the East Short Pines unit of the Sioux District. The table is sorted first by year, then South Dakota Status (Rare), then by species detected at higher to lower proportions of call stations, and then taxonomically. See SDGFP (2016) for explanations of South Dakota Rare species.

2012

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1	0.032 (0.032)
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	1	0.032 (0.032)
	House Wren	<i>Troglodytes aedon</i>	22	0.71 (0.081)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	15	0.484 (0.09)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	14	0.452 (0.089)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	13	0.419 (0.089)
	Northern Flicker	<i>Colaptes auratus</i>	9	0.29 (0.081)
	Spotted Towhee	<i>Pipilo maculatus</i>	7	0.226 (0.075)
	Red Crossbill	<i>Loxia curvirostra</i>	7	0.226 (0.075)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	6	0.194 (0.071)
	American Goldfinch	<i>Spinus tristis</i>	6	0.194 (0.071)
	Eastern Bluebird	<i>Sialia sialis</i>	5	0.161 (0.066)
	Western Tanager	<i>Piranga ludoviciana</i>	5	0.161 (0.066)
	Chipping Sparrow	<i>Spizella passerina</i>	4	0.129 (0.06)
	Porcupine	<i>Erethizon dorsatum</i>	4	0.129 (0.06)
	White-tailed Deer	<i>Odocoileus virginianus</i>	4	0.129 (0.06)
	Ovenbird	<i>Seiurus aurocapilla</i>	3	0.097 (0.053)
	Brown-headed Cowbird	<i>Molothrus ater</i>	3	0.097 (0.053)
	Turkey Vulture	<i>Cathartes aura</i>	2	0.065 (0.044)
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	2	0.065 (0.044)
	Downy Woodpecker	<i>Picoides pubescens</i>	2	0.065 (0.044)
	Hairy Woodpecker	<i>Picoides villosus</i>	2	0.065 (0.044)
	Lark Sparrow	<i>Chondestes grammacus</i>	2	0.065 (0.044)
	Black-billed Magpie	<i>Pica hudsonia</i>	1	0.032 (0.032)
	Plumbeous Vireo	<i>Vireo plumbeus</i>	1	0.032 (0.032)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	1	0.032 (0.032)
	Mule Deer	<i>Odocoileus hemionus</i>	1	0.032 (0.032)
	Eight-spotted Skimmer	<i>Libellula forensis</i>	1	0.032 (0.032)

2013

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
Rare	Brown Creeper	<i>Certhia americana</i>	1	0.026 (0.025)
	House Wren	<i>Troglodytes aedon</i>	39	1 (0)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	25	0.641 (0.077)
	Chipping Sparrow	<i>Spizella passerina</i>	23	0.59 (0.079)

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
	Spotted Towhee	<i>Pipilo maculatus</i>	19	0.487 (0.08)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	16	0.41 (0.079)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	14	0.359 (0.077)
	American Robin	<i>Turdus migratorius</i>	12	0.308 (0.074)
	American Goldfinch	<i>Spinus tristis</i>	12	0.308 (0.074)
	Northern Flicker	<i>Colaptes auratus</i>	11	0.282 (0.072)
	Plumbeous Vireo	<i>Vireo plumbeus</i>	11	0.282 (0.072)
	Western Tanager	<i>Piranga ludoviciana</i>	11	0.282 (0.072)
	Red Crossbill	<i>Loxia curvirostra</i>	10	0.256 (0.07)
	Ovenbird	<i>Seiurus aurocapilla</i>	7	0.179 (0.061)
	Western Meadowlark	<i>Sturnella neglecta</i>	6	0.154 (0.058)
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	4	0.103 (0.049)
	Mourning Dove	<i>Zenaida macroura</i>	3	0.077 (0.043)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	3	0.077 (0.043)
	Turkey Vulture	<i>Cathartes aura</i>	2	0.051 (0.035)
	Dusky Flycatcher	<i>Empidonax oberholseri</i>	2	0.051 (0.035)
	American Crow	<i>Corvus brachyrhynchos</i>	2	0.051 (0.035)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	2	0.051 (0.035)
	Eastern Bluebird	<i>Sialia sialis</i>	2	0.051 (0.035)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	2	0.051 (0.035)
	Brown-headed Cowbird	<i>Molothrus ater</i>	2	0.051 (0.035)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1	0.026 (0.025)
	American Kestrel	<i>Falco sparverius</i>	1	0.026 (0.025)
	Hairy Woodpecker	<i>Picoides villosus</i>	1	0.026 (0.025)
	Mountain Bluebird	<i>Sialia currucoides</i>	1	0.026 (0.025)
	Yellow Warbler	<i>Setophaga petechia</i>	1	0.026 (0.025)
	Lazuli Bunting	<i>Passerina amoena</i>	1	0.026 (0.025)
	Dark-eyed Junco	<i>Junco hyemalis</i>	1	0.026 (0.025)

2014

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
	House Wren	<i>Troglodytes aedon</i>	29	0.784 (0.068)
	Spotted Towhee	<i>Pipilo maculatus</i>	16	0.432 (0.081)
	Chipping Sparrow	<i>Spizella passerina</i>	15	0.405 (0.081)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	12	0.324 (0.077)
	Red Crossbill	<i>Loxia curvirostra</i>	12	0.324 (0.077)
	Turkey Vulture	<i>Cathartes aura</i>	11	0.297 (0.075)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	8	0.216 (0.068)
	American Robin	<i>Turdus migratorius</i>	8	0.216 (0.068)
	Ovenbird	<i>Seiurus aurocapilla</i>	7	0.189 (0.064)
	American Goldfinch	<i>Spinus tristis</i>	6	0.162 (0.061)

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
	White-tailed Deer	<i>Odocoileus virginianus</i>	6	0.162 (0.061)
	Hairy Woodpecker	<i>Picoides villosus</i>	4	0.108 (0.051)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	4	0.108 (0.051)
	Yellow Warbler	<i>Setophaga petechia</i>	3	0.081 (0.045)
	Mourning Dove	<i>Zenaida macroura</i>	2	0.054 (0.037)
	Downy Woodpecker	<i>Picoides pubescens</i>	2	0.054 (0.037)
	Northern Flicker	<i>Colaptes auratus</i>	2	0.054 (0.037)
	Least Flycatcher	<i>Empidonax minimus</i>	2	0.054 (0.037)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	2	0.054 (0.037)
	Eastern Bluebird	<i>Sialia sialis</i>	2	0.054 (0.037)
	Plumbeous Vireo	<i>Vireo plumbeus</i>	2	0.054 (0.037)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	2	0.054 (0.037)
	Common Nighthawk	<i>Chordeiles minor</i>	1	0.027 (0.027)
	Black-billed Magpie	<i>Pica hudsonia</i>	1	0.027 (0.027)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	1	0.027 (0.027)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	1	0.027 (0.027)
	Warbling Vireo	<i>Vireo gilvus</i>	1	0.027 (0.027)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	1	0.027 (0.027)
	Yellow-breasted Chat	<i>Icteria virens</i>	1	0.027 (0.027)
	Lazuli Bunting	<i>Passerina amoena</i>	1	0.027 (0.027)
	Dark-eyed Junco	<i>Junco hyemalis</i>	1	0.027 (0.027)
	Western Meadowlark	<i>Sturnella neglecta</i>	1	0.027 (0.027)
	Porcupine	<i>Erethizon dorsatum</i>	1	0.027 (0.027)

Table 11. Species detected, and numbers of unique spatial observations, on the East Short Pines unit of the Sioux District in 2012, 2013, and 2014. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by South Dakota Status (Rare), then on numbers of observations, and then taxonomically. See SDGFP (2016) for explanations of South Dakota Rare species.

2012

South Dakota Status	Common Name	Scientific Name	Number of Observations
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	1
	House Wren	<i>Troglodytes aedon</i>	22
	Western Wood-Pewee	<i>Contopus sordidulus</i>	15
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	14
	Black-capped Chickadee	<i>Poecile atricapillus</i>	13
	Northern Flicker	<i>Colaptes auratus</i>	9
	Spotted Towhee	<i>Pipilo maculatus</i>	7
	Red Crossbill	<i>Loxia curvirostra</i>	7
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	6
	American Goldfinch	<i>Spinus tristis</i>	6
	Eastern Bluebird	<i>Sialia sialis</i>	5
	Western Tanager	<i>Piranga ludoviciana</i>	5
	Chipping Sparrow	<i>Spizella passerina</i>	4
	Porcupine	<i>Erethizon dorsatum</i>	4
	White-tailed Deer	<i>Odocoileus virginianus</i>	4
	Ovenbird	<i>Seiurus aurocapilla</i>	3
	Brown-headed Cowbird	<i>Molothrus ater</i>	3
	Turkey Vulture	<i>Cathartes aura</i>	2
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	2
	Downy Woodpecker	<i>Picoides pubescens</i>	2
	Hairy Woodpecker	<i>Picoides villosus</i>	2
	Lark Sparrow	<i>Chondestes grammacus</i>	2
	Black-billed Magpie	<i>Pica hudsonia</i>	1
	Plumbeous Vireo	<i>Vireo plumbeus</i>	1
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	1
	Mule Deer	<i>Odocoileus hemionus</i>	1
	Eight-spotted Skimmer	<i>Libellula forensis</i>	1

2013

South Dakota Status	Common Name	Scientific Name	Number of Observations
Rare	Brown Creeper	<i>Certhia americana</i>	1
	House Wren	<i>Troglodytes aedon</i>	39
	Western Wood-Pewee	<i>Contopus sordidulus</i>	25
	Chipping Sparrow	<i>Spizella passerina</i>	23
	Spotted Towhee	<i>Pipilo maculatus</i>	19
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	16

South Dakota Status	Common Name	Scientific Name	Number of Observations
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	14
	American Robin	<i>Turdus migratorius</i>	12
	American Goldfinch	<i>Spinus tristis</i>	12
	Northern Flicker	<i>Colaptes auratus</i>	11
	Plumbeous Vireo	<i>Vireo plumbeus</i>	11
	Western Tanager	<i>Piranga ludoviciana</i>	11
	Red Crossbill	<i>Loxia curvirostra</i>	10
	Ovenbird	<i>Seiurus aurocapilla</i>	7
	Western Meadowlark	<i>Sturnella neglecta</i>	6
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	4
	Mourning Dove	<i>Zenaida macroura</i>	3
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	3
	Turkey Vulture	<i>Cathartes aura</i>	2
	Dusky Flycatcher	<i>Empidonax oberholseri</i>	2
	American Crow	<i>Corvus brachyrhynchos</i>	2
	Black-capped Chickadee	<i>Poecile atricapillus</i>	2
	Eastern Bluebird	<i>Sialia sialis</i>	2
	Townsend's Solitaire	<i>Myadestes townsendi</i>	2
	Brown-headed Cowbird	<i>Molothrus ater</i>	2
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1
	American Kestrel	<i>Falco sparverius</i>	1
	Hairy Woodpecker	<i>Picoides villosus</i>	1
	Mountain Bluebird	<i>Sialia currucoides</i>	1
	Yellow Warbler	<i>Setophaga petechia</i>	1
	Lazuli Bunting	<i>Passerina amoena</i>	1
	Dark-eyed Junco	<i>Junco hyemalis</i>	1

2014

South Dakota Status	Common Name	Scientific Name	Number of Observations
	House Wren	<i>Troglodytes aedon</i>	30
	Spotted Towhee	<i>Pipilo maculatus</i>	16
	Chipping Sparrow	<i>Spizella passerina</i>	16
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	12
	Red Crossbill	<i>Loxia curvirostra</i>	12
	Turkey Vulture	<i>Cathartes aura</i>	11
	Western Wood-Pewee	<i>Contopus sordidulus</i>	8
	American Robin	<i>Turdus migratorius</i>	8
	Ovenbird	<i>Seiurus aurocapilla</i>	7
	American Goldfinch	<i>Spinus tristis</i>	6
	White-tailed Deer	<i>Odocoileus virginianus</i>	6
	Hairy Woodpecker	<i>Picoides villosus</i>	4
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	4
	Yellow Warbler	<i>Setophaga petechia</i>	3

South Dakota Status	Common Name	Scientific Name	Number of Observations
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	3
	Mourning Dove	<i>Zenaida macroura</i>	2
	Common Nighthawk	<i>Chordeiles minor</i>	2
	Downy Woodpecker	<i>Picoides pubescens</i>	2
	Northern Flicker	<i>Colaptes auratus</i>	2
	Least Flycatcher	<i>Empidonax minimus</i>	2
	Black-billed Magpie	<i>Pica hudsonia</i>	2
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	2
	Eastern Bluebird	<i>Sialia sialis</i>	2
	Plumbeous Vireo	<i>Vireo plumbeus</i>	2
	Western Meadowlark	<i>Sturnella neglecta</i>	2
	Upland Sandpiper	<i>Bartramia longicauda</i>	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1
	Black-capped Chickadee	<i>Poecile atricapillus</i>	1
	Townsend's Solitaire	<i>Myadestes townsendi</i>	1
	Warbling Vireo	<i>Vireo gilvus</i>	1
	Red-eyed Vireo	<i>Vireo olivaceus</i>	1
	Yellow-breasted Chat	<i>Icteria virens</i>	1
	Lazuli Bunting	<i>Passerina amoena</i>	1
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	1
	Dark-eyed Junco	<i>Junco hyemalis</i>	1
	Beaver	<i>Castor canadensis</i>	1
	Porcupine	<i>Erethizon dorsatum</i>	1

Table 12. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012, 2013, and 2014 surveys on the Slim Buttes unit of the Sioux District. The table is sorted first by year, then South Dakota Status (Rare), then by species detected at higher to lower proportions of call stations, and then taxonomically. See SDGFP (2016) for explanations of South Dakota Rare species.

