

# Draft Appendix A

## Terrestrial Wildlife, Aquatic Wildlife, and Plant Species Emphasis Categories

### INTRODUCTION AND BACKGROUND

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To facilitate management of wildlife and plant species on the Bighorn National Forest certain species were classified as emphasis species. Classification of species into four categories of emphasis species aided in development of appropriate management actions during forest plan revision and will aid in implementing the plan. Not all species of plants or animals that inhabit the Forest were identified as emphasis species. Rather, a subset of species warranting special consideration was identified. Emphasis species include the following categories: Threatened, Endangered, and FS Sensitive; Management Indicator Species (MIS); Species of Local Concern; and Demand species. Emphasis species also serve as surrogates for managing the viability, diversity and sustainability of all species that occur on the Forest, and include some of the social values commonly associated with the species.

The Rocky Mountain Region of the Forest Service provided a guidance document titled a "Process to Evaluate Species and Population Viability in Forest Planning and Plan Implementation"<sup>1</sup>, and as part of that effort also provided a guidance document titled "Emphasis Species."<sup>2</sup> The Forest has followed these guidelines in developing its emphasis species list. The regional guidance documents were written in anticipation of revisions of the 1982 NFMA planning regulations with regards to species viability (36 CFR 219.19), and yet the guidance documents can still be used to meet the intent of the 1982 regulations. Further, the Committee of Scientists report <sup>3</sup> also made recommendations for improving management of national forests with regard to species viability considerations, and the Washington Office of the Forest Service also began developing a guidance document on species viability<sup>4</sup>, both which were incorporated into the Regional guidance documents.

In September of 2001, the Forest made an initial categorization of species, and shared this information with the Wyoming Game and Fish Department, the Rocky Mountain Regional Office of the Forest Service, the Wyoming Natural Diversity Database (WYNDD), professional botanists including Earl Jensen, Dick Birkholz and Walt Fertig, and other interested publics. Modifications recommended by the above sources were incorporated. The list was then shared with the USFWS in December of 2002.

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<sup>1</sup> Hayward, G.H., et al. 2000. Draft process to evaluate species and population viability in forest planning and plan implementation in the Rocky Mountain Region. USDA Forest Service. Lakewood, CO. 9 pp.

<sup>2</sup> USDA Forest Service. 2002. Region 2 Emphasis Species. White paper (unpublished) providing regional direction on species management categories. On file at Sheridan office. 30 pp.

<sup>3</sup> USDA Forest Service Committee of Scientists. 1999. Sustaining the People's Lands. Washington, D. C. 96 pp. Available online at [www.fs.fed.us/forum/nepa/rule/cosreport.shtml](http://www.fs.fed.us/forum/nepa/rule/cosreport.shtml).

<sup>4</sup> USDA Forest Service. 2002. Draft white paper on managing for population viability. Washington, D.C. On file at Sheridan FS office. 37 pp.

In addition to the analysis of effects conducted to evaluate implementing the revised plan, emphasis species would be evaluated under project level analysis conducted during plan implementation. Biological Assessments and Evaluations are prepared only for TES species. Where models exist to analyze habitat, these models would be used (e.g. HABCAP, and elk security habitat). Monitoring provisions for these species are presented in the monitoring and evaluation section of the revised plan. Different monitoring emphasis occurs for MIS vs. TES and other categories due to regulations and level of concern, and monitoring for species' habitats is also identified.

Habitat information and information regarding species occurrences on the Forest were obtained primarily from WYNDD.<sup>5</sup> Other sources of data used for emphasis species and species assessments included the following: 1) Wyoming Game and Fish Department's Observation Database<sup>6</sup> and the Atlas of Nongame Animals<sup>7</sup>; 2) bird observations as recorded in Merrill<sup>8</sup>, Beels,<sup>9</sup> and Downing<sup>10</sup>; 3) local botanists and professional botany surveys conducted, 4) breeding bird survey results,<sup>11</sup> and 5) published field guides for amphibian, avian, botanical, and mammalian species.

Within this document, the categories are described and species listed in each category are identified. Species assessments for each species listed in the categories were also prepared, or will be completed for the DEIS. Species assessments are being written to document the biological and ecological elements, conservation measures, and monitoring issues that need consideration when managing for the species and their habitats on the Forest.

## **CATEGORY DESCRIPTIONS**

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This document follows the Rocky Mountain Region approach to categorize species for consideration in plan revision efforts. Emphasis categories include the following: 1) Federally threatened, endangered, proposed, candidate and Forest Service Sensitive species (TES), 2) Management Indicator Species (MIS) and/or Focal species, 3) Species of Local Concern, and 4) Demand species. The first and third categories comprise the "species at risk" on the Forest from a viability perspective. With exception of one species, there was no duplication of species within the emphasis categories,

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<sup>5</sup> Scholl, Summers and R.S. Smith. 2001. Known occurrences of Threatened, Endangered, Forest Sensitive and WYNDD designated Plant and Animal Species of Concern and Community Occurrences for the Bighorn National Forest. Wyoming Natural Diversity Database at University of Wyoming. Laramie, WY. 255 pp.

<sup>6</sup> Clingman, Victoria. 2002. Personal communication with Jon Warder regarding the WYOBS database. Data transmitted via cd. Wyoming Game and Fish Department. Cheyenne, WY.

<sup>7</sup> Luce, B., A. Cerovski, B. Oakleaf, J. Priday, and L. Van Fleet. 1999. Atlas of Birds, Mammals, Reptiles, and Amphibians in Wyoming. Wyoming Game and Fish Department. Lander, WY. 195pp.

<sup>8</sup> Merrill, Evelyn. 1997. Forest Fragmentation and Bird Diversity in the Bighorn National Forest of Wyoming. University of Wisconsin – Stevens Point. Draft thesis. On file at Sheridan FS office.

<sup>9</sup> Beels, Paul. 1995. Summary of Hunter Mesa and Powder River MAPS station avian monitoring results. Unpublished report. Bighorn National Forest.

<sup>10</sup> Downing, H. 1990. Birds of North-central Wyoming and The Bighorn National Forest. Casper, WY. 98 pp.

<sup>11</sup> USGS Patuxent Wildlife Research Center. 2001. Breeding Bird Survey Results – trend analysis and route information. Available online at [www.pwrc.usgs.gov](http://www.pwrc.usgs.gov).



proactive measure to avoid future listing under the ESA. Combined, this category is referred to as TES species. The Rocky Mountain Region revised its sensitive species list in 2003. TES species will be further analyzed in the Biological Assessment and Biological Evaluation prepared for the revised plan and DEIS.

### ***Species of Local Concern***

Species of Local Concern are those species documented or suspected to be at risk on the Forest or have poor presence/absence information based on known species' ranges. These species are not identified as TES species. Some of these species were identified as a result of the revision of the regional sensitive species list, as this process identified species that should be considered locally under this category. These species may also be revised over time according to new information or research available on the species. The selection process for these species was described above under the species at risk section. Plant species with one known occurrence on the Bighorn National Forest were included on this list.

In order to select Species of Local Concern, evaluation criteria identical to the regional evaluation of sensitive species were used, though scaled to the Forest. Species with low concern were not considered as species at risk. Rankings for each of the eight criteria were as follows: A) High concern, B) Some concern, C) No concern, and D) Insufficient information. The evaluation criteria included:

- 1) Geographic distribution on the Forest.
- 2) Geographic distribution outside the Forest.
- 3) Capability of species to disperse.
- 4) Abundance of species on the Forest and broader scales.
- 5) Population trend on the Forest and broader scales.
- 6) Habitat trend on the Forest.
- 7) Vulnerability of habitat on the Forest.
- 8) Life history and demographics of the species.

The section entitled Species Eliminated from Consideration in Emphasis Categories in this document provides a tabular synopsis of the species that fell out of consideration for local concern or other emphasis categories following review of this information. For those species selected as local concern, the evaluation information occurs in the individual species assessments. In addition, individual rating sheets were also prepared for all of the species considered for the local concern category to document selection rationale according to the above criteria. Rating sheets were only completed for species with potential to occur on the Bighorn. These ratings are available in the project record.

With regard to all avian species listed under the PIF Wyoming Bird Conservation Plan, refer to Assessment of Wyoming PIF Species for Bighorn NF Plan Revision for a description of these species and how they will be addressed in the plan revision. A similar document addresses the 2002 US Fish and Wildlife Service Birds of Concern species list.

### ***MIS/Focal***

Management Indicator Species (MIS) and/or Focal species are selected because their status is believed to be indicative of the status of a larger functional group of species, be reflective of the status of a key habitat or biological community type, or act as an early warning of an anticipated stressor to ecological integrity. The term “focal” species was proposed by the Committee of Scientists report<sup>19</sup> for the Forest Service to consider in its proposed revised planning regulations published in 2000 as 36 CFR 219.20 and 219.36. Focal species include MIS but can be expanded to include those species that play a key role in maintaining community structure or processes, or otherwise serve as an indicator of ecological sustainability.<sup>20</sup> The MIS concept was adopted as described under the 1982 Forest Service planning regulations at 36 CFR 219.19, and combined with the focal species concept for this revision effort. A document titled Selection Process for Management Indicator Species describes the selection of MIS/Focal species for this revision.

### ***Demand***

Typically, these species are hunted, fished, trapped, harvested, or collected. They are identified for the social values that these species represent. The list of these species was derived primarily from the Wyoming Game and Fish Department, and from professional botanists. Two plants were identified as demand species due to popularity in collections.

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<sup>19</sup> USDA Forest Service Committee of Scientists. 1999. Sustaining the People's Lands. Washington, D. C. 96 pp. Available online at [www.fs.fed.us/forum/nepa/rule/cosreport.shtml](http://www.fs.fed.us/forum/nepa/rule/cosreport.shtml).

<sup>20</sup> USDA Forest Service. 2000. National Forest System Land Resource Management Planning; Final Rule. Code of Federal Regulations, November 9, 2000. 36 CFR 219 Vol. 65(218): 67568-67581.

## SELECTED EMPHASIS SPECIES

The following tables display the emphasis categories for consideration in the revision of the Forest plan. Descriptions of federal/state rankings that are displayed in the tables occur at the end of this document. A total of 38 TES species are listed below, followed by 6 MIS species, 36 species of local concern, and 14 demand species.