2012

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
Rare	Merlin	<i>Falco columbarius</i>	3	0.073 (0.041)
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1	0.024 (0.024)
	House Wren	<i>Troglodytes aedon</i>	27	0.659 (0.074)
	Ovenbird	<i>Seiurus aurocapilla</i>	13	0.317 (0.073)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	12	0.293 (0.071)
	Spotted Towhee	<i>Pipilo maculatus</i>	12	0.293 (0.071)
	Red Crossbill	<i>Loxia curvirostra</i>	12	0.293 (0.071)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	11	0.268 (0.069)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	9	0.22 (0.065)
	Turkey Vulture	<i>Cathartes aura</i>	8	0.195 (0.062)
	American Crow	<i>Corvus brachyrhynchos</i>	7	0.171 (0.059)
	Least Flycatcher	<i>Empidonax minimus</i>	6	0.146 (0.055)
	Chipping Sparrow	<i>Spizella passerina</i>	6	0.146 (0.055)
	American Robin	<i>Turdus migratorius</i>	5	0.122 (0.051)
	Mourning Dove	<i>Zenaida macroura</i>	4	0.098 (0.046)
	Northern Flicker	<i>Colaptes auratus</i>	4	0.098 (0.046)
	Eastern Bluebird	<i>Sialia sialis</i>	4	0.098 (0.046)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	4	0.098 (0.046)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	4	0.098 (0.046)
	Wild Turkey	<i>Meleagris gallopavo</i>	3	0.073 (0.041)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	3	0.073 (0.041)
	Western Tanager	<i>Piranga ludoviciana</i>	3	0.073 (0.041)
	American Goldfinch	<i>Spinus tristis</i>	3	0.073 (0.041)
	Porcupine	<i>Erethizon dorsatum</i>	3	0.073 (0.041)
	White-tailed Deer	<i>Odocoileus virginianus</i>	3	0.073 (0.041)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	2	0.049 (0.034)
	Hairy Woodpecker	<i>Picoides villosus</i>	2	0.049 (0.034)
	Gray Catbird	<i>Dumetella carolinensis</i>	2	0.049 (0.034)
	Field Sparrow	<i>Spizella pusilla</i>	2	0.049 (0.034)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	2	0.049 (0.034)
	Red Admiral	<i>Vanessa atalanta</i>	2	0.049 (0.034)
	Great Horned Owl	<i>Bubo virginianus</i>	1	0.024 (0.024)
	White-throated Swift	<i>Aeronautes saxatalis</i>	1	0.024 (0.024)
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1	0.024 (0.024)
	Downy Woodpecker	<i>Picoides pubescens</i>	1	0.024 (0.024)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	1	0.024 (0.024)
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	1	0.024 (0.024)
	Yellow Warbler	<i>Setophaga petechia</i>	1	0.024 (0.024)

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
	Lazuli Bunting	<i>Passerina amoena</i>	1	0.024 (0.024)
	Vesper Sparrow	<i>Pooecetes gramineus</i>	1	0.024 (0.024)
	Dark-eyed Junco	<i>Junco hyemalis</i>	1	0.024 (0.024)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	1	0.024 (0.024)
	Brown-headed Cowbird	<i>Molothrus ater</i>	1	0.024 (0.024)
	Pine White	<i>Neophasia menapia</i>	1	0.024 (0.024)
	Twelve-spotted Skimmer	<i>Libellula pulchella</i>	1	0.024 (0.024)

2013

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
Rare	Northern Goshawk	<i>Accipiter gentilis</i>	1	0.014 (0.014)
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1	0.014 (0.014)
Rare	Merlin	<i>Falco columbarius</i>	1	0.014 (0.014)
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	1	0.014 (0.014)
	House Wren	<i>Troglodytes aedon</i>	55	0.753 (0.05)
	Spotted Towhee	<i>Pipilo maculatus</i>	47	0.644 (0.056)
	Ovenbird	<i>Seiurus aurocapilla</i>	46	0.63 (0.057)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	37	0.507 (0.059)
	Chipping Sparrow	<i>Spizella passerina</i>	35	0.479 (0.058)
	American Goldfinch	<i>Spinus tristis</i>	30	0.411 (0.058)
	Western Meadowlark	<i>Sturnella neglecta</i>	22	0.301 (0.054)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	20	0.274 (0.052)
	Red Crossbill	<i>Loxia curvirostra</i>	20	0.274 (0.052)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	19	0.26 (0.051)
	American Crow	<i>Corvus brachyrhynchos</i>	18	0.247 (0.05)
	Northern Flicker	<i>Colaptes auratus</i>	17	0.233 (0.049)
	Plumbeous Vireo	<i>Vireo plumbeus</i>	16	0.219 (0.048)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	13	0.178 (0.045)
	American Robin	<i>Turdus migratorius</i>	11	0.151 (0.042)
	Mountain Bluebird	<i>Sialia currucoides</i>	10	0.137 (0.04)
	Field Sparrow	<i>Spizella pusilla</i>	10	0.137 (0.04)
	Brown-headed Cowbird	<i>Molothrus ater</i>	10	0.137 (0.04)
	Yellow Warbler	<i>Setophaga petechia</i>	8	0.11 (0.037)
	Western Tanager	<i>Piranga ludoviciana</i>	7	0.096 (0.034)
	Black-billed Magpie	<i>Pica hudsonia</i>	6	0.082 (0.032)
	Mourning Dove	<i>Zenaid macroura</i>	5	0.068 (0.029)
	Least Flycatcher	<i>Empidonax minimus</i>	5	0.068 (0.029)
	Lazuli Bunting	<i>Passerina amoena</i>	5	0.068 (0.029)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	4	0.055 (0.027)
	Wild Turkey	<i>Meleagris gallopavo</i>	4	0.055 (0.027)
	Eastern Bluebird	<i>Sialia sialis</i>	3	0.041 (0.023)

	Townsend's Solitaire	<i>Myadestes townsendi</i>	3	0.041 (0.023)
	Lark Sparrow	<i>Chondestes grammacus</i>	3	0.041 (0.023)
	Turkey Vulture	<i>Cathartes aura</i>	2	0.027 (0.019)
	White-throated Swift	<i>Aeronautes saxatalis</i>	2	0.027 (0.019)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	2	0.027 (0.019)
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	0.027 (0.019)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	2	0.027 (0.019)
	Great Horned Owl	<i>Bubo virginianus</i>	1	0.014 (0.014)
	Common Nighthawk	<i>Chordeiles minor</i>	1	0.014 (0.014)
	Hairy Woodpecker	<i>Picoides villosus</i>	1	0.014 (0.014)
	Northern Flicker (Yellow-shafted)	<i>Colaptes auratus auratus</i>	1	0.014 (0.014)
	Dusky Flycatcher	<i>Empidonax oberholseri</i>	1	0.014 (0.014)
	Western Kingbird	<i>Tyrannus verticalis</i>	1	0.014 (0.014)
	Gray Catbird	<i>Dumetella carolinensis</i>	1	0.014 (0.014)
	Yellow-breasted Chat	<i>Icteria virens</i>	1	0.014 (0.014)
	Vesper Sparrow	<i>Pooecetes gramineus</i>	1	0.014 (0.014)
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	1	0.014 (0.014)
	Dark-eyed Junco	<i>Junco hyemalis</i>	1	0.014 (0.014)
	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	1	0.014 (0.014)
	Mountain Cottontail	<i>Sylvilagus nuttallii</i>	1	0.014 (0.014)
	White-tailed Deer	<i>Odocoileus virginianus</i>	1	0.014 (0.014)

2014

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
Rare	Northern Goshawk	<i>Accipiter gentilis</i>	1	0.019 (0.019)
	Spotted Towhee	<i>Pipilo maculatus</i>	41	0.759 (0.058)
	House Wren	<i>Troglodytes aedon</i>	37	0.685 (0.063)
	Ovenbird	<i>Seiurus aurocapilla</i>	25	0.463 (0.068)
	American Robin	<i>Turdus migratorius</i>	21	0.389 (0.066)
	Chipping Sparrow	<i>Spizella passerina</i>	20	0.37 (0.066)
	American Goldfinch	<i>Spinus tristis</i>	18	0.333 (0.064)
	Mourning Dove	<i>Zenaida macroura</i>	15	0.278 (0.061)
	Least Flycatcher	<i>Empidonax minimus</i>	14	0.259 (0.06)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	13	0.241 (0.058)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	11	0.204 (0.055)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	9	0.167 (0.051)
	Warbling Vireo	<i>Vireo gilvus</i>	9	0.167 (0.051)
	Red-eyed Vireo	<i>Vireo olivaceus</i>	8	0.148 (0.048)
	Dark-eyed Junco	<i>Junco hyemalis</i>	8	0.148 (0.048)
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	7	0.13 (0.046)
	Northern Flicker	<i>Colaptes auratus</i>	6	0.111 (0.043)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	6	0.111 (0.043)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	6	0.111 (0.043)
	Yellow Warbler	<i>Setophaga petechia</i>	6	0.111 (0.043)
	American Crow	<i>Corvus brachyrhynchos</i>	5	0.093 (0.04)

	Brown-headed Cowbird	<i>Molothrus ater</i>	5	0.093 (0.04)
	Red Crossbill	<i>Loxia curvirostra</i>	5	0.093 (0.04)
	Turkey Vulture	<i>Cathartes aura</i>	4	0.074 (0.036)
	Downy Woodpecker	<i>Picoides pubescens</i>	4	0.074 (0.036)
	Yellow-breasted Chat	<i>Icteria virens</i>	4	0.074 (0.036)
	Western Tanager	<i>Piranga ludoviciana</i>	4	0.074 (0.036)
	Field Sparrow	<i>Spizella pusilla</i>	4	0.074 (0.036)
	Wild Turkey	<i>Meleagris gallopavo</i>	3	0.056 (0.031)
	Common Nighthawk	<i>Chordeiles minor</i>	3	0.056 (0.031)
	White-throated Swift	<i>Aeronautes saxatalis</i>	3	0.056 (0.031)
	Hairy Woodpecker	<i>Picoides villosus</i>	3	0.056 (0.031)
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	0.037 (0.026)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	2	0.037 (0.026)
	Porcupine	<i>Erethizon dorsatum</i>	2	0.037 (0.026)
	White-tailed Deer	<i>Odocoileus virginianus</i>	2	0.037 (0.026)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1	0.019 (0.019)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	1	0.019 (0.019)
	Black-billed Magpie	<i>Pica hudsonia</i>	1	0.019 (0.019)
	Townsend's Solitaire	<i>Myadestes townsendi</i>	1	0.019 (0.019)
	Plumbeous Vireo	<i>Vireo plumbeus</i>	1	0.019 (0.019)
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	1	0.019 (0.019)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	1	0.019 (0.019)
	Western Meadowlark	<i>Sturnella neglecta</i>	1	0.019 (0.019)
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	1	0.019 (0.019)

Table 13. Species detected, and numbers of unique spatial observations, on the Slim Buttes unit of the Sioux District in 2012, 2013, and 2014. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by year, then South Dakota Status (Rare), then on numbers of observations, and then taxonomically. See SDGFP (2016) for explanations of South Dakota Rare species.

2012

South Dakota Status	Common Name	Scientific Name	Number of Observations
Rare	Merlin	<i>Falco columbarius</i>	3
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1
	House Wren	<i>Troglodytes aedon</i>	27
	Ovenbird	<i>Seiurus aurocapilla</i>	13
	Black-capped Chickadee	<i>Poecile atricapillus</i>	12
	Spotted Towhee	<i>Pipilo maculatus</i>	12
	Red Crossbill	<i>Loxia curvirostra</i>	12
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	11
	Western Wood-Pewee	<i>Contopus sordidulus</i>	9
	Turkey Vulture	<i>Cathartes aura</i>	8
	American Crow	<i>Corvus brachyrhynchos</i>	7
	Least Flycatcher	<i>Empidonax minimus</i>	6
	Chipping Sparrow	<i>Spizella passerina</i>	6
	American Robin	<i>Turdus migratorius</i>	5
	Mourning Dove	<i>Zenaida macroura</i>	4
	Northern Flicker	<i>Colaptes auratus</i>	4
	Eastern Bluebird	<i>Sialia sialis</i>	4
	Red-eyed Vireo	<i>Vireo olivaceus</i>	4
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	4
	Wild Turkey	<i>Meleagris gallopavo</i>	3
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	3
	Western Tanager	<i>Piranga ludoviciana</i>	3
	American Goldfinch	<i>Spinus tristis</i>	3
	Porcupine	<i>Erethizon dorsatum</i>	3
	White-tailed Deer	<i>Odocoileus virginianus</i>	3
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	2
	Hairy Woodpecker	<i>Picoides villosus</i>	2
	Gray Catbird	<i>Dumetella carolinensis</i>	2
	Field Sparrow	<i>Spizella pusilla</i>	2
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	2
	Red Admiral	<i>Vanessa atalanta</i>	2
	Great Horned Owl	<i>Bubo virginianus</i>	1
	White-throated Swift	<i>Aeronautes saxatalis</i>	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1
	Downy Woodpecker	<i>Picoides pubescens</i>	1
	Violet-green Swallow	<i>Tachycineta thalassina</i>	1
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	1
	Yellow Warbler	<i>Setophaga petechia</i>	1
	Lazuli Bunting	<i>Passerina amoena</i>	1

South Dakota Status	Common Name	Scientific Name	Number of Observations
	Vesper Sparrow	<i>Poocetes gramineus</i>	1
	Dark-eyed Junco	<i>Junco hyemalis</i>	1
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	1
	Brown-headed Cowbird	<i>Molothrus ater</i>	1
	Pine White	<i>Neophasia menapia</i>	1
	Twelve-spotted Skimmer	<i>Libellula pulchella</i>	1