**Table 1. Bighorn NF Species Emphasis Categories**

Common Name	Scientific Name	Federal/State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
<b>THREATENED, ENDANGERED, PROPOSED, CANDIDATE AND REGION 2 FS SENSITIVE SPECIES (TES)</b>					
<b><i>Fish</i></b>					
Yellowstone cutthroat trout	<i>Oncorhynchus clarki bouvieri</i>	Sensitive	G4T2S2	Riverine	Known to limited streams.
Mountain Sucker	<i>Catostomus platyrhynchus</i>	Sensitive	G5/S5	Riverine	Known to Tongue River drainage.
<b><i>Amphibians</i></b>					
Northern leopard frog	<i>Rana pipiens</i>	Sensitive	G5S3	Ponds/Wetland/Riparian	Known to limited areas.
Columbia spotted frog	<i>Rana luteiventris</i>	Sensitive	G4S2S3	Ponds/Wetland/Riparian	Known to limited areas.
Wood frog	<i>Rana sylvatica</i>	Sensitive	G5S2	Ponds/Wetland/Riparian	Known to limited areas.
<b><i>Mammals</i></b>					
Fringed myotis	<i>Myotis thysanodes</i>	Sensitive NSS2	G5/S1B/S1N	Caves/Mines & Forested areas	Known to limited sites.
Spotted bat	<i>Euderma maculatum</i>	Sensitive NSS2	G4/S1B/SZ/N	Caves/Mines & Forested Areas	None known, but locations near Forest and potential habitat.
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	Sensitive NSS2	G4/S1B/S2N	Caves/Mines	Known to limited sites.
Water vole	<i>Microtus richardsoni</i>	Sensitive NSS3	G5/S2S3	Riparian	Known, but very limited in known distribution.
American Marten	<i>Martes americana</i>	Sensitive	G5/S3	Late-successional conifer	Known to several areas.
Wolverine	<i>Gulo gulo</i>	Sensitive NSS3	G4/S2	Spruce-fir/Alpine tundra	Historic/Potential with occasional sightings.
Canada lynx	<i>Lynx canadensis</i>	Threatened NSS2	G5/S1	Spruce-fir forests	Historic/Potential with most recent sighting in 2003.
<b><i>Birds</i></b>					
Harlequin duck	<i>Histrionicus histrionicus</i>	Sensitive/PIF II	G4/S1B/SZ?N	Wetland/Lake	Historic/Potential as sighted nearby.

Common Name	Scientific Name	Federal/ State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
		NSS3			
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened / PIF I	G4/S2B/S3N	Riparian/Lake	No critical habitat or known nesting, only migration or foraging use and no winter roosts. Potential future nesting.
Northern harrier	<i>Circus cyaneus</i>	Sensitive/ PIF III	G5/S4B/S5N	Grasslands/ Shrub-steppe	Known with many observations.
Northern goshawk	<i>Accipiter gentilis</i>	Sensitive/ NSS4/PIF I	G5/S2S3B/S4N	Mature conifer/aspens	Known with several observations.
Peregrine falcon	<i>Falco peregrinus anatum</i>	Sensitive/ NSS3/PIF I	G4T3/S1B S2N	Canyons/Climbs/ Riparian	Known, though sporadic but historic nesting on Forest.
Greater sage grouse	<i>Centrocercus urophasianus</i>	Sensitive/ PIF I	G4/S3	Sage steppe	No leks (breeding) on Forest. Late summer brood rearing primarily on west side of Forest.
Flammulated owl	<i>Otus flammeolus</i>	Sensitive	G4/SA?B	Mature ponderosa/ aspen	None currently known on Forest, though north of it. Limited potential habitat.
Short-eared owl	<i>Asio flammeus</i>	Sensitive/ PIF I	G5/S2S3	Grassland/Sage Steppe	Known, though somewhat limited potential.
Boreal owl	<i>Aegolius funereus</i>	Sensitive/ NSS4/PIF II	G5/S2	Mature Conifer	Known, but from limited sightings.
Lewis' woodpecker	<i>Melanerpes lewis</i>	Sensitive/ NSS3/ PIF II	G4/S2B/SZN	Conifer/Riparian	Known, but from limited sightings.
Three-toed woodpecker	<i>Picoides tridactylus</i>	Sensitive/ PIF II	G5/S3	Mature Conifer	Known to several areas of Forest.
Olive-sided flycatcher	<i>Contopus cooperi</i>	Sensitive	G4/S4B/SZN	Mature Conifer	Known to several areas of Forest.
Loggerhead shrike	<i>Lanius ludovicianus</i>	Sensitive/ PIF II	G5/S4B/SZN	Grassland	Known on fringes of Forest where meadows occur.
Brewer's sparrow	<i>Spizella breweri</i>	Sensitive/ PIF I	G5/S3B/SZN	Sage steppe	Known to several areas of Forest.
Sage sparrow	<i>Amphispiza bellii</i>	Sensitive/ PIF I	G5/S3B/SZN	Sage steppe	None known on Forest, but potential.
Grasshopper sparrow	<i>Ammodramus savannarum</i>	Sensitive/ NSS4/PIF II	G4S3	Grasslands	Known from limited sightings.
<b>Plants</b>					
Mountain	<i>Cypripedium</i>	Sensitive/	G4G5/S1	Shady forests	Known from 3

Common Name	Scientific Name	Federal/State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
lady's slipper	<i>montanum</i>	SSC		and riparian shrublands at mid-elevations.	occurrences on Forest.
Yellow lady's slipper	<i>Cypripedium parviflorum</i>	Sensitive/SSC	G5/S1S2	Damp mossy forests, and streamsides at mid-elevations.	Known from 2 occurrences on Forest.
Russet cotton-grass	<i>Eriophorum chamissonis</i>	Sensitive/SSC	G5/S1S2	Montane swamps and bogs.	Known from 1 occurrence on Forest.
Hall's Fescue	<i>Festuca hallii</i>	Sensitive/SSC	G3G4/S2	Montane meadows	Known from 1 vague historical (1898) record.
Grass-of-parnassus	<i>Parnassia kotzebuei</i>	Sensitive/SSC	G4/S2	Moist seeps.	Known from 1 occurrence on Forest.
Cary Beardtongue	<i>Penstemon caryi</i>	Sensitive/SSC	G3/S3	Disturbed areas on sedimentary soils.	Known from 14 occurrences on Forest.
Woolly twinpod	<i>Physaria lanata</i>	Sensitive/SSC	G5/S2	Rocky outcrops and rocky soil, without dense grass or shrub cover. Forested areas.	Known from 3 occurrences on Forest.
Tranquil golden-weed	<i>Pyrrocoma clementis</i> var. <i>villosa</i>	Sensitive/SSC	G3G4T?/S1	Sagebrush grasslands and montane meadows.	Known from 3 occurrences on Forest.
Northern Blackberry	<i>Rubus acaulis</i>	Sensitive/SSC	G5/S1	Riparian area along Sourdough Creek	Known from 1 occurrence on Forest.
Lesser bladderpod	<i>Utricularia minor</i>	Sensitive/SSC	G5/S1S2	Submerged in ponds, slow moving streams	Known from 1 occurrence on Forest.

### MIS/FOCAL SPECIES

#### Fish

Rainbow trout	<i>Oncorhynchus mykiss</i>	None	G5SE	Riverine, lakes	Known and widespread.
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#### Mammals

Beaver	<i>Castor canadensis</i>	Furbearer	G5/S5	Riparian	Known to several areas on Forest. Reduced from historical levels.
Rocky Mountain Elk	<i>Cervus elaphus nelsoni</i>	Big game	G5/S5	Generalist/ Mature conifer security areas.	Widespread on Forest.
Red squirrel	<i>Tamiasciurus hudsonicus</i>	Small game	G5/S5	Mature conifer with CWD.	Widespread on Forest.

#### Birds

Common Name	Scientific Name	Federal/ State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
Red-breasted nuthatch	<i>Sitta canadensis</i>	Non-game	G5/S5	Mature conifer w/snags	Widespread on Forest.
Brewer's sparrow	<i>Spizella breweri</i>	Non-game/FS sensitive	G5/S3	Sagebrush	Widespread where habitat occurs.
<b>SPECIES OF LOCAL CONCERN</b>					
<b>Mammals</b>					
Long-eared myotis	<i>Myotis evotis</i>	NSS2	G5/S1	Caves/Mines	Known, but to limited sites.
Hoary bat	<i>Lasiurus cinereus</i>	None	G5/S2B/SZ/N	Aspen/Conifer Snags	None/Potential. Due to lack of aspen on Forest, may be less potential than other areas of state.
Rocky Mountain Bighorn Sheep	<i>Ovis canadensis</i>	Big game	G4G5	Rock/Alpine meadow	Known/historic. Shell watershed currently with <30 animals.
<b>Birds</b>					
Common loon	<i>Gavia immer</i>	PIF II/NSS1	G5/S2B/SZN	Wetland/Lake	Known observations, but no known breeding.
Merlin	<i>Falco columbarius</i>	NSS3/ PIF II	G5/S2B/SZN	Ponderosa Pine/Riparian	Known, but to few areas due to limited potential habitat. Nests in trees.
Swainson's hawk	<i>Buteo swainsoni</i>	PIF I	G5/S4B/SZN	Grassland/Riparian	Known to few areas. Nests in trees.
Great gray owl	<i>Strix nebulosa</i>	NSS4/ PIF II	G5/S2	Mature Conifer	Suspected occurrence, and potential habitat.
Pygmy nuthatch	<i>Sitta pygmaea</i>	NSS4/ PIF II	G5/S2S3	Mature Conifer	Known, but from limited sightings.
Rufous hummingbird	<i>Selasphorus rufus</i>	PIF II	G5/S2B	Meadows/Riparian/Shrub	Known but limited occurrences.
Calliope hummingbird	<i>Stellula calliope</i>	PIF II	G5/S2B/SZN	Conifer/Riparian	One known occurrence.
Golden-crowned kinglet	<i>Regulus satrapa</i>	PIF II	G5/S3	Spruce-fir	Known, but through limited occurrences.
Baird's sparrow	<i>Ammodramus bairdii</i>	PIFI/ NSS4	G4/S1B/SZN	Grassland/Riparian/ Shrub	Known from limited sightings.
<b>Plants</b>					
Musk root	<i>Adoxa moschatellina</i>	None/SSC	G5/S1	Shady, moist, moss-rich limestone cliffs	Known – 2 1 in Leigh pRNA
Aromatic	<i>Antennaria</i>	None/	G3G4/S2	Open	Known -1

Common Name	Scientific Name	Federal/ State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
Pussytoes	<i>aromatica</i>	Watch		slopes/ridges, limestone talus at or above timberline	
Pygmy Pussytoes	<i>Antennaria monocephala</i>	None/SSC	G4G5/S1	Wind swept, open slopes, ridges in alpine or subalpine tundra	Known – 1 Cloud Peak Wilderness
Upward lobed moonwort	<i>Botrychium ascendens</i>	None/ SSC	G2G3/S1	Hummocky marshes and bogs	Known from 1 occurrence on Forest.
Lance-leaved grapefern	<i>Botrychium lanceolatum</i>	None/SSC	G5/S1	Riparian areas, organic rich hummocks	Known -1
Mingan moonwort	<i>Botrychium minganense</i>	None/SSC	G4/S1	Wide variety: riparian, moist meadows, sand dunes, prairies, woods.	Known – 2 1 in Mann Cr. pRNA
Rattlesnake fern	<i>Botrychium virginianum</i>	None/SSC	G5/S1	Calcium rich, moist shady areas	Known - 1 Mann Cr. pRNA
Mud sedge	<i>Carex limosa</i>	None/ SSC	G5/S2	Wetlands, often limey	Known from 1 occurrence on Forest.
Short-leaved sedge	<i>Carex misandra</i>	None/SSC	G5/S1	Alpine wet meadows, willows, streambanks	Known – 1 McClain pRNA
Leafy thistle	<i>Cirsium foliosum</i>	None/SSC	G5/S1	Moist areas along roads, meadows, slopes	Known -1
Fragile Rockbrake	<i>Cryptogramma stelleri</i>	None/SSC	G5/S1	Moist wooded slopes and limestone cliffs	Known – 1 Cloud Peak Wilderness
White arctic whitlow-grass	<i>Draba fladnizensis var. pattersonii</i>	None/SSC	G4T2T3/S2	Fellfields and talus slopes above 1000 feet	Known – 2 Cloud Peak Wilderness
Howard forget-me-not	<i>Eritrichium howardii</i>	None/ SSC	G4/S1	Limestone outcrops and dry rocky areas	Known from 1 occurrence on Forest.
Woodland horsetail	<i>Equisetum sylvaticum</i>	None/SSC	G5/S1	Preacher Rock Bog - riparian	Known - 1
Low fleabane	<i>Erigeron humilis</i>	None/SSC	G4/S2	Granite and limestone cliff faces on moist mossy microsites	Known – 1 Cloud Peak Wilderness
Three-flower	<i>Juncus</i>	None/SSC	G5T5/S1	Wet gravel	Known – 1 Cloud

Common Name	Scientific Name	Federal/ State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
rush	<i>triglumis</i> var. <i>triglumis</i>			slopes below melting snows	Peak Wilderness
Watson's prickly-phlox	<i>Linanthus watsonii</i>	None/ SSC	G3G5/S1	Dry ledges on sedimentary cliffs.	Known from 1 occurrence on Forest.
Northern twayblade	<i>Listera borealis</i>	None/ SSC	G4/S2	Moist, shady spruce forests.	Known from 2 locations on Forest.
Broad-leaved twayblade	<i>Listera convallarioides</i>	None/ SSC	G5/S1	Moist, shady spruce forests.	Known from 1 occurrence on Forest.
Sheathed musineon	<i>Musineon vaginatum</i>	None/SSC	G3?/S2	Limestone outcrops, chugwater redbeds	Known - 6
Alpine poppy	<i>Papaver kluanense</i>	SSC	G5T3?/S2	Alpine meadows, talus slopes and fellfields	Known – 1 Cloud Peak Wilderness plus additional unconfirmed reports
Mountain Lousewort	<i>Pedicularis pulchella</i>	None	G3S2	Alpine meadows and alpine scree slopes	Known – 2 Cloud Peak Wilderness
Large-leaved pondweed	<i>Potamogeton amplifolius</i>	SSC	G5/S1	Slow moving streams and lakes	Known – 1 Cloud Peak Wilderness
Hairy Prince's Plume	<i>Stanleya tomentosa</i> var. <i>tomentosa</i>	None/None	G4T3/S2	Limber pine woodlands, juniper shrublands on limey-sandstone ridges, dry dolomite cliffs/talus	Known -1 Near Shell Canyon Research Natural Area
<b>DEMAND SPECIES</b>					
<b>Fish</b>					
Brook trout	<i>Salvelinus fontinalis</i>	None	G5SE	Riverine, lakes	Known and widespread.
Brown trout	<i>Salmo trutta</i>	None	G5SE	Riverine, lakes	Known to several streams.
Snake River Cutthroat Trout	<i>Oncorhynchus clarki</i> ssp. 2	None	G4T1T2Q	Riverine, lakes	Known (Subspecies of YCT, introduced species with some natural reproduction)
<b>Mammals</b>					
Mule Deer	<i>Odocoileus hemionus</i>	Big game	G5/S5	Generalist	Known and widespread/Stable
Moose	<i>Alces alces</i>	Big game	G5/S5	Willow/Riparian	Known and

Common Name	Scientific Name	Federal/ State Ranking	Natural Heritage Ranking	Habitat	Occurrence on Forest
	<i>shirasi</i>				widespread/Stable-Increasing
Black bear	<i>Ursus americanus</i>	Game	G5/S5	Generalist	Known and widespread/Stable
Mountain lion	<i>Felis concolor</i>	Game	G5/S5	Generalist	Known and widespread/Stable
<b>Birds</b>					
Ruffed grouse	<i>Bonasa umbellus</i>	Upland game	G5/S5	Forested Areas	Known to northern portion of Forest/Stable
Blue grouse	<i>Dendragapus obscurus</i>	Upland game	G5/S5	Spruce-fir	Known and widespread/Stable
Merriam's turkey	<i>Meleagris gallopavo merriami</i>	Upland game	G5/S5	Ponderosa Pine	Known primarily to southeast Forest/Stable-Increasing
Gray partridge	<i>Perdix perdix</i>	Upland game	G5/S5	Prairie/Meadow/shrub	Fringes of Forest mostly west side. Likely stable.
Plains sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	Upland game	G4/S4	Grassland/Mountain shrub	Known to southeast corner of Forest.
<b>Plants</b>					
Sweetgrass	<i>Hierochloe odorata</i>	None/HSS	None	Moist meadows.	Likely common. High demand for burning incense and basketry.
Purple Cone Flower	<i>Echinacea angustifolia</i>	None	G4/S3	Dry open prairies and plains on sandy soils	Occurs near the Forest boundary, but has not been observed on the Forest, despite searches. High demand for medicinal properties.

## **SPECIES ELIMINATED FROM CONSIDERATION IN EMPHASIS CATEGORIES**

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The following information does not display a complete list of all species that could occur on the Forest and yet were not included as an emphasis species. The following species were those that were not considered as Species of Local Concern or other categories. These are species that may have been on species lists from the USFWS, WYNDD, PIF, WGFD, or others. An additional list considered was the BLM's sensitive species list for Wyoming.<sup>21</sup> Refer to Attachment C for descriptions of rankings used in the table.

**Table 2. Rationale for Species Not Listed in Emphasis Categories**

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
<b><i>Mammals</i></b>			
Preble's shrew	<i>Sorex preblei</i>	G4/S1S2	Not known historically to Bighorn NF. Limited potential to occur.
Prairie shrew	<i>Sorex haydeni</i>	G4/S2	Riparian Meadows. Known occurrence from Beauvais. <sup>22</sup> Occurrence was expansion of range, and may be at fringe of known range. Similar species ( <i>s. cinereus</i> ) known and abundant (Beauvais, 1997).
Vagrant shrew	<i>Sorex vagrans vagrans</i>	G5/S5/NSS3	Known only to southwest WY. Similar species ( <i>s. monticolus</i> ) known and abundant (Beauvais, 1997).
Dwarf shrew	<i>Sorex nanus</i>	G4/S2S3	Alpine talus/Riparian Meadow. Known location from Beauvais (1997), which was expansion of known range. Somewhat limited in overall range, but no known threats.
Water shrew	<i>Sorex palustris navigator</i>	G5/S4	Occurs in riparian habitats. Not considered a MIS due to difficulty in censusing population at Forest level. Concern over genetic isolation similar to pika. Common in range, so not considered local concern.
Pygmy shrew	<i>Sorex montanus hoyi</i>	Sensitive/G5/S1/NS S2	Not known historically or potentially to Bighorn NF.
Eastern mole	<i>Scalopus aquaticus</i>	G5/S2	Not known historically or potentially to Bighorn NF. SE WY.

<sup>21</sup> USDI Bureau of Land Management. 2001. BLM Wyoming sensitive species policy and list. Cheyenne, WY. 14 pp.