2013

South Dakota Status	Common Name	Scientific Name	Number of Observations
Rare	Northern Goshawk	<i>Accipiter gentilis</i>	1
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1
Rare	Merlin	<i>Falco columbarius</i>	1
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	1
	House Wren	<i>Troglodytes aedon</i>	55
	Spotted Towhee	<i>Pipilo maculatus</i>	47
	Ovenbird	<i>Seiurus aurocapilla</i>	46
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	37
	Chipping Sparrow	<i>Spizella passerina</i>	35
	American Goldfinch	<i>Spinus tristis</i>	30
	Western Meadowlark	<i>Sturnella neglecta</i>	22
	Western Wood-Pewee	<i>Contopus sordidulus</i>	20
	Red Crossbill	<i>Loxia curvirostra</i>	20
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	19
	American Crow	<i>Corvus brachyrhynchos</i>	18
	Northern Flicker	<i>Colaptes auratus</i>	17
	Plumbeous Vireo	<i>Vireo plumbeus</i>	16
	Black-capped Chickadee	<i>Poecile atricapillus</i>	13
	American Robin	<i>Turdus migratorius</i>	11
	Mountain Bluebird	<i>Sialia currucoides</i>	10
	Field Sparrow	<i>Spizella pusilla</i>	10
	Brown-headed Cowbird	<i>Molothrus ater</i>	10
	Yellow Warbler	<i>Setophaga petechia</i>	8
	Western Tanager	<i>Piranga ludoviciana</i>	7
	Black-billed Magpie	<i>Pica hudsonia</i>	6
	Mourning Dove	<i>Zenaida macroura</i>	5
	Least Flycatcher	<i>Empidonax minimus</i>	5
	Lazuli Bunting	<i>Passerina amoena</i>	5
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	4
	Wild Turkey	<i>Meleagris gallopavo</i>	4
	Eastern Bluebird	<i>Sialia sialis</i>	3
	Townsend's Solitaire	<i>Myadestes townsendi</i>	3
	Lark Sparrow	<i>Chondestes grammacus</i>	3
	Turkey Vulture	<i>Cathartes aura</i>	2
	White-throated Swift	<i>Aeronautes saxatalis</i>	2

	Violet-green Swallow	<i>Tachycineta thalassina</i>	2
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	2
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	2
	Great Horned Owl	<i>Bubo virginianus</i>	1
	Common Nighthawk	<i>Chordeiles minor</i>	1
	Hairy Woodpecker	<i>Picoides villosus</i>	1
	Northern Flicker (Yellow-shafted)	<i>Colaptes auratus auratus</i>	1
	Dusky Flycatcher	<i>Empidonax oberholseri</i>	1
	Western Kingbird	<i>Tyrannus verticalis</i>	1
	Gray Catbird	<i>Dumetella carolinensis</i>	1
	Yellow-breasted Chat	<i>Icteria virens</i>	1
	Vesper Sparrow	<i>Pooecetes gramineus</i>	1
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	1
	Dark-eyed Junco	<i>Junco hyemalis</i>	1
	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	1
	Mountain Cottontail	<i>Sylvilagus nuttallii</i>	1
	White-tailed Deer	<i>Odocoileus virginianus</i>	1

2014

South Dakota Status	Common Name	Scientific Name	Number of Observations
Rare	Northern Goshawk	<i>Accipiter gentilis</i>	1
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	1
Rare	Fringed Myotis	<i>Myotis thysanodes</i>	1
	Spotted Towhee	<i>Pipilo maculatus</i>	43
	House Wren	<i>Troglodytes aedon</i>	38
	Ovenbird	<i>Seiurus aurocapilla</i>	26
	American Robin	<i>Turdus migratorius</i>	22
	Chipping Sparrow	<i>Spizella passerina</i>	20
	American Goldfinch	<i>Spinus tristis</i>	19
	Mourning Dove	<i>Zenaida macroura</i>	17
	Least Flycatcher	<i>Empidonax minimus</i>	15
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	14
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	12
	Black-capped Chickadee	<i>Poecile atricapillus</i>	10
	Warbling Vireo	<i>Vireo gilvus</i>	9
	Red-eyed Vireo	<i>Vireo olivaceus</i>	8
	Dark-eyed Junco	<i>Junco hyemalis</i>	8
	Northern Flicker	<i>Colaptes auratus</i>	7
	Western Wood-Pewee	<i>Contopus sordidulus</i>	7
	Yellow Warbler	<i>Setophaga petechia</i>	7
	Western Tiger Swallowtail	<i>Papilio rutulus</i>	7
	American Crow	<i>Corvus brachyrhynchos</i>	6
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	6
	Brown-headed Cowbird	<i>Molothrus ater</i>	6
	Red Crossbill	<i>Loxia curvirostra</i>	6
	Field Sparrow	<i>Spizella pusilla</i>	5

	Turkey Vulture	<i>Cathartes aura</i>	4
	Wild Turkey	<i>Meleagris gallopavo</i>	4
	Common Nighthawk	<i>Chordeiles minor</i>	4
	White-throated Swift	<i>Aeronautes saxatalis</i>	4
	Downy Woodpecker	<i>Picoides pubescens</i>	4
	Yellow-breasted Chat	<i>Icteria virens</i>	4
	Western Tanager	<i>Piranga ludoviciana</i>	4
	Hairy Woodpecker	<i>Picoides villosus</i>	3
	Cedar Waxwing	<i>Bombycilla cedrorum</i>	3
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	3
	Porcupine	<i>Erethizon dorsatum</i>	2
	White-tailed Deer	<i>Odocoileus virginianus</i>	2
	Woodhouse's Toad	<i>Anaxyrus woodhousii</i>	1
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	1
	Violet-green Swallow	<i>Tachycineta thalassina</i>	1
	Black-billed Magpie	<i>Pica hudsonia</i>	1
	Rock Wren	<i>Salpinctes obsoletus</i>	1
	Townsend's Solitaire	<i>Myadestes townsendi</i>	1
	Gray Catbird	<i>Dumetella carolinensis</i>	1
	Plumbeous Vireo	<i>Vireo plumbeus</i>	1
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	1
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	1
	Western Meadowlark	<i>Sturnella neglecta</i>	1
	Big Brown Bat	<i>Eptesicus fuscus</i>	1
	Red Squirrel	<i>Tamiasciurus hudsonicus</i>	1

Table 14. Species detected, and proportion of Northern Goshawk call stations they were detected at, during the 2012 surveys on the North Cave Hills unit of the Sioux District. The table is sorted first by year, then South Dakota Status (Rare), then by species detected at higher to lower proportions of call stations, and then taxonomically. See SDGFP (2016) for explanations of South Dakota Rare species.

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
Rare	Merlin	<i>Falco columbarius</i>	2	0.044 (0.031)
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	2	0.044 (0.031)
Rare	Prairie Falcon	<i>Falco mexicanus</i>	1	0.022 (0.022)
Rare	Cassin's Kingbird	<i>Tyrannus vociferans</i>	1	0.022 (0.022)
Rare	Blue-gray Gnatcatcher	<i>Poliophtila caerulea</i>	1	0.022 (0.022)
	House Wren	<i>Troglodytes aedon</i>	36	0.8 (0.06)
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	32	0.711 (0.068)
	Spotted Towhee	<i>Pipilo maculatus</i>	26	0.578 (0.074)
	Chipping Sparrow	<i>Spizella passerina</i>	25	0.556 (0.074)
	Mourning Dove	<i>Zenaida macroura</i>	22	0.489 (0.075)
	Northern Flicker	<i>Colaptes auratus</i>	21	0.467 (0.074)
	Western Wood-Pewee	<i>Contopus sordidulus</i>	20	0.444 (0.074)
	Black-capped Chickadee	<i>Poecile atricapillus</i>	17	0.378 (0.072)
	American Robin	<i>Turdus migratorius</i>	15	0.333 (0.07)
	Western Meadowlark	<i>Sturnella neglecta</i>	14	0.311 (0.069)
	Red Crossbill	<i>Loxia curvirostra</i>	14	0.311 (0.069)
	Turkey Vulture	<i>Cathartes aura</i>	13	0.289 (0.068)
	Common Nighthawk	<i>Chordeiles minor</i>	9	0.2 (0.06)
	Yellow Warbler	<i>Setophaga petechia</i>	9	0.2 (0.06)
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	9	0.2 (0.06)
	Least Flycatcher	<i>Empidonax minimus</i>	8	0.178 (0.057)
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	7	0.156 (0.054)
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	7	0.156 (0.054)
	Violet-green Swallow	<i>Tachycineta thalassina</i>	6	0.133 (0.051)
	Rock Wren	<i>Salpinctes obsoletus</i>	6	0.133 (0.051)
	Ovenbird	<i>Seiurus aurocapilla</i>	6	0.133 (0.051)
	Lark Sparrow	<i>Chondestes grammacus</i>	6	0.133 (0.051)
	Eastern Bluebird	<i>Sialia sialis</i>	5	0.111 (0.047)
	Plumbeous Vireo	<i>Vireo plumbeus</i>	5	0.111 (0.047)
	American Goldfinch	<i>Spinus tristis</i>	5	0.111 (0.047)
	American Kestrel	<i>Falco sparverius</i>	4	0.089 (0.042)
	Mountain Bluebird	<i>Sialia currucoides</i>	4	0.089 (0.042)
	Mule Deer	<i>Odocoileus hemionus</i>	4	0.089 (0.042)
	Field Sparrow	<i>Spizella pusilla</i>	3	0.067 (0.037)
	Least Chipmunk	<i>Tamias minimus</i>	3	0.067 (0.037)
	Hairy Woodpecker	<i>Picoides villosus</i>	2	0.044 (0.031)
	Say's Phoebe	<i>Sayornis saya</i>	2	0.044 (0.031)
	Black-billed Magpie	<i>Pica hudsonia</i>	2	0.044 (0.031)
	Yellow-breasted Chat	<i>Icteria virens</i>	2	0.044 (0.031)

South Dakota Status	Common Name	Scientific Name	No. Stations Detected	Proportion (SE) of Stations Detected
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	2	0.044 (0.031)
	Wild Turkey	<i>Meleagris gallopavo</i>	1	0.022 (0.022)
	Rock Pigeon	<i>Columba livia</i>	1	0.022 (0.022)
	White-throated Swift	<i>Aeronautes saxatalis</i>	1	0.022 (0.022)
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1	0.022 (0.022)
	Downy Woodpecker	<i>Picooides pubescens</i>	1	0.022 (0.022)
	American Crow	<i>Corvus brachyrhynchos</i>	1	0.022 (0.022)
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	1	0.022 (0.022)
	Common Yellowthroat	<i>Geothlypis trichas</i>	1	0.022 (0.022)
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	1	0.022 (0.022)
	Lazuli Bunting	<i>Passerina amoena</i>	1	0.022 (0.022)
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikeni</i>	1	0.022 (0.022)
	Muskrat	<i>Ondatra zibethicus</i>	1	0.022 (0.022)
	Coyote	<i>Canis latrans</i>	1	0.022 (0.022)
	White-tailed Deer	<i>Odocoileus virginianus</i>	1	0.022 (0.022)

Table 15. Species detected, and numbers of unique spatial observations, on the North Cave Hills unit of the Sioux District in 2012. Observations include those made during Northern Goshawk call station surveys as well as those made incidentally while in the area. The table is sorted first by year, then South Dakota Status (Rare), then on numbers of observations, and then taxonomically. See SDGFP (2016) for explanations of South Dakota Rare species.

South Dakota Status	Common Name	Scientific Name	Number of Observations
Rare	Merlin	<i>Falco columbarius</i>	3
Rare	Common Poorwill	<i>Phalaenoptilus nuttallii</i>	3
Rare	Prairie Falcon	<i>Falco mexicanus</i>	2
Rare	Golden Eagle	<i>Aquila chrysaetos</i>	1
Rare	Cassin's Kingbird	<i>Tyrannus vociferans</i>	1
Rare	Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	1
	House Wren	<i>Troglodytes aedon</i>	40
	Red-breasted Nuthatch	<i>Sitta canadensis</i>	33
	Spotted Towhee	<i>Pipilo maculatus</i>	32
	Western Meadowlark	<i>Sturnella neglecta</i>	30
	Chipping Sparrow	<i>Spizella passerina</i>	27
	Mourning Dove	<i>Zenaida macroura</i>	26
	Northern Flicker	<i>Colaptes auratus</i>	25
	Western Wood-Pewee	<i>Contopus sordidulus</i>	20
	Black-capped Chickadee	<i>Poecile atricapillus</i>	18
	American Robin	<i>Turdus migratorius</i>	17
	Red Crossbill	<i>Loxia curvirostra</i>	16
	Turkey Vulture	<i>Cathartes aura</i>	15
	Yellow Warbler	<i>Setophaga petechia</i>	14
	Common Nighthawk	<i>Chordeiles minor</i>	10
	Eastern Bluebird	<i>Sialia sialis</i>	10
	Yellow-rumped Warbler	<i>Setophaga coronata</i>	9
	Northern Pocket Gopher	<i>Thomomys talpoides</i>	9
	Red-tailed Hawk	<i>Buteo jamaicensis</i>	8
	Least Flycatcher	<i>Empidonax minimus</i>	8
	Lark Sparrow	<i>Chondestes grammacus</i>	8
	Rock Wren	<i>Salpinctes obsoletus</i>	7
	American Goldfinch	<i>Spinus tristis</i>	7
	Violet-green Swallow	<i>Tachycineta thalassina</i>	6
	Plumbeous Vireo	<i>Vireo plumbeus</i>	6
	Ovenbird	<i>Seiurus aurocapilla</i>	6
	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	6
	Mountain Bluebird	<i>Sialia currucoides</i>	5
	Field Sparrow	<i>Spizella pusilla</i>	5
	American Kestrel	<i>Falco sparverius</i>	4
	Killdeer	<i>Charadrius vociferus</i>	4
	Mule Deer	<i>Odocoileus hemionus</i>	4
	Northern Leopard Frog	<i>Lithobates pipiens</i>	3
	Rock Pigeon	<i>Columba livia</i>	3
	Say's Phoebe	<i>Sayornis saya</i>	3