<sup>22</sup> Beauvais, G. 1999. The Status of Rare Vertebrates in the Bighorn Landscape. Report prepared for the Nature Conservancy. Wyoming Natural Diversity Database. Laramie, WY.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Yuma myotis	<i>Myotis yumanensis</i>	G5/S1?B/SZ?N	Known to desert or great basin or plains type habitat. Little potential to occur on the Forest, or in northern Wyoming, though one collected in Sheridan.
Northern myotis	<i>Myotis septentrionalis</i>	G4/NSS2	Not known to historically occur in central or western Wyoming.
Small-footed myotis	<i>Myotis ciliolabrum</i>	G5/S3B/S3NNSS3	Known to caves on Forest, but regionally of more secure status. Monitoring for other bat species would detect trends for this species.
Pallid bat	<i>Antrozous pallidus pallidus</i>	G5/S1B/SZN/NSS2	Desert/grassland/Low level riparian and rock crevices. Not known historically to north-central Wyoming.
Little brown bat	<i>Myotis lucifugus</i>	G5/S5/NSS3	Known and common in caves and mines. Other species of more rarity selected as local concern.
Big brown bat	<i>Eptesicus fuscus pallidus</i>	G5/S5/NSS3	Known and common in caves and mines. Other species of more rarity selected as local concern.
Pika	<i>Ochotonce princeps obscura</i>	G5/T2S2	Occurs in rock/scree in wilderness and other locales on Forest. Minimal or no potential for habitat disturbance. Not considered a MIS due to difficulty in censusing population at Forest level. Concern over genetic isolation is outside the realm of FS control/responsibility. Some potential for forage competition with ungulates in alpine meadows, though most meadows not suspect to snowmobiling or other compacting activities.
Pygmy rabbit	<i>Sylvilagus idahoensis</i>	G4/S2/NSS3	Known only to SW Wyoming.
Eastern cottontail	<i>Sylvilagus floridanus</i>	G5/S2	Known only to SE Wyoming
Snowshoe hare	<i>Lepus americanus seclusus</i>	G5/S5	Common to Forest. Not considered a MIS due to difficulty in censusing population at Forest level and cyclic populations. Concern over genetic isolation similar to pika. Habitat concerns addressed primarily through lynx amendment.
Cliff chipmunk	<i>Tamias dorsalis utahensis</i>	G5/S1/NSS3	Known only to SW Wyoming.
Allen's thirteen-lined ground squirrel	<i>Spermophilus tridecemlineatus alleni</i>	G5/T1/S1	Grassland/ Sage steppe. Known locations on Forest. Per WGFD, species is widely distributed and habitat not of concern. Ambiguity in taxonomy.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Spotted ground squirrel	<i>Spermophilus spilosoma obsoletus</i>	G5/S3/NSS3	Known only to SE Wyoming.
Prairie Dogs (white and black-tailed, Gunnison's)	<i>Cynomys sp.</i>	Candidate/Sensitive / G4/S2	No prairie dog towns on Forest, historically, and no known potential.
Abert's squirrel	<i>Sciurus aberti</i>	G5/S2	Known only to SE WY.
Red squirrel	<i>Tamiasciurus hudsonicus</i>	G5/S5	Common to Forest in mature conifer. Previous MIS. Concern over genetic isolation similar to pika.
Northern flying squirrel	<i>Glaucomys sabrinus</i>	G5/T2Q/S2?	Not known to historically occur on Bighorn NF.
Wyoming pocket gopher	<i>Thomomys clusius</i>	G2/S1S2	Known only to south central WY.
Idaho pocket gopher	<i>Thomomys idahoensis</i>	G4/S2?/NSS3	Known only to SW Wyoming.
Olive-backed pocket mouse	<i>Perognathus fasciatus</i>	G5/S4/NSS3	Not likely on Bighorn due to elevation.
Great Basin, Silky, Hispid and Plains pocket mice	<i>Perognathus sp.</i>	G5/S2/NSS3	Known only to SW Wyoming, Eastern, and SE Wyoming, respectively.
Plains harvest mouse	<i>Reithrodontomys montanus albescens</i>	G5/S2/NSS3	Known only to Eastern Wyoming, likely elevationally limited on Bighorn.
Pinon mouse, canyon mouse	<i>Peromyscus sp.</i>	G5/S4/NSS3 G5/S1/NSS3	Known only to SW Wyoming.
White-footed mouse	<i>Peromyscus leucopus aridulus</i>	G5/S2	Likely occurs on Forest in wooded draws and in conjunction with deer mice. Common throughout range, and not known to be of local concern.
Heather vole	<i>Phenacomys intermedius</i>	G5/S5/NSS3	Possibly known to Bighorns, but abundant throughout range. Requested by WGFD, but WYNDD unsure if occurs on Bighorn. Not documented in Clark and Stromberg <sup>23</sup> to occur on Bighorn.
Prairie vole	<i>Microtus ochrogaster</i>	G5/S5/NSS3	Not likely on Bighorn due to elevation.
Southern red-backed vole	<i>Clethrionomys gapperi</i>	G5/S5	Common to Forest. Not considered a MIS due to difficulty in population census at Forest level. Concern over genetic isolation similar to pika.
Bear Lodge meadow jumping mouse	<i>Zapus hudsonius campestris</i>	G5T3/S2	Known only to eastern WY.

<sup>23</sup> Clark, T.W. and M.R. Stromberg. 1987. Mammals in Wyoming. University of Kansas Museum of Natural History. Lawrence, Kansas. 314 pp.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Preble's meadow jumping mouse	<i>Zapus hudsonius preblei</i>	G5T2/S1	Known only to southern WY.
Gray wolf <sup>24,25</sup>	<i>Canis lupis</i>	Threatened/ NSS2/G4/S2	See footnote. Generalist in habitat. Historically present, likely reoccurring in near future.
Foxes (Swift and Kit)	<i>Vulpes sp.</i>	Sensitive	Not historically known to occur on the Bighorn, and no potential.
Common gray fox	<i>Urocyon cinereoargenteus</i>	G5/S2	Not known to the Bighorn, though possibly on SE end of range. Abundant in range.
Grizzly bear <sup>26</sup>	<i>Ursus arctos horribilis</i>	Threatened/G4/S2	See footnote. Alpine/Spruce-fir. Historically known, some possibility of future presence.
Ringtail	<i>Bassariscus astutus</i>	G5/S2	Known only to southern WY.
Fisher	<i>Martes pennanti</i>	G5/S1	One questionable historic observation on Forest. Not known from past 4 decades, and outside of species' recognized range.
Least weasel	<i>Mustela nivalis</i>	G5/S1/NSS3	No known occurrence on Forest. No known potential habitat due to lower elevation rolling hills and riparian woodlands required.
Black-footed ferret	<i>Mustela nigripes</i>	Endangered/G1/S1/ NSS1	No prairie dog towns on Forest, historically, and no known potential. On plains surrounding Forest.
Eastern and western spotted skunks	<i>Spilogale sp.</i>	G5/S2	Plains/basin and/or low elevation species, with limited to no potential on Forest. More abundant range-wide.
Northern River Otter	<i>Lontra canadensis</i>	G5/S3 Sensitive NSS5	Riverine species. Known to occur historically, however no populations currently and no known plans or potential (populations nearby) for reintroduction.

<sup>24</sup> Information on management for these species was obtained from the USFWS (Root, 2002). The wolf has been sighted on the Forest, and is likely to occur more abundantly within the next 10 years. Any wolves established on the Bighorn would be outside the wolf recovery zone, and no special treatment for protection or management would occur under the ESA. The state's Wolf Management Plan would dictate appropriate management response.

<sup>25</sup> Root, Terry. 2001. Personal communication with Jon Warder regarding status and management of wolves and grizzly bear on the Bighorn NF. USDI Fish and Wildlife Service employee. Cody, WY.

<sup>26</sup> The grizzly bear may colonize to the Forest, however the Grizzly Bear Management Plan adopted by the state (WGFD 2002) seeks not to establish a population on the Bighorns due to likely human interaction conflicts and associated costs. Bears would likely be relocated to a designated recovery area. Neither bears nor wolves would be analyzed in Biological Assessments or Evaluations.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Bison	<i>Bos bison</i>	G3/S2	Historically present in small numbers. Free-ranging near NW corner of Forest, though not likely present on Forest nor in future. More abundant range-wide.
<b>Birds</b>			
Clark's grebe, Western grebe	<i>Aechmophorus</i> <i>sp.</i>	G5/S2B/SZN/NSS4 G5/S4B/SZN/NSS4	Clark's not known to occur on Forest, but Western is common to many lakes.
American white pelican	<i>Pelecanus</i> <i>erythrorhynchos</i>	G3/S1B/SZN/PIF II/NSS3	May occur on a migrational basis, though no nesting known to occur, likely due to elevational limits. Known in plains/lakes surrounding Forest.
American bittern	<i>Botaurus</i> <i>lentiginosus</i>	Sensitive/G4/S2B/S ZN/NSS3	Not known historically on Bighorn, limited potential due to elevation. Known to plains adjacent to Forest.
Great blue heron	<i>Ardea herodias</i>	G5/S4B/SZN/NSS4	Known but relatively common to Forest. No known rookeries on Forest.
Snowy egret	<i>Egretta thula</i>	G5/S3B/SZN/NSS3	Not known historically on Bighorn, limited potential due to elevation. Very rare on wetlands adjacent to Forest.
Black-crowned night heron	<i>Nycticorax</i> <i>nycticorax</i>	G5/S3B/SZN/NSS3	Not known historically on Bighorn, limited potential due to elevation. Rare on wetlands adjacent to Forest.
Greater sandhill crane	<i>Grus canadensis</i> <i>tabida</i>	G5/S4B/S4N	Known to few areas on Forest, but common in rest of range. Primary habitat is meadows and riparian, most of its occurrences are known to agricultural lands adjacent to Forest.
White-faced ibis	<i>Plegadis chihi</i>	G5/S1B/SZN/NSS3	Not known historically on Bighorn, limited potential due to elevation. Rare on wetlands adjacent to Forest.
Trumpeter swan	<i>Cygnus buccinator</i>	G4/S1BS2N/PIF I/NSS2	No historic sightings. Little potential due to elevation.
Ring-necked duck	<i>Aythya collaris</i>	G5/S3B/S3/N	Potential habitat and past occurrence on Forest, however represented by other species, and not a PIF priority species.
Bufflehead	<i>Bucephala albeola</i>	G5/S1B/S4N	Potential habitat as cavity nesting, though typically lower elevation. Not known to breed on Forest, though has been observed migrating through. Abundant throughout range.