South Dakota Status	Common Name	Scientific Name	Number of Observations
	Black-billed Magpie	<i>Pica hudsonia</i>	3
	Yellow-breasted Chat	<i>Icteria virens</i>	3
	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	3
	Brown-headed Cowbird	<i>Molothrus ater</i>	3
	Least Chipmunk	<i>Tamias minimus</i>	3
	Coyote	<i>Canis latrans</i>	3
	Woodhouse's Toad	<i>Anaxyrus woodhousii</i>	2
	Hairy Woodpecker	<i>Picoides villosus</i>	2
	Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	2
	Barn Swallow	<i>Hirundo rustica</i>	2
	Painted Turtle	<i>Chrysemys picta</i>	2
	Pied-billed Grebe	<i>Podilymbus podiceps</i>	1
	Canada Goose	<i>Branta canadensis</i>	1
	Mallard	<i>Anas platyrhynchos</i>	1
	Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	1
	Wild Turkey	<i>Meleagris gallopavo</i>	1
	Spotted Sandpiper	<i>Actitis macularius</i>	1
	Upland Sandpiper	<i>Bartramia longicauda</i>	1
	Great Horned Owl	<i>Bubo virginianus</i>	1
	White-throated Swift	<i>Aeronautes saxatalis</i>	1
	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1
	Downy Woodpecker	<i>Picoides pubescens</i>	1
	Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	1
	American Crow	<i>Corvus brachyrhynchos</i>	1
	White-breasted Nuthatch	<i>Sitta carolinensis</i>	1
	Townsend's Solitaire	<i>Myadestes townsendi</i>	1
	Brown Thrasher	<i>Toxostoma rufum</i>	1
	Common Yellowthroat	<i>Geothlypis trichas</i>	1
	Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	1
	Lazuli Bunting	<i>Passerina amoena</i>	1
	Vesper Sparrow	<i>Poocetes gramineus</i>	1
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	1
	Dark-eyed Junco (White-winged)	<i>Junco hyemalis aikenii</i>	1
	Bobolink	<i>Dolichonyx oryzivorus</i>	1
	Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	1
	Orchard Oriole	<i>Icterus spurius</i>	1
	Beaver	<i>Castor canadensis</i>	1
	Deer Mouse	<i>Peromyscus maniculatus</i>	1
	Muskrat	<i>Ondatra zibethicus</i>	1
	Porcupine	<i>Erethizon dorsatum</i>	1
	White-tailed Deer	<i>Odocoileus virginianus</i>	1
	Pronghorn	<i>Antilocapra americana</i>	1
	Snapping Turtle	<i>Chelydra serpentina</i>	1
	Prairie Rattlesnake	<i>Crotalus viridis</i>	1

APPENDIX A.

HERITAGE PROGRAM RANKS:

**DEFINITIONS FOR GLOBAL AND STATE CONSERVATION STATUS RANKS AND
MONTANA SPECIES OF CONCERN AND POTENTIAL SPECIES OF CONCERN**

Heritage Program Ranks

The international network of Natural Heritage Programs employs a standardized ranking system to denote global (range-wide) and state status. Species are assigned numeric ranks ranging from 1 to 5, reflecting the relative degree to which they are “at-risk”. Rank definitions are given below. A number of factors are considered in assigning ranks — the number, size and distribution of known “occurrences” or populations, population trends (if known), habitat sensitivity, and threat. Factors in a species’ life history that make it especially vulnerable are also considered (e.g., dependence on a specific pollinator).

GLOBAL RANK DEFINITIONS (NatureServe 2003)

- G1 Critically imperiled because of extreme rarity and/or other factors making it highly vulnerable to extinction
- G2 Imperiled because of rarity and/or other factors making it vulnerable to extinction
- G3 Vulnerable because of rarity or restricted range and/or other factors, even though it may be abundant at some of its locations
- G4 Apparently secure, though it may be quite rare in parts of its range, especially at the periphery
- G5 Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery
- T1-5 Intraspecific Taxon (trinomial) —The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank

STATE RANK DEFINITIONS

- S1 At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to extirpation in the state
- S2 At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to extirpation in the state
- S3 Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas
- S4 Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern
- S5 Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range

COMBINATION RANKS

G#G# or S#S# Range Rank—A numeric range rank (e.g., G2G3) used to indicate uncertainty about the exact status of a taxon

QUALIFIERS

- NR Not ranked
- Q **Questionable taxonomy that may reduce conservation priority**—Distinctiveness of this entity as a taxon at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon in another taxon, with the resulting taxon having a lower-priority (numerically higher) conservation status rank
- X **Presumed Extinct**—Species believed to be extinct throughout its range. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered
- H **Possibly Extinct**—Species known from only historical occurrences, but may never-the-less still be extant; further searching needed
- U **Unrankable**—Species currently unrankable due to lack of information or due to substantially conflicting information about status or trends
- HYB **Hybrid**—Entity not ranked because it represents an interspecific hybrid and not a species
- ? **Inexact Numeric Rank**—Denotes inexact numeric rank
- C **Captive or Cultivated Only**—Species at present is extant only in captivity or cultivation, or as a reintroduced population not yet established
- A **Accidental**—Species is accidental or casual in Montana, in other words, infrequent and outside usual range. Includes species (usually birds or butterflies) recorded once or only a few times at a location. A few of these species may have bred on the one or two occasions they were recorded
- Z **Zero Occurrences**—Species is present but lacking practical conservation concern in Montana because there are no definable occurrences, although the taxon is native and appears regularly in Montana
- P **Potential**—Potential that species occurs in Montana but no extant or historic occurrences are accepted
- R **Reported**—Species reported in Montana but without a basis for either accepting or rejecting the report, or the report not yet reviewed locally. Some of these are very recent discoveries for which the program has not yet received first-hand information; others are old, obscure reports

- SYN **Synonym**—Species reported as occurring in Montana, but the Montana Natural Heritage Program does not recognize the taxon; therefore the species is not assigned a rank
- * A rank has been assigned and is under review. Contact the Montana Natural Heritage Program for assigned rank
- B **Breeding**—Rank refers to the breeding population of the species in Montana
- N **Nonbreeding**—Rank refers to the non-breeding population of the species in Montana

MONTANA ANIMAL SPECIES OF CONCERN

Montana Animal Species of Concern are native Montana animals that are considered to be "at risk" due to declining population trends, threats to their habitats, and/or restricted distribution. Montana Species of Concern are defined as vertebrate animals with a state rank of S1, S2, or S3. Because documentation for invertebrates is typically less complete than for vertebrates, only those ranked S1 or S2 are included as SOC. Invertebrates with a range rank extending below S2 (e.g., S2S3) are included as SOC only if their global ranks are G2G3 or G3, or if experts agree their occurrence in Montana has been adequately documented.

MONTANA ANIMAL SPECIES OF POTENTIAL CONCERN

Montana Potential Animal Species of Concern are animals for which current, often limited, information suggests potential vulnerability or for which additional data are needed before an accurate status assessment can be made. Vertebrate species with a rank indicating uncertainty (SU), a "range rank" extending below the S3 cutoff (e.g., S3S4), or those ranked S4 for which there is limited baseline information on status are considered Potential Species of Concern. Invertebrates of concern with global ranks other than G1, G2, or G3 and with state ranks below S2 or range ranks extending below S2 (e.g., S3S4) are treated as Potential Species of Concern.

APPENDIX B.

SUMMARY OF ALL NORTHERN GOSHAWK OBSERVATION RECORDS ON THE MANAGEMENT UNITS OF THE BEARTOOTH, ASHLAND, AND SIOUX DISTRICTS OF THE CUSTER GALLATIN NATIONAL FOREST

Beartooth Unit of the Beartooth District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
2/16/1985 to 12/14/1985	Meyers Creek	Custer National Forest personnel	B	R1F08D02-01 Goshawk nest. Probably 2 fledged in 1985; apparently not active after this. Goshawks not formally surveyed on forest.		2	1
6/1/1985 to 7/15/1985	Meyers Creek	Custer National Forest personnel	B	Two young/fledglings observed. First year nest documented. Nest inactive in 1996.		2	1
2/16/1991 to 12/14/1991	QLL 40C	Bergeron, Dwight	t		1		
6/1/1995 to 6/1/1995	1.9 km NW of Burnt Mountain	Mccarthy, Clinton	t	Activity: Unknown Group Type: Single Reproductive Status: Unknown		1	
6/1/1996 to 7/15/1996	Red Lodge Creek	McCarthy, Clinton	B	One young		1	
6/1/1999 to 6/30/1999	Red Lodge Creek	Pitman, Barbara	B	Two chicks on nest	1	2	1
8/14/2002 to 8/14/2002	Picket Pin Creek, confluence with Swamp Creek	McClure, Wally	t	Single	1		
8/26/2002 to 8/26/2002	Mount Maurice, Trail 6	Pitman, Barbara	t	First heard 2 individuals calling. Saw one, then saw second one a few dozen yards down the trail.			
6/1/2003 to	Red Lodge Creek, along loop road	Pitman, Barbara	t	Seen and heard; only reported to year	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
8/1/2003							
7/6/2003 to 7/6/2003	Greenough Lake	Byrnes, Brian	t		2		
4/22/2004 to 4/22/2004	Red Lodge Creek	Pitman, Barbara	b	Heard one call about 90 meters away. Observed by Forest Service wildlife biologist conducting goshawk surveys.	1		
4/30/2004 to 4/30/2004	Little Rocky Creek, Benbow area	Pitman, Barbara	b	Heard calls about 180 away. Observed by Forest Service wildlife biologist conducting goshawk surveys.	1		
5/6/2004 to 5/6/2004	Mount Maurice, Trail 6	Pitman, Barbara	b	Goshawk flew overhead, landed and perched about 40 meters from trail for 5 minutes, then flew down-drainage. Observed by Forest Service wildlife biologist conducting goshawk surveys.	1		
12/15/2004 to 12/30/2004	Grizzly Peak Subdivision, E of Red Lodge, Overton home	Jaquith, Barb	W	This subadult NOGO killed a hen Turkey weighing nearly 10 pounds and measuring 36" long on 12/15/04. As of 12/30/04 the NOGO had returned once or twice a day to feed on the Turkey carcass. Photos of this bird have been submitted to Jeff Marks			
1/1/2005 to 12/31/2005	1.2 km E of Emerald Lake	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2005 to 12/31/2005	2.2 km W of Maurice Mount	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2005 to 12/31/2005	3 km NW of Maurice Mount	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
6/3/2005 to 6/3/2005	Custer National Forest, Horseman Creek drainage	Edwards, Maggie and Dave Roth	b	Goshawk detected visually and vocally.	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/22/2006 to 7/22/2006	Mount Maurice, Trail 6	Pitman, Barbara	b	Individual swooped observer and emitted territorial defense calls	1		
3/6/2007 to 3/6/2007	Red Lodge, Palisades area W of town	Pitman, Barbara	b	Calling	1		
7/11/2007 to 7/11/2007	Crazy Lakes, trail N of Rock Island Lake	Ostovar, Kayhan	b	Nest site.			1
1/1/2009 to 12/31/2009	1.6 km N of Burnt Mountain	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2009 to 12/31/2009	4.3 km N of Nichols Peak	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
5/28/2009 to 5/28/2009	Benbow Road, Little Rocky Creek crossing	Godtel, Andy	t	One adult goshawk flyby	1		
5/29/2009 to 5/29/2009	Burnt Mountain, north face	Godtel, Andy	b	R1F08D02-02. Observation. Visual and vocal detection, and defensive behavior, of adult goshawk responding to caller; nest searched for but not found;	1		
6/1/2009 to 6/1/2009	Mount Maurice Trail, 5 miles SSW of Red Lodge	Custer National Forest personnel	B	R1F08D02-03. Goshawk nest. One adult goshawk sitting on nest	1		1
6/4/2009 to 6/4/2009	Horseman Creek, 3 miles S of Limestone, Beartooth Mountains	Pitman, Barb	t	R1F08D02-05. Observation. One goshawk flew by 70m at 324 degree bearing from my location	1		
7/1/2009	Silver Run Trail, 6 miles	Pitman, Barb	b	R1F08D02-06. Observation. Goshawk responded to recorded warning call by	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 7/1/2009	SW of Red Lodge, Beartooth Mountains			calling twice; approx. 200m @ 180 degree bearing from call point.			
9/11/2009 to 9/11/2009	Silver Run Trail, between loops 1 and 2, near creek	Trapp, Jon	t	One bird observed.	1		
6/21/2010 to 6/21/2010	Burnt Mountain, 400m E of West Red Lodge Creek	Godtel, Andy	b	Nest site R01F08D02-02B. Nest found after adult flew out of nest stand.	1		1
6/30/2010 to 6/30/2010	Grizzly Mountain area, 200m ESE of Thiel Creek	Godtel, Andy	B	Nest site R01F08D02-09. Adult flew around nest area and call became more agitated as surveyor searched for and approached nest tree. One nestling seen on nest.	1	1	1
8/11/2011 to 8/11/2011	Little Rocky Creek drainage, 4 miles SSW of Dean	Pitman, Barb	B	Heard one juvenile kakkling and saw it perched in tree. One adult flew in, perched 30m south of my location, then flew north. Juvenile flew north several minutes later.	1	1	
6/4/2012 to 6/4/2012	Basin Lake Trail, near downstream end of Lower Basin Lake	Rettenmeier, Roger	b	Individual displayed territorial behavior.	1		
6/18/2012 to 6/18/2012	Burnt Mountain, 400 meters E of the East Fork of West Red Lodge Creek	Pitman, Barb	b	Individual kacked then flew east to west through mature lodgepole pine stand.	1		
7/18/2013 to 7/18/2013	2.4 km W of Mountain View Lake	Woodruff, Michael	b	NOGO responded to call broadcast with long call an estimated 80 yards south of the call station. Subsequent broadcasts did not elicit further responses and the bird was not found. Definitely not a Gray Jay mimic.	1		
7/20/2013 to 7/20/2013	5.4 km NW of the town of Mountain View	Woodruff, Michael	b	NOGO response to a broadcast call (revisit to area where earlier in the day a NOGO was spotted in flight). Bird observed circling behind trees, calling loudly. [Estimated location 45.425133, -109.947972	1		
7/20/2013 to	5.6 km NW of the town of Mountain View	Woodruff, Michael	b	Incidental observation during NOGO survey: At NOGO survey call station 69 (in PSU 107308) on the morning of July 20th, Woodruff played the NOGO	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/20/2013				calls. He heard an "odd call" at 168 degrees from the station he described as "...a repeating high pitch/screech			
7/22/2013 to 7/22/2013	4.6 km S of Meyer Mountain	Woodruff, Michael	B	Juvenile heard calling and observed 25 meters from call station (at 45.437604077, -109.950754037) . Adult flew in and landed in tree at call station, then it flew off in the direction of the juvenile. Juvenile capable of flight and the nest location w		1	
7/22/2013 to 7/22/2013	5.0 km SE of Meyer Mountain	Woodruff, Michael	b	Response to broadcast call. Surveyor walked towards calling bird which continued giving screech and long calls. Approximate location of bird is 45.436613336, -109.947941406 - as surveyor got closer, the bird was no longer heard and could not be seen. S	1		
7/29/2013 to 7/29/2013	0.9 km SW of Greenough Lake	Woodruff, Michael	B	NOGO responded to broadcast call. Two juveniles located (45.047378791, -109.426876958) and nest site located (45.047683474, -109.427488754). Nest is 8m high in a lodgepole pine typical of the mature stand it is in. Some Douglas-fir present. There are	1	2	1
7/29/2013 to 7/29/2013	1.1 km S of Greenough Lake	Woodruff, Michael	B	Call heard in the direction of the nest discovered earlier.	1		
6/24/2014 to 6/24/2014	Lake Fork Rock Creek, bottom of Beartooth Hwy	Stewart, Shawn	B	Nest with at least 2 chicks		2	1

Pryor Mountains Unit of the Beartooth District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
6/13/2004 to 6/13/2004	BBS_PRYOR MTN._53907_37	Pitman, Barb	t		1		
1/1/2005 to 12/31/2005	2.7 km NE of Big Pryor Mountain	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2005 to 12/31/2005	2.8 km NE of Big Pryor Mountain	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
6/1/2005 to 6/30/2005	Dry Head Road, above Punchbowl Creek, in Pryor Mountains	Unknown	t	Observer was stooped	1		
6/1/2007 to 6/30/2007	Pryor Mountains, 0.5 mile E of Stevens Draw	Ohman, Gary	B	Active goshawk nest 2007.			1
6/1/2008 to 6/30/2008	Pryor Mountains, 0.5 mile E of Stevens Draw	Ohman, Gary	B	Active goshawk nest 2008.			1
5/27/2009 to 5/27/2009	Stevens Draw, Pryor Mountains	Pitman, Barb, and Tana Stewart	b	R1F08D02-08. Observation. Goshawk responded to recorded warning call by calling twice; approx. 250m at 264 degree bearing from call point; did not find nest	1		
5/27/2009 to 5/27/2009	Roberts Bench area, forest stand between Roberts Bench and Harsten Flat, Pryor Mountains	Whitford, Thomas and Andy Godtel	t	R1F08D02-07. Observation. Visual detection of goshawk; nest searched for but not found	1		
6/10/2010 to	Pryor Mountains, 0.5 mile E of Stevens Draw	Cyrus, Chad and Gary	b	One adult goshawk observed near nest.	1		1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
6/10/2010		Ohman					
2/16/2013 to 12/14/2013	Big Pryor Mountain, Crooked Creek drainage	Wold, Randy	B	Nest observed with one adult and two fledglings.	1	2	1
2/16/2014 to 12/14/2014	Big Pryor Mountain, Crooked Creek drainage	Wold, Randy	N	Nest inactive; last used 2013.			1
7/7/2015 to 7/7/2015	Big Pryor Mountain, Sage Creek drainage	Wold, Randy	B	One adult exhibiting defensive behavior around nest.	1		1
8/29/2015 to 8/29/2015	Big Pryor Mountain, Sage Creek drainage	Wold, Randy	B	One adult and one fledgling observed in a nest. Alternative nest located at 45.1929, -108.48483.	1	1	1
8/30/2015 to 8/30/2015	Big Pryor Mountain, Crooked Creek drainage	Wold, Randy	N	Nest inactive; last used 2013.			1

Ashland District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/5/1977 to 7/5/1977	South Fork Threemile Creek drainage, S of McLennon Springs, Ashland RD, Custer NF	Custer National Forest personnel	t	Observation. One adult goshawk observed. Record from Ashland RD 1992 observation summary by Tom Kombrec, USFS.	1		
8/17/1977 to 8/17/1977	Prairie Dog Creek/Darling Draw Divide, Ashland RD, Custer NF	Custer National Forest personnel	t	Observation. One adult goshawk observed. Record from Ashland RD 1992 observation summary by Tom Kombrec, USFS.	1		
6/18/1980 to 6/18/1980	Green Creek drainage	Fleming, Tracy	B	R1F08D04-09 Goshawk nest. Banded 3 juveniles (2 males, 1 female) that were about 17-20 days old; Primary feathers just breaking sheath. Adult female goshawk was present and aggressive and hit climber over a dozen times. Prey remains of cotton tail and s		3	1
11/29/1982 to 11/29/1982	2.5 km N of Poker Jim Butte	Sasse, Donald	t	Activity: Unknown Group Type: Single Reproductive Status: Not Applicable		1	
2/16/1985 to 12/14/1985	Logging Creek	Custer National Forest personnel	B	R1F08D04-01 Goshawk nest. Fledged 2 young; nest not checked after this. Goshawks not formally surveyed on forest.		2	1
5/3/1985 to 5/3/1985	Willie Bull Prong	Petroni, Mark	B	R1F08D04-02 Goshawk nest. Goshawk defending a nest site. Tom Komberec, USFS, searched for, but was not able to locate nest site 6/12/1986. The Blank Wildfire occurred in 1992 (Scott Studiner, USFS) and burned and killed much of the pine forest about on	1		1
6/24/1985 to 6/26/1985	Logging Creek	Petroni, Diane and Tom Komberec	B	R1F08D04-01 Goshawk nest. A pair of goshawks were present and defending the nest site (6/24) Diane Petroni, USFS. At least one goshawk present at nest which is about 40 feet up ponderosa pine tree (6/26) Tom Komberec, USFS.		1	1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
2/16/1987 to 12/14/1987	Hay Creek	Custer National Forest personnel	B	R1F08D04-03 Goshawk nest. 2 young fledged; nest not checked after this. Goshawks were not formally surveyed on the forest.		2	1
2/16/1987 to 12/14/1987	Willie Bull Prong	Custer National Forest personnel	b	R1F08D04-02 Goshawk nest. Adult reported at nest; no young documented; nest not checked after this. Goshawks were not formally surveyed on the forest.	1		1
9/13/1987 to 9/13/1987	East Fork Otter Creek	Knowles, Craig J.	t	Observation. One adult goshawk observed. Information provided through Clint McCarthy, Forest Wildlife Biologist, Custer NF, Craig Knowles, Wildlife Biologist.	1		
12/9/1987 to 12/9/1987	North Fork Indian Creek, Ashland RD, Custer NF	Komberec, Tom	t	Observation. One unclassified northern goshawk.	1		
7/15/1989 to 7/27/1989	West Branch Dailey Creek	Komberec, Tom and Olsen	B	R1F08D04-04 Goshawk nest. Two adult and two young goshawks; both immature birds had recently fledged. 7/15 - Data from U91CUS01MTUS. 7/27 - Data from 3X5 inch Wildlife Observation card, Ashland RD.		2	1
11/13/1989 to 11/13/1989	Fifteenmile Creek, Ashland RD	Komberec, Tom	t	Observation. One adult goshawk flying over Fifteenmile Road.	1		
11/20/1989 to 11/20/1989	South Fork Poker Jim Creek, Ashland RD, Custer NF	Komberec, Tom	t	Observation. Two immature northern goshawks.	2		
11/29/1989 to 11/29/1989	South Fork Poker Jim Creek, Ashland RD, Custer NF	Komberec, Tom	t	Observation. One immature northern goshawk. Tom Komberec, USFS.	1		
11/30/1989 to 11/30/1989	Sawmill Gulch	Komberec, Tom	t	Observation. One adult goshawk observed. Ashland RD.	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
6/19/1990 to 7/4/1990	Paget Creek, Ashland RD, Custer NF	Komberec, Tom	B	R1F08D04-05 Goshawk nest. Adult goshawks at nest containing young which is within Chelsea Fire Salvage Sale Unit 1. Nest within umbrella shaped top in 10 inch DBH tree within burned stand. Most of stand has been marked to be cut with about 22 trees aro		2	1
11/10/1990 to 11/10/1990	8.3 km N of Red Top Hill	Sasse, Donald	t	Activity: Unknown Group Type: Single Reproductive Status: Unknown	1		
11/10/1990 to 11/10/1990	Cook Mountain, below ridge	Komberec, Tom	t	Observation. One adult goshawk observed flying above trees.	1		
11/10/1990 to 11/10/1990	West Branch Daily Creek	Komberec, Tom	t	R1F08D04-04 Observation. One adult goshawk observed flying above trees below Cook Mountain Ridge.	1		
11/15/1990 to 12/6/1990	Griffin Gulch, west side, Ashland RD, Custer NF	Komberec, Tom	t	Observation. Adult goshawks (one to two) seen repeatedly in this area by FS employees.	1		
12/5/1990 to 12/5/1990	Griffin Gulch, 0.4 miles S of High Card Reservoir, Ashland RD, Custer NF	Komberec, Tom	t	Observation. One adult and one unclassified northern goshawk.	2		
12/15/1990 to 12/31/1990	Timber Creek, 5 miles E of Birney	Komberec, Tom	W	Recorded as regular sightings made during the winter period (W) in the P.D. Skaar archives and/or the original Montana Bird Distribution Database, but no associated justifying comments were listed as is usually required for W records.	1		
4/24/1991 to 7/21/1991	Paget Creek, Ashland RD, Custer NF	Komberec, Tom	b	R1F08D04-05 Goshawk nest (1990 nest not used in 1991, but goshawks nested somewhere nearby). Red-tailed hawk flew out of old 1990 goshawk nest and circled about calling. A goshawk (male?) started calling in trees down the hill about 200 yards and then f	2	1	1
5/22/1991	Lemonade Springs	Komberec,	B	R1F08D04-06 Goshawk nest. Bird on nest in incubating posture (5/22). One		1	1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 7/21/1991	Road area, 18 miles ESE of Ashland	Tom		adult and one young observed at nest. Red-headed and hairy woodpeckers (potential prey) in stand (7/16). Observed one to two immature goshawks. Found goshawk "casts" and prey re			
7/17/1991 to 7/17/1991	2.4 km W of Poker Jim Butte	Sasse, Donald	b	Activity: Unknown, Unknown Group Type: Family Type Reproductive Status: Reproducing	2		
7/19/1991 to 8/17/1991	Timber Creek, upper portion, Ashland RD, Custer NF	Komberec, Tom	B	R1F08D04-07 Goshawk nest. Goshawk nest is in typical type tree. One adult in vicinity; the bird came in to see us at nest. Unable to see if young are present (7/17). Probably 2 young fledged. Aug. 17, 1991 = Saw one immature goshawk about 300 feet SE	1	2	1
7/27/1992 to 7/27/1992	Paget Spring No 4, Ashland RD, Custer NF	Studiner, Scott	b	R1F08D04-05 Goshawk nest (The 1992 nest location is about 0.5 miles north of the 1990 nest). Goshawks spotted in large timber (possibly old growth) above Paget Spring No. 4. One large and one slightly smaller adult. Aug. 4, 2000 = All forest stands in	2		1
6/2/1995 to 6/17/1995	Holiday Campground, E of campground	Hendricks, Paul	b	R1F08D04-10 Observation. At 0740 at Holiday Springs Campground, heard adult goshawk alarm calls from across gully to east of campground. Calling lasted 3 minutes. Walked traverse, but no goshawks or nest detected (6/2). June 4 - 5, 1995 = Food begging	1	1	1
7/10/1995 to 7/20/1995	Wilbur Creek, upper portion, USFS Stand No. 408-05-001	Warm, Arden	t	R1F08D04-11 Observation. Adult male goshawk observed in stand in mid-July.			
7/10/1995 to 7/20/1995	Wilbur Creek, upper portion, USFS Stand No. 408-05-126	Warm, Arden and T. Kellogg	t	R1F08D04-11 Observation. Adult male goshawk observed in stand in mid-July.			
7/11/1995 to 7/11/1995	Lemonade Springs Road area, 18 miles ESE of Ashland, TSMRS Stand No. 408-09-05	Warm, Arden	B	R1F08D04-06 Goshawk nest. Audio detection of 2 to 3 young goshawks. The young were not in the previously identified nest site (no prey remains or pellets below nest). Nest platform found (5/31/1996) about 9 meter above the ground in a 16 meter tall pon		2	1
7/11/1995	Wilbur Creek, USFS	Warm, Arden	B	R1F08D04-11 Observation. Young goshawks vocally responded to a	1	1	