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Osprey	<i>Pandion haliaetus</i>	G5S3B/SZN	Known occurrences, though no breeding known. With increases in populations, there is potential for breeding to occur, but raptor guidelines would protect. Nests typically only at risk from recreation disturbance near lakes, rather than other management activities.
Ferruginous hawk	<i>Buteo regalis</i>	Sensitive/NSS3/G4 S3BS3N/ PIF I	No historic sightings, limited potential habitat. Known to plains surrounding Forest.
Golden eagle	<i>Aquila chrysaetos</i>	G5/S3?B/S3N	Suggested as local concern or MIS by R2, USFWS Avian Concern. Not justified as fairly common to Forest and nesting sites usually protected in steep and rocky canyons, little opportunity for management related disturbance. Raptor guidelines would protect.
Prairie falcon	<i>Falco mexicanus</i>	G5/S4B/S4N	Known occurrences – nests in cliffs. Nesting habitat secure, and no management disturbances likely. More common than justified for local concern or other. Raptor guidelines would protect nests.
White-tailed ptarmigan	<i>Lagopus leucurus</i>	Sensitive/G5/S1/PIF III	No known current or historical records.
Prairie chickens (Greater and lesser)	<i>Tympanuchus sp.</i>	Sensitive/G4/S1	Outside of range of species. No known or historic locations on Forest.
Columbian sharp-tailed grouse	<i>Tympanuchus phasianellus columbianus</i>	Sensitive/PIF III/G4/S4	Sharp-tailed grouse that may use the southeast side of the Forest in the summer (no known leks) are the “plains” subspecies. Sage/Grass is their primary habitat.
Northern bobwhite	<i>Colinus virginianus</i>	G5/S1	No historic or known potential on Forest.
Whooping crane	<i>Grus americana</i>	G1/S1N	No historic or known potential on Forest.
Snowy plover, Piping plover	<i>Charadrius sp.</i>	G3/G4/S2	No historic or known potential on Forest.
Mountain plover	<i>Charadrius montanus</i>	Proposed/G2S2BS ZN/PIF I	No shortgrass prairie or prairie dog towns on the Forest, historically, and no known potential. Surveys in 2002 in potential habitat did not detect any occurrences. Elevation is likely limiting factor due to snow abundance.
Upland sandpiper	<i>Bartramia longicauda</i>	G5/S3BSZN/PIF I	No shortgrass prairie or prairie dog towns on the Forest. Little potential.

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Long-billed curlew	<i>Numenius americanus</i>	Sensitive/G5/S3BS ZN/PIF I	Limited habitat potential due to elevation. No historic sightings. Breeding not likely.
Wilson's phalarope	<i>Phalaropus tricolor</i>	G5/S3BS3N/PIF I	Limited habitat potential due to elevation. Breeding not likely. One observation known in Merrill (1997).
Franklin's, ring-billed, and herring gulls	<i>Larus sp.</i>	G4/SHBSZN/PIF I G5/S1B	Limited habitat potential due to elevation. No historic sightings. Breeding not likely.
Caspian, Common tern	<i>Sterna sp.</i>	G5/S1B/SZN/NSS3	Not known historically on Bighorn, limited potential due to elevation. Rare on wetlands adjacent to Forest.
Forster's tern	<i>Sterna forsteri</i>	G5/S1BSZN/PIF I/NSS3	Not known historically on Bighorn, limited potential due to elevation. Rare on wetlands adjacent to Forest.
Black tern	<i>Chlidonias niger</i>	G4/S1BSZN/PIF I/NSS3	No breeding known to occur. Limited habitat potential, likely due to elevation.
Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	G5/S2B/SZN PIF II	Only known historically off Forest in low elevation riparian. No potential habitat due to elevation.
Yellow-billed cuckoo	<i>Coccyzus americanaus</i>	Sensitive/Candidate / G5/S2B/SZN/NSS2/ PIF II	Only known historically off Forest in low elevation riparian. No potential habitat due to elevation.
Barn owl	<i>Tyto alba</i>	G5/S1B	No historic or known potential on Forest.
Western screech owl	<i>Otus kennicottii</i>	G5/S2 PIF II	Not likely on Forest, but on plains surrounding Forest. None detected in owl surveys to date.
Northern pygmy owl	<i>Glaucidium gnoma</i>	G5/S2/NSS4	Not known to historically occur on Forest, though some potential for habitat. Represented by other species.
Burrowing owl	<i>Athene cunicularia</i>	Sensitive/G4/S3BS ZN/PIF I	No shortgrass prairie or prairie dog towns on the Forest. Little or no potential. No historic sightings.
Black swift	<i>Cypseloides niger</i>	Sensitive/G4/SHB/S AN	Not known to occur historically on Bighorn. Limited potential due to short/small waterfalls. Surveys in 8/02 did not find any occurrences.
Black-chinned hummingbird	<i>Archilochus alexandri</i>	G5/S1B PIF II	Not known to occur on Forest, southern WY only.
Williamson's sapsucker	<i>Sphyrapicus thyroideus</i>	G5/S3B/SZN PIF II	Known occurrences. Conifer and riparian woodlands. Not justified as local concern as more common in range and in state.
Black-backed woodpecker	<i>Picoides arcticus</i>	Sensitive/G5/S2/NS S4 PIF II	Not known on Bighorn, though occurs in Black Hills and north in MT.

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Willow flycatcher	<i>Empidonax traillii</i>	G5/S4B/SZN PIF II	R2 suggested as local concern or MIS. Not justified as local concern since more common on Forest and in state. Not selected as MIS since migratory species.
Hammond's flycatcher	<i>Empidonax hammondii</i>	G5/S3B/SZN PIF II	Known occurrences. Bighorn would be eastern extent of species. Common in rest of range.
Eastern phoebe	<i>Sayornis phoebe</i>	G5/S1B/SZN	Not likely on Forest. East of Forest on plains is western extent of distribution.
Ash-throated flycatcher	<i>Myiarchus cinerascens</i>	G5/S3?B/SZN/PIF II/NSS3	Not known historically on Forest. One very rare historic location adjacent to Forest near Sheridan.
Cassin's kingbird	<i>Tyrannus vociferans</i>	G5/S3B/SZN PIF II	Known only to eastern WY.
Purple martin	<i>Progne subis</i>	Sensitive/G5/SHB/SZN	Not known to nest in WY.
Western scrub jay	<i>Aphelocoma coerulescens</i>	G5/S2 PIF II	Not known historically on Forest, and very rare potential adjacent to it.
Juniper titmouse	<i>Parus inornatus</i>	G5/S2B/SZN/NSS3	Known only to southern WY. Not historically known on Forest.
Bushtit	<i>Psaltriparus minimus</i>	G5/S2/NSS3 PIF II	Known to southwest WY. Not historically known on Forest.
Winter wren	<i>Troglodytes troglodytes</i>	G5/S1BSZN/	No known to Forest. At fringe of known range if it occurs at all on the Forest. More abundant in main species range.
Eastern bluebird	<i>Sialia sialis</i>	G5/S1B	East of Forest. No known potential on Forest.
Veery	<i>Catharus fuscescens</i>	G5/S5B/SZN/NSS4	Known to occur on Forest. Too common for local concern.
Orange-crowned warbler	<i>Vermivora celata</i>	G5/S5B/S5N/NSS4	Known to occur on Forest. Too common for local concern.
Virginia's warbler	<i>Vermivora virginiae</i>	G5/S2B/SZN	Known only to southern WY.
Black-throated gray warbler	<i>Dendroica nigrescens</i>	G5/S2B/SZN	Not known to occur on Forest. At fringe of range if potentially occurred.
Townsend's warbler	<i>Dendroica townsendi</i>	G5/S1B/SZN PIF II	Not known to occur on Forest. At fringe of range if potentially occurred.
Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	G5/S1B/SZN	Known to eastern WY and plains east of Forest.
Dickcissel	<i>Spiza americana</i>	G5/S2B/SZN	Known to eastern WY and plains east of Forest.
Brown creeper	<i>Certhia americana</i>	G5/S4 PIF II	Known to mature conifer in several areas of Forest. Elusive, but more common than previously thought. S4 ranking and represented by other species for snags, old growth.

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American dipper	<i>Cinclus mexicanus</i>	G5/S5B/SZN	R2 suggested consideration as Local Concern or MIS. Common species on Forest, so not local concern. Refer to MIS document.
American redstart	<i>Setophaga ruticilla</i>	G5/S4B/S5N/NSS4	Common adjacent to Forest, but appears elevationally limited at 5,500'.
Common yellowthroat	<i>Geothlypis trichas</i>	G5/S4B/S4N/NSS4	Known to occur on Forest. Too common for local concern.
Indigo bunting	<i>Passerina cyanea</i>	G5/S3B/S3N/NSS4	Rare occurrence on Forest possibly due to elevation, but more common surrounding Forest than is justified for local concern.
Cassin's sparrow	<i>Aimophila cassinii</i>	Sensitive/G5/S1B/SZ ZN	None known to occur in northern WY. Outside species' range.
White-winged junco	<i>Junco hyemalis</i>	G5/S2B/S3N	Known to eastern WY, is subspecies of dark-eyed.
McCown's longspur	<i>Calcarius mccownii</i>	Sensitive/G5/S3BS ZN/PIF I	No historic sightings, limited potential habitat.
Chestnut-collared longspur	<i>Calcarius ornatus</i>	Sensitive/G5/S2B/S ZN/PIF II	One obscure (migratory) location on Forest, otherwise known to plains surrounding Forest (Downing 1990), with no potential on Forest.
Bobolink	<i>Dolichonyx oryzivorus</i>	G5/S3B/SZN/NSS4	May occur on fringes of Forest in grassland/meadows, but common to plains surrounding Forest.
Scott's Oriole	<i>Icterus parisorum</i>	G5/S1/B/SZN/NSS3	Known to southern WY. Not historically known to Forest.
Brown-capped rosy finch	<i>Leucosticte arctoa</i>	G4/S1B	Known to southern WY.
White-winged crossbill	<i>Loxia leucoptera</i>	G5/S1B/S2N	Historic sightings, and potential habitat. At fringe of known range if it breeds at all on the Forest, so not considered as local concern. Irruptive with cone crops and likely influx during those times.
<b>Reptiles</b>			
Milk snake	<i>Lampropeltis triangulum</i>	G5/S2S3	Generalist. None currently known, but potential. Main threat is collection and urban expansion, outside FS control.
Rubber boa	<i>Charina bottae</i>	G5/S2S3	Riparian. Known to occur on Bighorn. Main threat is collection and urban expansion, outside FS control. No likely habitat threats on Forest.
Black Hills redbelly snake	<i>Storeria occipitomaculata pahasapae</i>	Sensitive/G5/S2	No historic or known potential on Forest.
Massasauga rattlesnake	<i>Sistrurus catenatus</i>	Sensitive/G3	No historic or known potential on Forest or Wyoming.
Smooth green snake	<i>Liochlorophis vernalis</i>	Sensitive/G5/S2	No historic or known potential on Forest.