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 7/11/1995	Stand No 408-05-007			prerecorded USFS R1 goshawk "wail" call. Heard young goshawks in TSMRS stand No. 408-05-007.			
7/11/1995 to 7/11/1995	Wilbur Creek, USFS Stand No. 408-05-001	Warm, Arden	t	R1F08D04-11 Observation. Saw adult male goshawk in TSMRS Stand No. 408-05-001.		1	
6/1/1996 to 6/30/1996	Lemonade Springs Road area, 18 miles ESE of Ashland, TSMRS Stand No. 408-09-05	Warm, Arden, Clint McCarthy, and Caleb McCarthy	B	R1F08D04-06 Goshawk nest. Observed an adult female goshawk with two nestlings at this location. 1997 - Nest site not active, may be using alternative site.		2	1
7/12/1996 to 7/12/1996	5.5 km NW of the town of Sayle	Sasse, Donald	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
7/19/1996 to 7/29/1996	North Fork Taylor Creek, near Stewart No 2 Reservoir	Elmore, Brent	B	R1F08D04-08 Goshawk nest. Nest empty, young fledged. FS TSMRS Stand No. 443-01-220 (7/19). Observed one adult and one fledgling goshawk (7/29).	1	1	1
7/29/1996 to 7/29/1996	Wilbur Creek, upper portion	Risdahl, Greg	b	R1F08D04-11 Observation. Saw juvenile goshawk near suspected nest area (7/29). Actual nest site was not detected. Previously, (June - July), no birds were detected at this site during surveys which included playing recorded goshawk vocalizations.		1	
7/12/1998 to 7/12/1998	North Fork Taylor Creek, near Stewart No 2 Reservoir	Sasse, Don and Brad Sauer	B	R1F08D04-08 Goshawk nest. Adult male and female actively defending the same nest as used in 1996. Adults started calling as I walked to base of nest tree. Fresh down feathers on nest, but we could not see into nest bowl. Nest tree is located in the bot			1
6/12/1999 to 6/12/1999	East Fork Threemile Creek, Ashland RD	Puckett, Dave	t	R1F08D04-12 Observation. One adult goshawk perched in a tree and vocalizing when Dave observed the bird at a distance of about 500 feet. Dave identified the location on a plastic overlay of aerial photograph 8-27-1996USDA-F 16 611084, 396-91. Dave had p	1		
2/16/2001	Holiday Springs	Atkinson, Eric	B	R1F08D04-10 Goshawk nest. We detected the active goshawk nest used in			1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 12/14/2001	Campground, E of campground	C.		2001.			
6/10/2001 to 6/10/2001	South Fork Poker Jim Creek drainage, Ashland RD, Custer NF	Sasse, Don, Tom Whitford, Wally Murphy and Eric Atkinson	b	R1F08D04-07 Observation. One goshawk calling and defending area. We were not able to locate the nest.	1		
5/7/2002 to 5/7/2002	Davis Prong, Ashland RD	Whitford, Thomas	t	R1F08D04-15 Observation. Observed one adult goshawk while I was hunting wild turkey.	1		
7/2/2002 to 7/2/2002	Buffalo Head Spring area, Ashland RD	Whitford, Thomas	t	R1F08D04-06 Observation. One adult goshawk responded to a played recorded goshawk call. The goshawk called once, then flew away.	1		
7/8/2002 to 7/8/2002	Holiday Springs Campground, E of campground	Atkinson, Eric C.	B	R1F08D04-10 Goshawk nest. We heard goshawk alarm calling and wailing during the early morning from the campground subsequently walking in and playing alarm vocalizations. Male goshawk responded to calls immediately and approached our location. Subseque			1
7/9/2002 to 7/9/2002	Whitetail Creek	Atkinson, Eric C.	B	R1F08D04-09 Goshawk nest. We located an active goshawk nest in the upper reaches of Whitetail Creek. The nestlings appeared to be between 28 - 30 days of age (Squires and Reynolds 1997).		1	1
4/17/2003 to 4/17/2003	South Fork Poker Jim Creek drainage, Ashland RD, Custer NF	Sasse, Don and Shay Rogge	b	R1F08D04-07 Observation. Male goshawk called defensively and perched in tree near the old lumber mill site and pond located approximately 400 yards south of the 2002 nest.			
4/17/2003 to 4/17/2003	1.9 km NW of Poker Jim Butte	Sasse, Donald	t	Activity: Unknown Group Type: Single Reproductive Status: Unknown Individual Comments: Male goshawk called defensively and perched in tree near the old lumber mill site and pond located approximately 400 yards south of the 2002 nest			
4/22/2003	4.7 km NW of the town	Sasse, Donald	B	Activity: Brooding Young Group Type: Single Reproductive Status: Unknown			1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 4/22/2003	of Sayle			Individual Comments: Female defending nest site			
4/22/2003 to 7/28/2003	North Fork Taylor Creek drainage, S of Stewart No 2 Reservoir	Sasse, Don	B	R1F08D04-08 Goshawk nest. Female defending nest site (4/22). May 6, 2003 - Ongoing slashing of small trees in area of nest tree for two days - I observed goshawk fly over nest stand (5/6). I collected goshawk eggshell fragments, a goshawk primary wing			1
4/28/2003 to 7/17/2003	South Poker Jim Creek, Ashland RD, Custer NF	Sasse, Don, Breck Hudson, Shay Rogge, and Marty Mitzkus	B	R1F08D04-07 Goshawk nest. Sasse played goshawk call, but no response (4/15). No sign of goshawks at nest or in stand area (Sasse 4/23). Observed two "gray birds" actively calling in the area of the 2002 nest (Rogge and Mitzkus 4/25). Two goshawks call		1	1
6/16/2003 to 7/15/2003	Lemonade Springs Road area, 18 miles ESE of Ashland	Sasse, Don	B	R1F08D04-06 Goshawk nest. At 1015-1135, I located a nest. Whitewash evident, and three downy white chicks with dark primary feathers about 0.5 inches long in the nest. An adult flew in and dropped a "robin sized" bloody prey item in the nest and left		3	1
6/18/2003 to 7/8/2003	Holiday Springs Campground, E of campground	Sasse, Don	B	R1F08D04-10 Goshawk nest. I located an active goshawk nest and collected a goshawk primary wing feather from below the nest. I was able to walk to base of nest tree, attached plastic flagging, and walk from tree before the female vocalized. Later, both		1	1
6/18/2003 to 7/15/2003	Whitetail Creek	Sasse, Don and Jud Hammer	B	R1F08D04-09 Goshawk nest. Sasse heard a goshawk call and located a female defending a nest. The female was the most aggressive he had encountered in over 24 years of raptor surveys. He could not see into the nest bowl (6/18). Sasse and Hammer observed		1	1
7/8/2003 to 7/8/2003	West Branch Daily Creek	Sasse, Don	B	R1F08D04-04 Goshawk nest. Located nest containing 3 young; the young did not call. The female flew silently at tree top level over my head, but did not call. It was raining lightly at the time. I collected prey remains and goshawk feathers from below t	1	3	1
7/9/2003	Sartin Draw	Sasse, Don	B	R1F08D04-13 Goshawk nest. I first observed a nest, then noted an immature	1	1	1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 7/23/2003				bird in the nest, and as I approached heard and saw a female goshawk weakly defending the nest. I collected goshawk feathers from below the nest and found an intact goshawk egg be			
7/10/2003 to 7/10/2003	Surprise Spring	Sasse, Don	B	R1F08D04-14 Goshawk nest. One adult goshawk vocalizing. After search I located active nest and noted extensive white wash below nest. Nest empty, but after about 40 minutes of search located a fledgling goshawk sitting quietly about 50 yards from the n		1	1
7/10/2003 to 7/10/2003	2 km W of Liscom Butte	Sasse, Donald	b	Activity: Unknown, Unknown, Unknown Group Type: Family Type Reproductive Status: Reproducing Individual Comments: One adult goshawk vocalizing. After search I located active nest and noted extensive white wash below nest. Nest empty, but after about		1	
3/31/2004 to 3/31/2004	2.4 km W of Poker Jim Butte	Sasse, Donald	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
3/31/2004 to 3/31/2004	Red Rock Reservoir No 1, Ashland RD, Custer NF	Alexander, Joe and Scott Studiner	t	R1F08D04-07 Observation. We observed an adult goshawk in close aerial pursuit of a hen mallard duck. The mallard flew directly into and under the surface of the reservoir to avoid being captured.	1		
4/15/2004 to 4/15/2004	Otter, hills 1 mile SE of town	Jacobs, Roy	t	Observation. An immature goshawk responded to imitated wild turkey call and sat within a few feet of, and kept watching, hunter's brown boots (Roy Jacobs, wild turkey hunter, Choteau, MT). Roy identified the immature goshawk in a field guide at the Ash	1		
5/5/2004 to 5/5/2004	Otter Creek Road, S of Stag Rock	Gibson, Julia	t		1		
6/9/2004 to 6/23/2004	Holiday Springs Campground, E of campground	Sasse, Don	B	R1F08D04-10 Goshawk nest. June 9, 2004 = Sasse observed an adult female and one young in a nest. Collected one goshawk feather from below the tree (6/9). June 15, 2004 = Sasse and Cyrus visited the active nest site and again observed an adult female an		1	1
6/18/2004	Surprise Spring	Cyrus, Chad	B	R1F08D04-14 Goshawk nest. Located active goshawk nest containing 3 young		3	1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 6/18/2004		and Jerica-Lee Bell		(1 female, 2 males). The young were approximately 34 days old. Female goshawk was vocalizing defensively. Nest tree is about 60 ft. tall with nest 45 ft high. A wild turkey nest			
6/19/2004 to 6/19/2004	Logging Creek	Cyrus, Chad and Jerica-Lee Bell	b	R1F08D04-01 Goshawk nest June 19, 2004 = Located inactive goshawk nest (based on evidence) in good condition. This nest is approximately three quares of a mile SW of the inactive goshawk nest in Sec. 14. The nest is 30 feet high and in a 40 ft. tall po			1
6/25/2004 to 6/25/2004	1.8 km S of Liscom Butte	Cyrus, Chad	B	Activity: On Nest, On Nest Group Type: Family Type Reproductive Status: Not Applicable Individual Comments: Located a new active goshawk nest containing 2 approximately 22 day-old young (1 young female, 1 young male). Prey remains and molted feathers			1
6/25/2004 to 9/14/2004	Davis Prong, Ashland RD, Custer NF	Sasse, Don	B	R1F08D04-15 Goshawk nest. June 25, 2004 = I first located a goshawk feather and then searched the area and located a goshawk nest containing at least one down young. No vocalizations from either chicks or adults. Nest is located on east edge of N-S dr	1	1	1
6/25/2004 to 6/25/2004	Split Rock Spring area, Ashland RD, Custer NF	Cyrus, Chad and Jerica-Lee Bell	B	R1F08D04-13 Goshawk nest. Located a new active goshawk nest containing 2 approximately 22 day-old young (1 young female, 1 young male). Prey remains and molted feathers were collected. An older, molted tail feather was found under pine needles at the b		2	1
1/1/2005 to 1/1/2005	1 km SE of Cook Mountain	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2005 to 1/1/2005	2.7 km N of Yager Butte	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2005 to 1/1/2005	8.2 km S of Yager Butte	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
3/15/2005	Davis Prong, Ashland	Sasse, Don	t	R1F08D04-15 Observation. March 15, 2005 = One goshawk heard and	1		1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 3/15/2005	RD, Custer NF	and Jud Hammer		observed flushed from a limb on a tree about 100 ft N. of nest location used in 2004. Approximately 4 inches of snow on ground and slash piles in area of nest unburned (3/15). April 4, 2005			
4/14/2005 to 4/14/2005	Otter, hills 1 mile SE of town	Jacobs, Roy	t	Observation. Observed a large hawk, identified as goshawk at the same location as last year. (Roy Jacobs, wild turkey hunter, Choteau, MT). Observed by Roy Jacobs, Turkey Hunter as reported to Scott Studiner, USFS Ranger/Minerals/ILands.	1		
7/7/2005 to 7/7/2005	Sartin Draw	Sasse, Don	B	R1F08D04-13 Goshawk nest. I checked the nest used in 2003 and found it occupied with an adult female defending the nest containing one chick in 2005. The location is about 95 m. upslope (to S.) from a 2-track road. I installed two "metal "Wildife Tree"	1	1	1
7/27/2005 to 7/27/2005	Timber Creek, upper portion, Ashland RD, Custer NF	Sasse, Don	B	R1F08D04-07 Goshawk nest. Observed two young and one adult goshawk.		2	1
9/23/2005 to 9/23/2005	Davis Prong, Ashland RD, Custer NF	Studiner, Scott and Mike Studiner	t	R1F08D04-15 Observation. We observed an adult goshawk at close range as we were archery hunting.	1		
7/7/2006 to 7/7/2006	Timber Creek, upper portion, Ashland RD, Custer NF	Sasse, Don	B	R1F08D04-07 Goshawk nest. Two young fledged goshawks flying around the same nest tree used in 2005. Oct. 18, 2006 = No goshawks detected. The area was part of a prescribed burn completed in Oct. 2006 to improve goshawk habitat. The burn killed areas o		2	1
7/11/2006 to 7/11/2006	Split Rock Spring area	Sasse, Don	B	R1F08D04-13 Goshawk nest. I viewed the Split Rock nest which was active in 2004 (Chad Cyrus), but saw no evidence of use below or in the nest in 2006. I detected a second nest which contained one young goshawk (7/11). The distance between the nest use			1
11/8/2006 to 11/8/2006	Holiday Springs Campground, E of campground	Sasse, Don, Tom Whitford, and Dennis	t	R1F08D04-10 Observation. We observed one adult goshawk flying from S to N through the tree canopy.	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
		Sandbak					
3/27/2007 to 3/27/2007	Holiday Springs Campground, NW of campground	Sasse, Don	t	R1F08D04-10 Observation. I observed one adult goshawk fly from trees adjacent to the spring located about 100 feet NW of Holiday Springs Campground. The bird flew to the east in the direction of previously recorded nest sites.	1		
8/10/2007 to 8/10/2007	Cow Creek Campground	Young, Lewis and Amanda Playter	t	One bird observed flying through campground.	1		
11/1/2007 to 11/8/2007	Fifteenmile Creek drainage, 0.4 miles W of Anchor Spring, 0.8 miles NW of Elk Creek Reservoir No 1,	USFS TEAMS group	t	Adult goshawk observed at three locations within in ponderosa pine stand on this date (USFS, TEAMS group)	1		
4/15/2008 to 4/15/2008	Home Creek drainage, 2 miles W of Red Top Hill, state lands	Sasse, Don	t	I flushed pairs of mallard and green-winged teal from a pool within a drainage. About 1 minute later a male goshawk pursued the teal until the duck dived toward and became submerged in the pool within in about 70 feet of where I stood. The goshawk, with			
4/15/2008 to 4/15/2008	Suicide Pass area, 0.5 miles E of Logging Creek, 1 mile N of HWY 212, Custer NF, Ashland RD	Anderson, Kirk and Ray Gross	t	One goshawk (blue-gray back) flying silently through the pine forest canopy.	1		
4/29/2008 to 4/29/2008	Forest Road 801, Timber Creek, Ashland RD, Custer NF	Sasse, Don	t	One adult goshawk flying overhead. Half mile NE of R1F08D04-07 nest site vicinity.	1		
5/1/2008 to 6/10/2008	East Fork Road, Ashland RD, Custer NF	MacDonald, Garrett, and John Rohrbach	t	One adult flying over road (Garrett and John were employed by USFS for bird census work).	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
5/25/2008 to 5/25/2008	5 km NW of Threemile Buttes	Peterson, Stephan	B	Activity: Unknown, Unknown Group Type: Unknown Reproductive Status: Unknown Observation Comments: Goshawk Nest R1F08D04-06. At 0825, I found a northern goshawk egg shell (dull white in color; size of an extra large chicken egg), along woody draw. Sho	2		
5/25/2008 to 5/25/2008	Home Creek drainage, 0.5 miles NNE of Fear Spring and 0.6 miles NW of Well Reservoir, Ashland RD, Cu	Peterson, Stephen, Boaz Crees, Garrett MacDonald, and John Rohrbach	B	Goshawk Nest R1F08D04-06. At 0825, I found a northern goshawk egg shell (dull white in color; size of an extra large chicken egg), along woody draw. Shortly after at 0920 I found a northern goshawk nest located about 17 meters up in a 25 meter tall pond			1
5/28/2008 to 5/28/2008	West Branch Daily Creek, 0.4 miles NW of West Fork Spring, Ashland RD, Custer NF	Peterson, Stephen	b	Goshawk Territory R1F08D04-04. I played the northern goshawk warning call which brought an immediate response from one adult northern goshawk which flew to within 55 meters from me to the west. The bird gave warning calls for two minutes as it flew to t	1		
6/11/2008 to 6/11/2008	Timber Creek, Ashland RD, Custer NF	Sasse, Don	B	R1F08D04-07 nest site. 6/11 = I followed sound of food begging by young about 0.3 miles and located nest (not previously identified). No sign of adults, but I collected feathers from adult goshawk. About 5 whitewash spots below nest. Nest contained fr		1	1
6/21/2008 to 6/21/2008	Sartin Draw, Ashland RD, Custer NF	Cyrus, Chad	B	R1F08D04-13 Goshawk nest. One goshawk nest with three young ready to fledge (estimated at 35 days old).	1	3	1
6/24/2008 to 6/24/2008	Cow Creek Campground, Cow Creek, Ashland RD, Custer NF	Peterson, Stephen	b	Goshawk Territory R1F08D04-16. Adult male and female northern goshawk agitated and responded aggressively to recorded vocalization of goshawk. After about 20 minutes of initial attacks by male, he finally perched on a fence post about 5 meters from me a			
1/9/2009 to 1/9/2009	Ten Mile Road, Buckshot Denson Ranch, E of confluence of Otter and Tenmile	Anderson, Brian and Jake Gion	w	One goshawk on powerpole	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
	Creek						
6/16/2009 to 6/16/2009	Forest Road 4427, Whitetail Creek/Sheep Creek divide, 0.5 miles N of Sheep Creek Reservoir, Ashland	Stewart, Tana	t	One goshawk flying overhead as I drove down road	1		
6/24/2009 to 6/24/2009	West Fork Little Pumpkin Creek, 0.2 miles SE of Bidwell Spring, Ashland RD, Custer NF	Sasse, Don	b	R1F08D04-10. 6/24/2009 = This year great horned owl breast feather and goshawk feather found below goshawk nest. Nest had whitewash and a feather on edge of nest, and whitewash spots below nest. I played recorded goshawk alarm call at nest at about 1300,	1		1
6/30/2009 to 6/30/2009	Horse Creek/Hanging Woman Creek divide, 0.5 miles N of Red Rock Reservoir No 2, Ashland RD,	Studiner, Scott, Megan Dawson, and Ryan Melin	t	One northern goshawk being chased by small bird. Observers were independently questioned on the identification and identified the northern goshawk and were certain it was not a male harrier	1		
12/10/2009 to 12/10/2009	Holiday Springs Campground, 0.1 mile E of the campground, Ashland RD, Custer NF	USFS Timber Strike Team	t	R1F08D04-10. Observation. Flying overhead within occupied goshawk nest territory - observed by USFS Timber Strike team conducting snag monitoring plots.	1		
6/9/2010 to 6/9/2010	West Fork Little Pumpkin Creek drainage, Holiday Springs, Ashland RD, Custer NF	Sasse, Don	b	R1F08D04-10 territory. One goshawk responded twice to a played recorded goshawk call. Responses were about 30 seconds apart and immediately after I played the recorded call. I heard the call from UTM 424740, 5054618. I was unable to get the bird to re	1		
7/12/2010 to 7/12/2010	Home Creek drainage, 0.4 mile NE of Fear Spring, Ashland RD, Custer NF	Sasse, Don	b	R01F08D04-06. Lemonade Goshawk Nest Territory. Male goshawk responded physically and called in response to played recording of goshawk warning call. I observed goshawk for about 2 minutes at about 100 feet			1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/13/2010 to 7/13/2010	Stacey Creek, 1 mile SE of Sartin Draw Spring, Ashland RD, Custer NF	Sasse, Don	b	Male goshawk responded to played recording of goshawk warning call. Flew overhead trying to locate call source for about 2 minutes. Also located one older nest (probably goshawk) in stand - I was not able to find any feathers below the nest			1
4/27/2011 to 4/27/2011	West Fork Little Pumpkin Creek, 0.3 mile S of Bidwell Spring	Sasse, Don	t	R1F08D04-10. Holiday Springs. While I was looking for goshawk nests I observed a raptor at some distance in the forest. I played the recorded goshawk warning call and the bird flew toward me, but kept behind the trunk of a tree. After several minutes	1		
5/4/2011 to 5/4/2011	West Fork Little Pumpkin Creek, 0.3 mile SE of Bidwell Spring	Sasse, Don	B	R1F08D04-10. Holiday Springs. 5/4/2011 = Female goshawk was on nest and did not call as I walked to base of tree and recorded GPS location. Numerous white down feathers visible around edge of nest. Nest location is up the drainage (E.) from previous ne			1
5/4/2011 to 5/4/2011	West Fork Little Pumpkin Creek, 0.3 mile SE of Bidwell Spring	Sasse, Don	b	R1F08D04-10. Holiday Springs. 0832 - Male goshawk flew to perch overhead and called repeatedly at me. I had been walking quietly (did not use a recorded call today) when male approached.			
5/11/2011 to 5/11/2011	Odell Creek, 1.7 miles S of Blacks Pond, Ashland RD, Custer NF	Studiner, Scott, Mark Nienow	t	One adult goshawk flying overhead	1		
6/15/2011 to 6/15/2011	Peach Creek drainage, 0.2 mile S of Rough Prong Spring	Sasse, Don	b	R1F08D04-07. Timber Creek. 6/15/2011 = A female goshawk responded vocally for 1 -2 minutes (from 200 yds W. of this position) at first to my played recorded goshawk call. The bird then flew high over head (3 to 4 times mature tree height) circling. As			
6/16/2011 to 6/16/2011	Home Creek, 0.7 mile NNE of Well Reservoir, Ashland RD, Custer NF	Sasse, Don, Arlin Bordeaux, Ty Fischer	b	R1F08D04-06. Lemonade. One goshawk, likely a female, responded quietly to played recorded goshawk call. She sat in a tree on a limb about 150 yards upslope of where I played the call. She looked intently at the area where the call was played. Arlin and			
7/1/2011 to	Fifteenmile Creek, 0.1 mile S of Dalzells	Sasse, Don	B	R1F08D04-16. Dalzells Spring. 7/1/2011 = Observed adult, nest, and three young in nest. 7/5/2011 = Three young, two in nest and one out on branch.		3	1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/1/2011	Spring			Young essentially stationary for at least 30 minutes, no calling. No sign of adult. 88 degrees F, Calm. I			
7/7/2011 to 7/7/2011	Stacey Creek, 1 mile SE of Sartin Draw Spring, Ashland RD, Custer NF	Sasse, Don	b	R1F08D04-13. Sartin Draw. 7/7/2011 = One female defending - observed for 15+ sec. with binoculars. I later heard more goshawk calls (fledged birds?) from east, but could not locate nest. Don Sasse	1		
10/17/2011 to 10/17/2011	Fifteenmile Creek, 0.2 mile S of Philips Well, Ashland RD, Custer NF	Sasse, Don	t	One flying just over ponderosa pine forest tree tops on S. side of Fifteenmile Cr, then flew to N. side and through pine forest between trees. Gray slate color conspicuous as it flew with back to sun. Observed for 3-4 minutes.			
5/9/2012 to 5/9/2012	Spring Creek, 0.5 mile NW of Dalzelle Spring, 0.3 mile E of Spring Creek Spring, Ashland RD, Custer	Canfield, Jodie	t	One heard calling - small pocket of older trees in a highly dissected topographic location close to the grassy flat ridgeline	1		
6/19/2012 to 6/19/2012	Fifteenmile Creek drainage, 0.2 mile SW of Dalzells Spring, Ashland RD, Custer NF	Sasse, Don and Jodie Canfield	B	R1F08D04-16. Dalzells Spring Territory. 2012.06.19 = female defending nest actively, at least 1 young in nest. Nest first detected in 2012. D. Sasse. 7/15/2012 = 2 fledged young near nest. No response from young when played recorded goshawk warning, wai		2	1
7/19/2012 to 7/19/2012	Liscom Creek, Ashland RD, Custer NF	Sasse, Don	B	R1F08D04-14. Surprise Springs territory. I heard 1 immature goshawk calling at 0830, I later observed and photographed the bird. The bird flushed and flew to the W. Unburned areas remain at original observation point and to the W. High Temp today 103F		1	
4/20/2013 to 4/20/2013	Bear Creek drainage, 0.9 NE of Rock Draw Reservoir, Ashland RD, Custer NF	Jacobs, Roy	t	Goshawk responded to hunter imitation of wild turkey call. Reported to Scott Studiner, USFS.	1		
6/13/2013 to 6/13/2013	Danzell Spring, 0.1 mile SW of spring, Ashland RD, Custer NF	Sasse, Don	b	R1F08D04-16. Dalzells Spring Territory. One responded to played recorded goshawk call; location is approximate location of bird response. Old nests (2011, 2012) are unused - no green bows or white down on nest, no white-wash below nest	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/5/2014 to 7/5/2014	East Fork Otter Creek drainage, Custer NF, Ashland District	Bachen, Dan	B	Nest is 20 m off the top of the ridge on the north side in a partial burn. 1 juvenile and no adults seen near nest (although adult is in the area); has not fledged. 2 dead fledglings in area. Little debris beneath the nest tree and no whitewash or prey		3	1
7/5/2014 to 7/5/2014	4.5 km W of Home Creek Butte	Bachen, Dan	b	Observed during 2014 NOGO survey work. Female soaring 183 degrees over ridge top; dove into trees.			
7/5/2014 to 7/5/2014	Custer NF, NOGO Call Station A350, Ashland District	Bachen, Dan	b	Wail call response.	1		
7/6/2014 to 7/6/2014	0.4 km NE of Yager Butte	Maxell, Bryce	b	Observed during 2014 NOGO survey work. Adult flew across road in front of us heading on a bearing of 115 degrees. It did not respond to game caller.	1		
7/8/2014 to 7/8/2014	Custer NF, NOGO Call Station A807, Ashland District	Maxell, Bryce	b	Adult flew in in response to "kak-kak" call from a bearing of 150 degrees. It circled for 15 minutes but stayed hidden from camera; followed to the SSE.	1		
7/9/2014 to 7/9/2014	Upper Fifteenmile Spring, Custer NF, Ashland District	Bachen, Dan	B	Found male and female adult, nest, and two nestlings. Whitewash under the nest but no prey items. Nest tree is 16-20 inches in diameter. Took multiple photos.		2	1
7/9/2014 to 7/9/2014	Custer NF, NOGO Call Station A1233, Ashland District	Bachen, Dan	b	Response after minute four.	1		
7/10/2014 to 7/10/2014	Custer NF, NOGO Call Station A1497, Ashland District	Hilty, Shannon	B	Heard/saw one adult and one nestling from the east side of the draw. From survey point 1497, the adult was perched 20 m at 320 degrees; scolding and swooping continued throughout survey.	1	1	
7/10/2014 to 7/10/2014	Elk Creek drainage, Custer NF, Ashland District	Hilty, Shannon	B	Found nest with at least one nestling (still had some down); ground surrounding nest is covered in whitewash.		1	1
7/10/2014	Middle Fork drainage,	Bachen, Dan	B	Nest search began 08:24. Nest located almost a mile away from call station,		1	1