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Great Basin gopher snake	<i>Pituophis melanoleucus</i>	G5/S3	No historic or known potential on Forest.
Midget faded rattlesnake	<i>Crotalus viridis</i>	G5/S1S2	No historic or known potential on Forest.
Blanding's turtle	<i>Emydoidea blandingii</i>	Sensitive/G4	No historic or known potential on Forest or Wyoming.
Western (ornate) box turtle	<i>Terrapene ornata</i>	Sensitive/G5/S1	No historic or known potential on Forest.
Prairie lined racerunner	<i>Cnemidophorus sexlineatus</i>	G5/S2	No historic or known potential on Forest.
Northern many-lined skink	<i>Eumeces multivirgatus</i>	G5/S2	No historic or known potential on Forest.
Northern plateau, red-lipped, northern prairie lizards	<i>Sceloporus sp.</i>	G5/S2	No historic or known potential on Forest.
Northern tree lizard	<i>Urosaurus ornatus</i>	G5/S2	No historic or known potential on Forest.
Northern earless lizard	<i>Holbrookia maculata</i>	G5/S2	No historic or known potential on Forest.
<b>Fish</b>			
Lake Trout	<i>Salvelinus namaycush</i>	G5/SE	Introduced (non-native) and maintained by stocking in select lakes. Some natural reproduction occurring, though limited distribution does not warrant "demand" status.
Golden Trout	<i>Oncorhynchus mykiss aguabonita</i>	G5/SE	Introduced (non-native) and maintained by stocking in select wilderness lakes. Some natural reproduction occurring, though most areas have lost the species due to lack of restocking. Limited distribution does not warrant "demand" status.
Arctic Grayling	<i>Thymallus arcticus</i>	G5/S2?	Introduced (non-native) and maintained by stocking in select lakes. Some natural reproduction in streams, though limited distribution does not warrant "demand" status.
Mottled Sculpin	<i>Cottus bairdi</i>	G5/S5	No historic or known potential on Forest. Common off of the Forest.
White sucker	<i>Catostomus commersoni</i>	G5/S5	No historic or known potential on Forest. Common off of the Forest.
Longnose sucker	<i>Catostomus catostomus</i>	G5/S5	No historic or known potential on Forest. Common off of the Forest.
Mountain whitefish	<i>Prosopium williamsoni</i>	G5/S5	Native species off the Forest. Occurs in the lower Tongue drainage, and is common off of the Forest.
Longnose Dace	<i>Rhinichthys cataractae</i>	G5/S5	No historic or known potential on Forest. Common off of the Forest.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Fathead Minnow	<i>Pimephales promelas</i>	G5/S5	No historic or known potential on Forest. Common off of the Forest.
Goldfish	<i>Carassius auratus</i>	G5/SE	No historic or known potential on Forest.
Sturgeon, Arkansas River speckled Chub	<i>Macrhybopsis sp.</i>	Sensitive/G2/S1S2	No historic or known potential on Forest.
Shovelnose sturgeon	<i>Scaphirhynchus platyrhynchus</i>	G4/S1	No historic or known potential on Forest.
Rio Grande, Leatherside, humpback, bonytail, and roundtail chub	<i>Gila sp.</i>	Endangered/SensitiveG3/G1/S1	No historic or known potential on Forest.
Hornyhead chub	<i>Nocomis biguttatus</i>	Sensitive/G5/S2	No historic or known potential on Forest.
Lake Chub	<i>Couesius plumbeus</i>	Sensitive/G5/S5	Introduced (non-native) into select lakes within Cloud Peak wilderness. Though a sensitive species, not considered sensitive on this Forest due to non-native status. Limited distribution does not warrant "demand" status.
Bluehead, Flannelmouth, and Rio Grande sucker	<i>Catostomus sp.</i>	Sensitive/G4/S2S3	No historic or known potential on Forest.
Razorback sucker	<i>Xyrauchen texanus</i>	G1/SX Endangered	No historic or known potential on Forest.
Snake River sucker	<i>Chasmistes muriei</i>	GX/SX	No historic or known potential on Forest.
Colorado River, West slope, Bonneville, Greenback, and Rio Grande cutthroat trout	<i>Oncorhynchus sp.</i>	Sensitive/G4/S1	No historic or known potential on Forest.
Northern and southern redbelly, and finescale dace, Kendall warm springs dace	<i>Phoxinus sp.</i> <i>Rhinichthys osculus</i>	Sensitive G5/S1	No historic or known potential on Forest.
Pearl dace	<i>Margariscus margarita</i>	Sensitive/G5/S1	No historic or known potential on Forest.
Plains minnow	<i>Hybognathus placitus</i>	Sensitive	No historic or known potential on Forest.
Western silvery minnow	<i>Hybognathus argyritis</i>	G5/S2	No historic or known potential on Forest.
Suckermouth minnow	<i>Phenacobius mirabilis</i>	G5/S2	No historic or known potential on Forest.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Colorado River squawfish	<i>Ptychocheilus lucius</i>	G1/SX	No historic or known potential on Forest.
Orangethroat	<i>Etheostoma spectabile</i>	G5/S1	No historic or known potential on Forest.
<b>Amphibians</b>			
Tiger salamander	<i>Ambystoma tigrinum</i>	Sensitive/G5/S3S4	Not likely to occur on Forest. <sup>27</sup> None found in surveys to date. Common off of the Forest, perhaps elevationally or geophysically limited.
Western boreal toad	<i>Bufo boreas boreas</i>	G4T4S2	Not likely to occur on Forest (Baxter 1980). None found in surveys to date.
Boreal chorus frog	<i>Pseudacris triseriata maculata</i>	G5/S?	Species occurs on Forest, with more habitat potential than currently surveyed. Represented by other species, and is common throughout its range, so not selected as local concern.
Woodhouse's toad	<i>Bufo woodhousii</i>	G5/S4	Not likely to occur on Forest (Baxter 1980). None found in surveys to date. Common off of the Forest.
Plains spadefoot	<i>Spea bombifrons</i>	G5/S4	Not likely to occur on Forest (Baxter 1980). None found in surveys to date. Common off of the Forest.
Plains leopard frog	<i>Rana blairi</i>	G5	No historic occurrences and no potential on Forest.
Wyoming toad	<i>Bufo hemophrys baxteri</i>	G4/S1	Known only to southern WY.
<b>Plants</b>			
Zephyr windflower	<i>Anemone narcissiflora</i> ssp. <i>zephyra</i>	SSC G5T4/S1	Threats appear to be low; 4 of 5 known occurrences on Bighorn in Cloud Peak Wilderness (Scholl and Smith, 2000)
Brightgreen spleenwort	<i>Asplenium trichomanes-ramosum</i>	SSC G4/S2	3 occurrences on Bighorn NF.
Crenulate Moonwort	<i>Botrychium crenulatum</i>	None/NSS	G3/S1? Uncertain that it is present in the state, only reported on Forest (Fertig 2002a)
Hackberry	<i>Celtis occidentalis</i>	SSC G5/S1	Very common plant at edge of range.
Williams Spring-parsley	<i>Cymopterus williamsii</i>	SSC G2G3/S2S3	Local Endemic to Bighorn Mtns. Found near, but not known on, Bighorn NF.

<sup>27</sup> Baxter, G.T, and M.D. Stone. 1985. Amphibians and Reptiles of Wyoming. Wyoming Game and Fish Department. Cheyenne, WY. 137 pp.

Species Common Name	Species Scientific Name	Ranking	Rationale/Habitat
Bighorn fleabane	<i>Erigeron allocotus</i>	SSC G3/S2S3	Populations that have been surveyed appear to have stable trends; threats low overall; plants are usually found in relatively inaccessible areas with low forage, although road construction or trampling could be threat (Scholl and Smith 2000) 5 occurrences on Bighorn NF
Coil-beaked lousewort	<i>Pedicularis contorta</i> var. <i>ctenophora</i>	SSC G5T3/S2	9 known locations on forest (Fertig 9/6/01 e-mail).
Mogollon lousewort	<i>Pedicularis parryi</i> ssp. <i>mogollonica</i>	SSC G5T2T4Q/S1	Record in Bighorn NF is questionable and historical (Scholl and Smith 2000).
Blue elderberry	<i>Sambucus cerulea</i>	SSC G5?/S1	Only occurrence is historical and unknown whether extended on NF.
Slim-pod Venus' looking-glass	<i>Triodanis leptocarpa</i>	SSC G5?/S1	"Known" on Bighorn NF from vague, historical record (Welp, et al., 2000)
Ute's Ladies'-tresses	<i>Spiranthes diluvialis</i>	Threatened	Originally listed as potential to occur on the Forest by USFWS. Surveys for species and potential habitat conducted in 2002/2003 with negative findings.

## ASSESSMENT OF WYOMING PIF SPECIES FOR BIGHORN NF PLAN REVISION

As documented in the Wyoming Partners in Flight (PIF) Bird Conservation Plan (Cerovski et al. 2001), the following table summarizes how the PIF species (Levels I – III) will be analyzed in the revised plan. Following this table is a summary of the conservation measures and monitoring suggestions that would benefit the species mentioned. Occurrence records were only considered for Forest locations, rather than the surrounding plains. Occurrence records and species ranges were obtained from Downing (1990), Merrill (1997), BBS records (USGS 2001), Beels (1996), WYNDD (2001), Wyoming Observation Database (WGFD 2002), and National Geographic Field Guide.<sup>28</sup> “Coarse filter” listed as an assessment process indicates it was assumed that maintenance and sustenance of the habitat types would provide for species viability. Any category grouping as mentioned above (TES, Demand, Species of Concern, MIS) would indicate an analysis either at the fine filter scale (BE/BA) or within the effects analysis of the DEIS associated with the revised plan.

Species	Habitat	Assessment
<b>Level I Species (Conservation Action)</b>		
Mountain Plover	Shortgrass prairie	Not included due to lack of potential habitat and no known occurrences. Surveys conducted in 2002/2003 did not find any occurrences, and no potential habitat (USDA 2002).
Trumpeter Swan	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Sage Grouse	Shrub-steppe	Sensitive. No known leks on Forest, possibly summer habitat use. Conservation 1, 2, 3. Monitoring 1.
Baird's Sparrow	Shortgrass prairie	Species of Local Concern. Known occurrences. Conservation 3. Monitoring 2, 3.
McCown's Longspur	Shortgrass prairie	Not analyzed due to lack of potential habitat and no known occurrences.
Ferruginous Hawk	Shrub-steppe	Not analyzed due to lack of potential habitat and no known occurrences.
Brewer's Sparrow	Shrub-steppe	Sensitive. Known occurrences. Conservation 2, 3. Monitoring 2, 3.
Wilson's Phalarope	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Franklin's Gull	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Sage Sparrow	Shrub-steppe	Sensitive. No known occurrences, but potential. Conservation 2, 3. Monitoring 2, 3.
Swainson's hawk	Plains/Basin Riparian	Species of Local Concern. Known occurrences. Conservation 4. Monitoring 3, 4.
Long-billed Curlew	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Short-eared Owl	Shortgrass Prairie	FS Sensitive. Known occurrences. Conservation 3. Monitoring 3.

<sup>28</sup> National Geographic Society. 1999. Field Guide to the Birds of North America – 3<sup>rd</sup> Edition.

<b>Species</b>	<b>Habitat</b>	<b>Assessment</b>
Northern Goshawk	Conifer/Aspen	Sensitive Species. Known occurrences. Conservation 2, 3, 4, 6, 7. Monitoring 2, 4, 5.
Peregrine Falcon	Cliffs	Sensitive Species. Known occurrences. Conservation 4. Monitoring 1, 3, 4.
Burrowing Owl	Shortgrass Prairie	Not analyzed due to lack of potential habitat and no known occurrences.
Forster's Tern	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Bald Eagle	Riparian	Threatened. Conservation 4. Monitoring 4.
Upland Sandpiper	Shortgrass Prairie	Not analyzed due to lack of potential habitat and no known occurrences.
Black Tern	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
<b>Level II Species (Monitoring)</b>		
Calliope Hummingbird	Conifer/Riparian	Species of Local Concern. Conservation 2, 3. Monitoring 2, 3.
Lewis' Woodpecker	Conifer/Riparian	Sensitive. Little primary habitat (Ponderosa Pine). Conservation 2, 7. Monitoring 3.
Cassin's Kingbird	Juniper/Riparian	Not analyzed. Coarse filter. Primary habitat off Forest. Conservation 3. Monitoring 3.
Lark Bunting	Shortgrass Prairie	Not analyzed. Little potential habitat due to elevation. Conservation 3. Monitoring 3.
American White Pelican	Aquatic	Not analyzed. Lack of potential habitat and no known occurrences.
Williamson's Sapsucker	Conifer	Coarse filter. Known occurrences. Represented by other woodpeckers. Conservation 2, 7. Monitoring 3.
Black-backed Woodpecker	Conifer	Not analyzed. No known occurrences, outside species' range.
Gray Flycatcher	Juniper/Shrub	Not analyzed. No known occurrences, outside species' range.
Juniper Titmouse	Juniper	Not analyzed. No known occurrences, outside species' range.
Dickcissel	Shortgrass Prairie	Not analyzed. No known occurrences, limited potential habitat.
Chestnut-collared Longspur	Shortgrass Prairie	Not analyzed. Limited habitat potential. Conservation 3. Monitoring 3.
Scott's Oriole	Juniper	Not analyzed. No known occurrences, outside species' range.
Harlequin Duck	Riparian	Sensitive species. Known occurrence. Conservation 3, 5. Monitoring 2, 3.
Snowy Plover	Wetlands	Not analyzed. No known occurrences, outside species' range.
Black-chinned Hummingbird	Riparian/Shrub-steppe	Not analyzed. No known occurrences, outside species' range.
Rufous Hummingbird	Conifer	Species of local concern. Known occurrences. Conservation 2. Monitoring 3.
Red-naped Sapsucker	Aspen/Conifer	Coarse filter. Known occurrences. Conservation 2, 5, 7. Monitoring 3, 5.
Three-toed Woodpecker	Conifer	Sensitive species. Known occurrence. Conservation 2, 7. Monitoring 3, 5.
Willow Flycatcher	Riparian	Coarse filter. Known occurrences. Conservation 3, 5. Monitoring 2, 3.

Species	Habitat	Assessment
Hammond's Flycatcher	Conifer/Aspen/Riparian	Coarse filter. Known occurrences. Conservation 2, 3, 5. Monitoring 2, 3.
Cordilleran Flycatcher	Riparian/Conifer	Coarse filter. Known occurrences. Conservation 2, 3, 5. Monitoring 2, 3.
Pygmy Nuthatch	Conifer	Sensitive. Known occurrences. Conservation 2, 7. Monitoring 3, 5.
Marsh Wren	Wetlands	Not analyzed. No known occurrences. Little habitat potential due to elevation.
American Dipper	Riparian	Coarse filter. Known occurrences. Conservation 3, 5. Monitoring 3.
Plumbeous Vireo	Conifer	Coarse filter. Known occurrences. Conservation 2. Monitoring 3.
Townsend's Warbler	Conifer	Not analyzed. Limited potential habitat, outside of species' range.
Dusky Flycatcher	Conifer/Aspen	Coarse filter. Known occurrences. Conservation 2. Monitoring 3.
Western Bluebird	Juniper/Conifer	Not analyzed. No known occurrences. Outside of species' main range.
Sage Thrasher	Shrub-steppe	Not analyzed. No known occurrences, likely due to elevation.
Grasshopper Sparrow	Shortgrass Prairie	Sensitive. Known occurrences. Conservation 3. Monitoring 3.
Bobolink	Shortgrass Prairie	Coarse filter. Known occurrences. Conservation 3. Monitoring 3.
Common Loon	Wetlands	Species of Local Concern. Known occurrence. Conservation 3. Monitoring 3.
Black-billed Cuckoo	Riparian	Not analyzed. No known occurrences, likely due to elevation.
Yellow-billed Cuckoo	Riparian	Not analyzed. No known occurrences, likely due to elevation.
Eastern Screech- Owl	Riparian	Not analyzed. No known occurrences, likely due to elevation.
Western Screech-Owl	Riparian	Not analyzed. No known occurrences, likely due to elevation.
Great Gray Owl	Conifer	Species of Local Concern. Known occurrence. Conservation 2, 4. Monitoring 3, 5.
Boreal Owl	Spruce-fir	Sensitive species. Known occurrence. Conservation 2, 4. Monitoring 3, 5.
Broad-tailed Hummingbird	Riparian	Coarse filter. Known occurrences. Conservation 2, 3, 5. Monitoring 2, 3.
Western Scrub-Jay	Juniper	Not analyzed. No known occurrence.
Loggerhead Shrike	Shrub-steppe	Sensitive. Few known occurrences, likely due to elevation. Conservation 2, 3. Monitoring 2, 3.
Vesper Sparrow	Shrub-steppe	Coarse filter. Known occurrences. Conservation 2, 3. Monitoring 2, 3.
Lark Sparrow	Shrub-steppe	Coarse filter. Known occurrences. Conservation 2, 3. Monitoring 2, 3.
Golden-crowned Kinglet	Spruce-fir	Species of Local Concern. Known occurrences. Conservation 2, 7. Monitoring 3, 5.
MacGillivray's Warbler	Riparian	Coarse filter. Known occurrences. Conservation 3, 5. Monitoring 2, 3.
Ash-throated Flycatcher	Juniper	Not analyzed. No known occurrences.

Species	Habitat	Assessment
Bushtit	Juniper	Not analyzed. No known occurrences.
Brown Creeper	Conifer	Coarse filter. Known occurrences. Conservation 2, 7. Monitoring 3, 5.
Merlin	Conifer	Species of Local Concern. Known occurrences. Conservation 2, 4. Monitoring 3, 4.
<b>Level III (Local Interest)</b>		
Virginia's Warbler	Juniper/Shrub-steppe	Not analyzed. No known occurrences.
Prairie Falcon	Cliffs	Coarse filter. Known occurrences. Conservation 4. Monitoring 3, 4.
Brown-capped Rosy-Finch	Alpine	Not analyzed. No known occurrences.
Black-throated Gray Warbler	Juniper	Not analyzed. No known occurrences.
Black Rosy-Finch	Alpine	Coarse filter. Known occurrences. Conservation 3, 8. Monitoring 3, 6.
Blue Grouse	Conifer	Demand species. Known occurrences. Conservation 2, 3. Monitoring 3.
American Avocet	Wetlands	Not analyzed. No known occurrences, likely due to elevation.
Western Grebe	Wetlands	Coarse filter. Known occurrences, though limited due to elevation. Conservation 3. Monitoring 3.
Clark's Grebe	Wetlands	Not analyzed. No known occurrences, likely due to elevation.
White-tailed Ptarmigan	Alpine	Not analyzed. No known occurrences. Request for introduction denied in early 90's.
Common Poorwill	Shrub-steppe/Riparian.	Coarse filter. Known occurrences. Conservation 2, 3. Monitoring 3.
Sharp-tailed Grouse	Shrub-steppe/Grassland	Coarse filter. Known occurrences (plains subspecies) on southeast corner of the Forest. Limited use of the habitat during summer months. No leks known on Forest.
Golden Eagle	Cliffs	Coarse filter. Known occurrences. Conservation 4. Monitoring 3, 4.
Northern Harrier	Grassland	Sensitive. Known occurrences. Conservation 4. Monitoring 3, 4.
Lazuli Bunting	Riparian	Coarse filter. Known occurrences. Conservation 3. Monitoring 2, 3.
Willet	Wetlands	Coarse filter. Known occurrence. Conservation 3. Monitoring 2, 3.
Red-headed Woodpecker	Conifer	Coarse filter. Known occurrences. Conservation 2, 7. Monitoring 3, 5.
Says Phoebe	Shrub-steppe	Coarse filter. Known occurrences. Conservation 2, 3. Monitoring 2, 3.
Northern Rough-winged Swallow	Riparian	Coarse filter. Known occurrences. Conservation 2, 3. Monitoring 2, 3.
Clark's Nutcracker	Conifer	Coarse filter. Known occurrences. Conservation 2. Monitoring 3.
Rock Wren	Rocks	Coarse filter. Known occurrences. Monitoring 3.
Canyon Wren	Canyons	Coarse filter. Known occurrences. Monitoring 3.
Bewick's Wren	Juniper	Not analyzed. No known occurrences.
Veery	Riparian	Coarse filter. Known occurrences. Conservation 3, 5. Monitoring 2, 3.

Species	Habitat	Assessment
Ovenbird	Riparian	Coarse filter. Known occurrences. Conservation 2, 3, 5. Monitoring 2, 3.
Bullock's Oriole	Riparian	Coarse filter. Known occurrences. Conservation 3, 5. Monitoring 2, 3.