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
to 7/10/2014	Custer NF, Ashland District			but surveyor was able to track the female right to it. Female in nest with prey and one nestling. No male observed. Two feathers collected. Nest tree is 12" DBH with sparse whi			
7/10/2014 to 7/10/2014	Custer NF, NOGO Call Station A1009, Ashland District	Bachen, Dan	b	Calling "KA" calls from 3-400m west of station.			
7/10/2014 to 7/10/2014	Custer NF, NOGO Call Station A2670, Ashland District	Maxell, Bryce	b	NOGO responded with "kak-kak" calls and sat on branch 40 m from me. Flew off at a bearing of 60 degrees while I was taking photos.	1		
7/10/2014 to 7/10/2014	Custer NF, NOGO Call Station A961, Ashland District	Bachen, Dan	b	"Kak" call. Nest search 7:23-7:35. Found at later site.	1		
7/10/2014 to 7/10/2014	Fifteenmile Creek drainage, Custer NF, Ashland District	Maxell, Bryce	N	Nest tree found; very little debris under nest.			1
7/11/2014 to 7/11/2014	Custer NF, NOGO Call Station A2385, Ashland District	Maxell, Bryce	b	Adult flew silently and rapidly by me and was closely followed by an American Kestrel doing the "klee-klee-klee" call while its mate called in the distance at a bearing of 150 degrees (which is the bearing the NOGO flew in on). The AMKE could be tracked	1		
7/16/2014 to 7/16/2014	Timber Creek drainage, Custer NF, Ashland District	Bachen, Dan	B	Active nest; female very defensive. Minor whitewash on ground, tree 18 " DBH, one nestling, and no prey. Photos taken.		1	1
7/16/2014 to 7/16/2014	2.7 km W of Poker Jim Butte	Bachen, Dan	b	Observed during 2014 NOGO survey work. Female.			
7/16/2014 to 7/16/2014	Custer NF, NOGO Call Station A1509, Ashland District	Bachen, Dan	b	Female NOGO responded to call station and continued to "KA" call, dive-bomb and display as nest search was performed for one hour; searched stops 1508 and 1509. After no results for nest search, surveyor waited quietly for 45 minutes, away from the femal			