**Conservation Measures Applicable:**

- 1 = Sage Grouse Management Guidelines.
- 2 = Structural stages and condition of vegetation community type assessed in watershed prior to treatments.
- 3 = Forage utilization standards and guidelines for ungulates.
- 4 = Raptor protection guidelines (USFWS 1999). Nest Searches conducted as needed based on potential habitat and project potential to affect nesting habitat.
- 5 = Habitat given priority (retention/acquisition) in potential land exchanges.
- 6 = Goshawk management guidelines (USDAFS 1993, 2000) as applicable.
- 7 = Snag and Coarse Woody Debris retention guidelines.
- 8 = Dispersed recreation campsite closure/rotation.

**Anticipated Applicable Monitoring:**

- 1 = Population surveys by WYF&G.
- 2 = Livestock allotment forage utilization monitoring.
- 3 = Statewide avian point count surveys, Breeding Bird Surveys, Forest point count surveys.
- 4 = Nesting status checked in treatment areas, occupancy status determined annually where nesting territories known to occur.
- 5 = Snag and Coarse Woody Debris assessed following project treatments.
- 6 = Alpine (wilderness) dispersed recreation impact monitoring.

**ASSESSMENT OF US FISH AND WILDLIFE SERVICE BIRDS OF CONCERN FOR BIGHORN NF PLAN REVISION**

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As documented in the 2003 Birds of Concern species list, the following table summarizes how these species (Bird Conservation Region 10) will be analyzed in the revised plan, as directed by a recent Memorandum of Understanding with the US Fish and Wildlife Service. Most of the species are similarly addressed in the PIF assessment and will be referred back to the conservation measures and monitoring developed with that list. Similar to the PIF list, occurrence records were only considered for Forest locations, rather than the surrounding plains. Occurrence records and species ranges were considered as described with the PIF list.

Species	Habitat	Assessment
Swainson's hawk	Meadows	Species of Local Concern species. See PIF assessment. Known occurrences.
Ferruginous hawk	Plains/Basin	Not analyzed as not known historically on Bighorn, limited potential due to elevation. See PIF assessment.
Golden Eagle	Canyons/Rock	Known occurrences. See PIF Assessment.
Peregrine falcon	Canyons/riparian	FS Sensitive species. See PIF assessment.
Prairie falcon	Canyons/Rock	Known occurrences. Secure nesting habitat,

Species	Habitat	Assessment
		with majority of use at lower elevations.
Yellow rail	Wetlands	Not analyzed as not known historically on Bighorn, limited potential due to elevation.
American golden plover	Wetlands	Not analyzed as not known historically on Bighorn, outside of species' range.
Snowy plover	Wetlands	Not analyzed as not known historically on Bighorn, limited habitat potential due to elevation.
Mountain Plover	Shortgrass prairie	Not included due to lack of potential habitat and no known occurrences. Surveys conducted in 2002 and 2003 did not find any occurrences, and minimal if any potential habitat (USDA 2002).
Solitary sandpiper	Wetlands	Not analyzed due to no known breeding, though migratory use of Forest has occurred. Represented by other wetland species.
Upland sandpiper	Shortgrass prairie	Not analyzed as no shortgrass prairie or prairie dog towns on the Forest. Little to no habitat potential. No known or historic occurrences.
Whimbrel	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Long-billed curlew	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Marbled godwit	Wetlands	Not analyzed due to lack of potential habitat and no known occurrences.
Sanderling	Wetlands	Not analyzed due to no historic or known potential on Forest.
Wilson's phalarope	Wetlands	Not analyzed due to no historic or known potential on Forest.
Yellow-billed cuckoo	Cottonwood riparian	Possible adjacent to Forest in low elevation habitat. Due to lack of habitat and historical occurrence on Forest, not analyzed.
Flammulated owl	Conifer/Aspen	Possible occurrence. FS Sensitive.
Black swift	Waterfalls	Not analyzed as not known to occur historically on Bighorn. Limited potential due to short/small waterfalls. Surveys in 8/02 did not find any occurrences.
Lewis' woodpecker	Mature conifer, ponderosa	FS Sensitive. See PIF assessment.
Williamson's sapsucker	Mature conifer	Known occurrences. See PIF assessment.
Red-naped sapsucker	Aspen/Cottonwood/Mature Conifer	Known occurrences. More common species adjacent to Forest, but represented by other woodpecker species. See PIF assessment.
White-headed woodpecker	Mature conifer	Not analyzed. No known occurrences. Outside species' range.
Loggerhead shrike	Shortgrass prairie.	FS Sensitive. See PIF assessment.
Pygmy nuthatch	Mature conifer	Known occurrences. See PIF assessment
Virginia's warbler	Juniper/Shrub-steppe	Not analyzed. No known occurrences. Outside species' range.
Brewer's sparrow	Sagesteppe	FS Sensitive/MIS. See PIF assessment.
McCown's longspur	Shortgrass prairie	Not analyzed due to lack of potential habitat and no known occurrences.

# Descriptions of Species Rankings

## **FEDERAL – U.S. FISH AND WILDLIFE SERVICE**

Federal rankings include those listed or being considered for listing under the ESA. The current list of these species was obtained from the USFWS in a letter dated January 10, 2003. *Endangered* species are those that are in danger of extinction, while *threatened* species are those that are likely to become endangered. *Proposed* species are those that are awaiting final listing action, while *candidate* species are those that have been evaluated and are warranted for listing under the Act but are precluded due to higher priorities.

## **U.S. FOREST SERVICE SENSITIVE**

Forest Service *sensitive* species are designated by the Regional Forester. Sensitive species are further used to identify species for which population viability is a concern, as evidenced by a current or predicted downward trend in population or habitat capability. Identifying sensitive species is pre-emptive in focusing management attention on species prior to a potential listing under the ESA, to proactively avoid listing under the ESA. Direction for sensitive species management was derived by the agency in approximately 1994, and this direction is contained in the Forest Service Manual under the 2670 section. The most recent list was developed in 2003.

## **NATURAL HERITAGE**

Natural Heritage rankings are described at four levels, though sometimes only two. These include a global ranking (G), a regional or trinomial ranking (T), a National (N) ranking, and a state ranking (S). Estimates of rarity are assigned to each level, with a value of 1 to 5. A score of 5 indicates secure populations, while a 1 indicates an imperiled population. Other indicators include a “B” for breeding, “N” for non-breeding, an “X” for extinct, an “H” for historical, an “A” for accidental or vagrant, “E” for exotic, and a “Z” for those species not of concern in Wyoming. The Natural Heritage rankings are maintained by The Nature Conservancy. The WYNDD maintains these rankings on their database at the University of Wyoming in Laramie. Only global and state rankings were displayed in the tables in the main document.

## **STATE NATIVE SPECIES STATUS**

State rankings are those assigned by the Wyoming Game and Fish Department (WGFD). The WGFD also maintains an observation database for game and non-game species, and publishes atlases detailing the observations (Luce et al, 1999). The non-game and rare species occurrences will likely be assimilated into the WYNDD database in the near future. State rankings are described as Native Species Status (NSS) followed by a numerical indicator of 1 to 7. Only numbers 1 through 3 indicate those species recognized as high priorities for conservation action, with a 1 indicating possible extirpation (highest concern level).

## **PARTNERS IN FLIGHT**

Also included under State rankings for birds are the priority species listed by the Wyoming Partners In Flight group as described in the Wyoming Bird Conservation Plan<sup>29</sup>

<sup>29</sup> Wyoming Game and Fish Department. 2002. Hand-written comments to draft Bighorn NF emphasis species list. Provided by Andrea Cerovski. Lander, WY. 10 pp.

(Cerovski et al 2001). In this ranking system, a total of 35 points is possible for each species, with the higher the number indicating an increased concern of species sustainability. Ranking parameters established nationally included relative abundance, breeding distribution, non-breeding distribution, threats on breeding grounds, threats on non-breeding grounds, population trend, and area importance with from 1 to 5 points assigned to each parameter, with a 5 indicating the highest concern.<sup>30</sup> To be included on the Wyoming list, a total score of 18 or above was required, with an Area Importance of 3 or more and a Population Trend of 3 or more. The PIF document identifies three levels of categories. Level I species, designated for needed conservation action, were considered in this initial categorization process. Level II species were designated in the PIF document for monitoring or further data collection needs. Several of these species are listed under the TES category, and/or would be monitored through a Forest monitoring program for avian species (point counts). Levels I and II identify species which may be of viability concern. Level III species were identified as those species of local interest, but not necessarily from a viability perspective. A previous section specifies how each species listed in the Wyoming Plan will be addressed in this revision process.

## **WYNDD**

Finally, additional species considered in the emphasis categories were derived primarily from the Fine Filter Analysis for the Bighorn National Forest (Welp et al 2000), rather than looking at all species mentioned in the Status of Rare Vertebrates in the Bighorn Landscape (Beauvais 1999). Plant species rankings in addition to the heritage rankings described above would also include the plants listed under WYNDD's "watch" list, which includes species that may be locally abundant and only moderately threatened under current management. Three extra rankings are listed for plants, including high, medium, and low conservation priority. Those with high priority were considered for this revision. Due to limited geographic ranges or sensitive life-history traits, however, watch species or lower level conservation priority species could become species of concern if habitat loss or other threats increase.

## **US FISH AND WILDLIFE SERVICE BIRDS OF CONSERVATION CONCERN**

In 2002, the USFWS identified Birds of Conservation Concern<sup>31</sup>, in conjunction with their responsibility administering the Migratory Bird Treaty Act, and in conjunction with the modification of their "candidate" species designation. These species are required for consideration according to an MOU signed with the USFWS and the FS in 2003<sup>32</sup>. The selection criteria were based on five factors, of which the Partners In Flight designation was one. Species are designated at the regional level for the agency, and the Bighorn NF falls within Region 6. Further descriptions of the list and its history are available online.

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<sup>30</sup> Carter, M., W. Hunter, D. Pashley, J Bradley, C Aid, J. Price, G. Butcher. 1997. Setting landbird conservation priorities for states, provinces, and physiographic areas of North America. Partners in Flight Priority Database Final Report, Colorado Bird Observatory, Brighton, CO.

<sup>31</sup> US Fish and Wildlife Service. 2002. Birds of Conservation Concern. Available online at <http://migratorybirds.fws.gov/reports/specon/tblconts.html>.

<sup>32</sup> USFWS and USFS. 2003. Memorandum of Understanding to promote the conservation of migratory birds. Washington, D.C.

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