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/18/2014 to 7/18/2014	Custer NF, NOGO Call Station A56, Ashland District	Bachen, Dan	B	One female and one fledgling seen in drainage. Female defensive. Also territory of a pair of AMKE that are both attacking NOGO female.		1	
7/18/2014 to 7/18/2014	Liscom Creek drainage, Custer NF, Ashland District	Bachen, Dan	N	Nest found in a tree with DBH 26 inches. Moderate whitewash. Nest is not occupied (female and fledgling present in drainage), although used this season.			1
7/19/2014 to 7/19/2014	Custer NF, NOGO Call Station A339, Ashland District	Bachen, Dan	B	Heard fledgling wail calls and alarm calls upon arrival at the station.		1	
7/19/2014 to 7/19/2014	West Branch Daily Creek, Custer NF, Ashland District	Bachen, Dan	N	Nest now unoccupied, but used this season (fledgling close by). Nest tree burned, 14 inch DBH. Small amount of white wash. No prey. Down visible in nest.			1
7/20/2014 to 7/20/2014	Custer NF, NOGO Call Station A50418067, Ashland District	Bachen, Dan	B	Territory is still active; 3 fledglings and moderate whitewash. Tree DBH 18 inches. No prey seen. Photos taken.		3	
7/20/2014 to 7/20/2014	Custer NF, NOGO Call Station A2153, Ashland District	Bachen, Dan	b	Calls heard southwest of survey point; "wail" call around dusk and "ka" call around dawn. Surveyor searched the surrounding area for two hours, playing calls periodically and mainly sticking to drainages within the area of calls. No response.	1		

Chalk Buttes Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
6/25/2012 to 6/25/2012	Chalk Buttes, Custer NF, W of Alstrom Spring, NOTO call station 567, MT	Maxell, Bryce	b	Approximately 100 meters SE of the call station, a Goshawk flew from SE to NE and dove into a stand of trees. I went to that general area and played a wail call and the bird flew off to the SE into another stand of trees at the base of a cliff.	1		
7/5/2014 to 7/5/2014	7.5 km N of the town of Chalk Buttes (historical)	Maxell, Bryce and Dan Bachen	b	Observed during 2014 NOGO survey work. Adult appeared above trees and dove back into the trees at a bearing of 140 degrees. We played alarm calls but there was no further response from the bird; smallish and probably a male.			

Ekalaka Hills Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/1/1999 to 9/3/1999	Carter Gulch, Ekalaka Hills, Sioux RD, Custer NF	Elmore, Scott and Don Sasse	B	R1F08D03-02. 7/1 - Two goshawks first observed by Scott Elmore. Don Sasse observed two adult goshawks defending nest stand, and two young goshawks "branching," but not yet fledged. The nest was rather skimpy, and numerous sticks were on the ground under t		2	1
6/8/2003 to 6/8/2003	Russell Spring	Atkinson, Eric C. and Melonie	t		1		
6/11/2003 to 6/11/2003	Rimrock Transect, Point 4	Atkinson, Eric C.	t				
7/8/2003 to 7/8/2003	McNab Pond area	Foley, George and Richard Harkins	b	R1F08D03-05 Observation. Goshawk vocalized and dived on observers repeatedly.	1		
7/16/2003 to 7/16/2003	Big Ramme Creek tributary, S of Hidden Spring	Atkinson, Eric C. and Melonie	t		1		
7/16/2004 to 7/16/2004	Smith Well area, SE of well	Neale, Graham	B	One adult and one fledgling observed and two other goshawks heard wail calling from within the nest stand.	3	1	1
1/1/2005 to 12/31/2005	5 km NE of the town of Pershing (historical)	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
1/1/2005 to 12/31/2005	7.2 km NW of the town of Elgin (historical)	Atkinson, Eric	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		
3/26/2007 to 3/26/2007	Russell Spring, 0.1 mile N of the spring, Ekalaka Hills, Sioux RD,	Cordell, Tawni	b	R1F08D03-04. Observation. Goshawk responded with warning call to recorded warning call - goshawk flew over observer. Unable to locate nest	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
	Custer NF						
5/3/2007 to 5/3/2007	Russell Spring, 0.1 mile NNW of Russell Spring, Ekalaka Hills, Sioux RD, Custer NF	Cordell, Tawni and Terry Sager	b	R1F08D03-04. Observation. Goshawk responded with warning call to recorded warning call	1		
5/3/2007 to 5/3/2007	Russell Spring, 0.2 mile NW of Russell Spring, Ekalaka Hills, Sioux RD, Custer NF	Cordell, Tawni and Terry Sager	t	R1F08D03-04. Observation. Russell Timber sale/Unit 54. Goshawk soared over observer after recorded warning call was played. Goshawk did not call	1		
5/10/2007 to 5/10/2007	Russell Spring, 0.5 mile N of Russell Springs, Ekalaka Hills, Sioux RD, Custer NF	Cordell, Tawni	b	R1F08D03-04. Observation. Russell Timber sale/Unit 54. Goshawk responded with warning calls to recorded warning call. Unable to locate nest.	1		
5/10/2008 to 5/15/2008	H S Creek, 0.5 mile N of Twentytwo Spring, Ekalaka Hills, Sioux RD, Custer NF	Stiefvater, Eric	t	One goshawk detected / observed	1		
6/2/2008 to 6/2/2008	Smith Creek, 1 mile E of Smith Well, Ekalaka Hills, Sioux RD, Custer NF	Custer National Forest personnel	B	R1F08D03-07. Observation. One adult and one juvenile goshawk observed	1	1	
6/2/2008 to 6/2/2008	Smith Creek, 0.3 mile NE of Smith Well, Ekalaka Hills, Sioux RD, Custer NF	Custer National Forest personnel	b	R1F08D03-07. Observation. One goshawk responded to recorded warning call	1		
6/2/2008 to 6/2/2008	Smith Creek, 0.4 mile E of Smith Well, Ekalaka Hills, Sioux RD, Custer NF	Custer National Forest personnel	b	R1F08D03-07. Observation. One goshawk responded to recorded warning call	1		

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
1/1/2009 to 12/31/2009	7.3 km NE of the town of Pershing (historical)	Unknown	t	Group Type: Unknown Reproductive Status: Unknown			
6/24/2009 to 6/24/2009	Carter Spring, in Carter Gulch, Ekalaka Hills, Sioux RD, Custer NF	Godtel, Andy	b	R1F08D03-02. Observation. One goshawk observed as it responded to played electronic call.	1		
6/25/2009 to 6/25/2009	Smith Creek, 0.2 mile NE of Smith Well, Ekalaka Hills, Sioux RD, Custer NF	Godtel, Andy	b	R1F08D03-07. Observation. One goshawk observed as it responded to played electronic call.	1		
7/3/2012 to 7/3/2012	Smith Creek drainage, Custer NF, above Smith Well, NOGO call station 304, MT	Hendricks, Paul	b	Bird encountered while conducting call surveys. The bird appeared in silence and began giving warning calls about 100m south of call station 304.	1		
7/4/2014 to 7/4/2014	Custer NF, NOGO Call Station S181, Sioux District	Maxell, Bryce	b	Adult flew silently through the woods at a bearing of 250 degrees just as I got to the point. There was no response to my playing of calls.	1		
7/4/2014 to 7/4/2014	Custer NF, NOGO Call Station S183, Sioux District	Maxell, Bryce	b	Was unable to get a good look, but bird appeared to be a fully flighted juvenile NOGO that flew from a tree to point and the off in a bearing of 120. It flew 40 meters and landed in a tree. No response to wail or kak calls.		1	

Long Pines Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
6/12/1994 to 6/12/1994	Capitol Rock Road	Dueholm, Keith H.	t		1		
9/13/2001 to 9/13/2001	1.8 km SE of Stormy Butte	Cordell, Tawni	t	Activity: Unknown Group Type: Single Reproductive Status: Unknown	3		
9/13/2001 to 9/13/2001	Plum Creek, 1.3 miles W of Schnell-Long Pines Ranch, Long Pines, Sioux RD, Custer NF	Whitford, Thomas	t	Adult goshawk flew and flushed several sharp-tailed grouse	1		
1/1/2005 to 12/31/2005	3.3 km NE of Stormy Butte	Unknown	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown	1		

East Short Pines Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
7/17/1997 to 7/17/1997	Moreau Peak, East Short Pines, Moreau Peak, Sioux RD, Custer NF, SD	Warm, Arden	t	Adult goshawk in flight (not vocalizing) through forest. TSMRS Stand No.316-01-034. Arden Warm, Wildlife Biologist, USFS. Potential nest habitat is located 0.5 miles to the N. and 1 mile to the NE - Don Sasse, USFS.	1		
6/30/2004 to 6/30/2004	2.4 km N of Moreau Peak	Associate, Garcia And	t	Activity: Unknown Group Type: Unknown Reproductive Status: Unknown Observation Comments: View Scale at Data Entry 1:143407;			

Slim Buttes Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
6/1/1976 to 7/30/1976	Deer Draw, Slim Buttes, Sioux RD, Custer NF, SD	McCarthy, Clinton	B	Two goshawks fledged. Source: USFS memo: Date: Dec. 13, 1991; Reply to: 2670, Subject: Response to Robin Silver's FOIA Request Regarding Goshawks: TO: Mary Maj, RO, From: Clint McCarty, Forest Wildlife Biologist, Custer NF. Original record was limited to		2	
6/28/2013 to 6/28/2013	5.6 km SE of Moonshine Lake, NOGO Call Station 774	Hendricks, Paul	b	Distant alarm call in response.			
7/2/2014 to 7/2/2014	Custer NF, NOGO Call Station S861, Sioux District	Maxell, Bryce	b	Adult male flew in from a bearing of 280 degrees and kept flying at 110 degrees. Heard a "pop" like sound just before observing the bird. No further sighting of bird.			

North Cave Hills Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
8/12/1914 to 8/12/1914	North Cave Hills, Harding Co, SD	Visher, S. S.	t	One seen in the Cave Hills. Source: Visher, S. S. 1914. A preliminary report on the biology of Harding County, northwestern South Dakota. South Dakota Geological Survey Bulletin No. 6, State Publishing Co., Pierre. 126 pp.	1		
11/11/2000 to 11/11/2000	Picnic Spring, W of the spring, North Cave Hills, Sioux RD, Custer NF, SD	Rumble, Mark	t	Observed two goshawks flying through heavy timber - one bird appeared to be an adult. (Mark Rumble, Research Wildlife Biologist, USFS, SD).	2		

South Cave Hills Unit of the Sioux District

Date Range	Location	Observer	Obs Type	Comments	No. Adults	No. Juvs	No. Nests
5/27/1996 to 5/27/1996	Lane Canyon, near junction with Peterson Canyon, South Cave Hills, Sioux RD, Custer NF	Marks, Jeff	t	One immature goshawk flushed from a pine grove	1		